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The Politics of Environmental Networks

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Abstract

Environmental political networks research uses social network analysis to investigate the political processes underlying the complex relational dynamics of environmental governance. The analysis of internal political processes sheds light on the relational mechanisms of collaboration and contention that underpin coalition-building, mobilization, and environmental policy decision-making. Additionally, understanding environmental outcomes requires investigating external politics, namely, how environmental networks are embedded in broader institutional and political contexts. This editorial provides a brief overview of the internal and external politics of environmental networks and presents the conceptual and empirical contributions of the 11 articles that investigate both dimensions of environmental political networks by combining social network analysis with other methodological tools.

Keywords

environmental movements; environmental politics; environmental political networks; discourse networks; policy networks; political opportunities; social network analysis

1. How Politics Matters in Environmental Networks

The complexity of environmental problems stems from the involvement of diverse actors, high levels of uncertainty and conflict, and their often cumulative, systemic, cross-sectoral, and transboundary nature (Balint, 2011). Addressing these challenges as a society entails a redistribution of costs and benefits among actors with divergent interests, resources, values, and beliefs, rendering environmental decision-making

inherently political (Carter, 2018). Environmental politics, in terms of the collective choices concerning the means, goals, and governance of environmental problems (Kraft, 2021), unfolds as dynamic interactions—such as cooperation, resource exchanges, discursive challenges, joint membership, and event participation—among a pluralist landscape of government, business, and civil society actors exercising power and influence to shape environmental outcomes. These interactions are the foundations of processes of coalition-building, advocacy, mobilization, and contestation (Di Gregorio, 2012; Diani & McAdam, 2003; Saunders, 2013; Weible & Sabatier, 2005) and are conditioned by the broader institutional political context (McAdam & Tarrow, 2018). Understanding the power dynamics underlying these interactions is especially urgent today, as nativist, authoritarian, and anti-environmental discourses gain traction amid escalating ecological crises (Tindall et al., 2022).

Environmental political networks are complex meso-level structures of systems of interactions that are continuously produced, reproduced, and situated. Within these, political power is simultaneously wielded, negotiated, and contested. SNA is particularly well-suited to examine the complexity of environment–society interactions (Bodin et al., 2019) and the relational dimensions that are central to environmental political processes unfolding across multiple scales and political spheres (Berardo et al., 2017). This issue brings together contributions that use SNA to investigate how power-laden relationships influence environmental political processes and action. Analytically, we distinguish between: (a) the *internal politics* of environmental networks, that is, political processes internal to the environmental network under investigation; (b) the *external politics*, or broader institutional and political processes affecting environmental networks; and (c) how a deeper understanding of the interplay between the two helps explain environmental outcomes. The “internal” versus “external” distinction refers to the boundaries of the network under investigation (Laumann et al., 1989) and is used here as a purely analytical device. Both dimensions are integral components of the overall political process, jointly influencing how environmental networks operate. This issue showcases research exploring the internal and external politics of environmental networks and the interplay between the two. Ultimately, it underscores the centrality of politics in shaping environmental networked governance. Methodologically, all contributions to this thematic issue use SNA to investigate how meso-level environmental political networks operate and/or interact with broader political opportunities to determine environmental outcomes.

2. The Politics of Environmental Networks

Our approach to environmental politics adopts a dynamic and networked perspective on the mechanisms and patterned interactions that (re)configure power relations across (extra)institutional and discursive contexts (Fernández G. & Cinalli, in press; Tilly & Tarrow, 2015). Environmental responses are viewed as emergent and sustained processes of recognition and (re)negotiation, in which micro- and macro-level dynamics are mutually constitutive (Knoke et al., 2021; Martin, 2009). In such political processes, the associated interactions and feedback relations between the internal and external political dimensions of environmental networks are agent-driven, structurally contingent, and imply some relational continuity.

2.1. The Internal Politics of Environmental Networks

Environmental political networks are not merely configurations of relationships, but structures mediating strategic interactions among actors seeking to influence environmental outcomes. Internal environmental

politics unfold through relational mechanisms (Hedström & Swedberg, 1996; Ocelík et al., 2022; Schneider, 2024) like collaboration and conflict. Such mechanisms take various forms and are key for resource exchanges (Klijn, 1997), framing processes and contestation (Lele et al., 2018), coalition building, and mobilization (Van Dyke & McCammon, 2010; Weible, 2023).

Environmental policy networks research (Broadbent, 2016; Schneider, 1988; Ylä-Anttila et al., 2018) centers around environmental problems to examine how a diversity of policy actors collaborate and contest policy-making processes. In this issue, Kammerer and Ingold (2025) present a co-evolution study contributing to a long-lasting debate within the Advocacy Coalition Framework (ACF) tackling the “chicken and egg” question around policy beliefs and coordination within the Swiss climate policy subsystem (Jenkins-Smith & Weible, 2025). They show that belief similarity and coordination reinforce each other over time, supporting the core ACF assumption concerning the persistence of coalition structures (Gronow et al., 2025).

Several studies of environmental networks within contentious politics address the collective action dilemma through SNA, showing how individual embeddedness in networks influences decisions to participate in collective action (Diani & Fernández, 2024). Contributions to this issue investigate the internal politics of environmental networks by analysing how structural and relational features shape political processes underlying environmental movements, with particular attention to tie formation and the mechanisms connecting mobilizing structures with framing processes. Several contributions explore how social movements respond to internal divisions between moderate and radical factions and find that, unlike in previous decades (Saunders et al., 2025), ideological differences have recently not resulted in fragmentation; instead, they have been resolved via diverse strategies (Ciordia et al., 2025; Ferro, 2025). For instance, Ferro (2025), examining the tensions within Fridays for Future activism in Italy, found that framing disputes between reformists and rejectionists were resolved by framing negotiation via deliberative decision-making.

Environmental discourses (Dryzek, 2013; Hajer, 1993) (de-)legitimizing particular policy responses have also been widely studied as networks (Leifeld, 2020). Studies include analyses of the evolution of prevailing themes, actors (Kammerer & Ingold, 2023), polarization (Fisher et al., 2013; Leifeld & Haunss, 2012), echo chambers, and discourse coalitions (Jasny et al., 2015; Kukkonen et al., 2017). In the past decade, such research has been expanded to increasingly influential social media discourses (Veltri & Atanasova, 2017), partisan sorting (T. H. Y. Chen et al., 2021), and framing dynamics (K. Chen et al., 2023). In this issue, Fleckenstein et al. (2025) show how internal coalition formation processes and discursive power shaped the adoption of the EU Nature Restoration Law. Several other contributions (Drecker, 2025; Hamilton & De Bièvre, 2025; Leifeld & Fisher, 2025; Nagel et al., 2025) examine in new ways how processes of framing (Benford & Snow, 2000), politicization (Palonen, 2000), and polarization (Fiorina & Abrams, 2008) expand or contract the negotiation space and policy change. Nagel et al. (2025) elaborate on how the (de)politicization dynamics in the German farmers' protests anticipated policy change and led to a policy reversal at the expense of the environment. Hamilton and De Bièvre (2025) find that a “Baptist-Bootlegger” coalition of agricultural producers and environmental groups forged via opportunistic framing stalled the EU-Mercosur association agreement. The tension between ideological and opportunistic behaviors is one of the traversing themes of the thematic issue that two contributions address by exploring polarization dynamics (Drecker, 2025; Leifeld & Fisher, 2025). Leifeld and Fisher (2025) distinguish between intrinsic and instrumental polarization in the US climate debates, contrasting entrenched ideological positioning with opportunistic

amplification of ideological differences to mobilize constituency support. They find that polarization dynamics revolved around endogenous political events, such as elections or ratifications, and followed an instrumental logic.

2.2. The External Politics of Environmental Networks

Most research on environmental political networks focuses on their internal politics. Yet, environmental networks operate within broader political contexts that constrain or enable internal political dynamics and associated interactions. One long-standing critique of policy network approaches is their insufficient attention to the broader political and institutional context (Adam & Kriesi, 2007; Dowding, 1995). External political opportunities affecting environmental networks can be stable or volatile (McAdam & Tarrow, 2018). More institutionalised features, such as the openness of political regimes, the type of electoral system, the division of authority across levels of governance, and the geopolitical context, affect internal power constellations within environmental networks (Carter, 2018; Di Gregorio et al., 2019; Schneider, 2025). More dynamic, less institutionalised political opportunities that impact the power constellations and strategies in environmental movement networks, for example, include the level of fragmentation of government elites, broader political alignments, state openness, and the state's willingness to facilitate or repress contention (Saunders et al., 2025; Tarrow, 2011).

From this perspective, Ciordia et al. (2025) present a conceptual framework showing how external contextual features—political opportunity structures, as well as socio-economic and cultural contexts—interact with relational factors to shape coalition behavior in the environmental collective action field. They examine how the 2011 transformative event of ETA's abandonment of violence in the Basque Country influenced phases of environmental contention. Their analysis distills nuanced differences in the interactions between shifts in broader political conflicts and the role of ideological congruence and pragmatism in coalition-building for environmental action. A similar transformative event, the German energy transition in 2011 that phased out nuclear energy, is the focus of the analysis of Schneider (2025). The article uses an ecology of games approach (Lubell et al., 2014) to investigate how broader structural conditions, in combination with the Fukushima disaster, contributed to explaining this drastic nuclear policy reversal. The unique historical legacy of environmentalism and Green Party political achievements in Germany, facilitated by federal multi-level electoral competition, bicameralism, and a proportional electoral system, was among the structural forces shaping coalition-building and power constellations in the national climate-energy policy network.

Further, in their study on environmental movement networks, Saunders et al. (2025) show how the more volatile political opportunities are mutually co-constituted with environmental movement organizations' (EMOs) tactics and status. EMOs' perceptions about governmental openness (de Moor & Wahlström, 2022) interact with EMO status vis-à-vis the government and their collective action repertoires, affecting collaborative behavior. Two studies that advance our knowledge of climate change polarization consider the role of broader political processes in this issue. Drecker (2025) investigates the role of broader electoral campaigns on climate Twitter debates in Germany. Findings reveal a cyclic pattern for partisan polarisation, while affective polarization levels—reflecting deep divides between climate advocates and obstructionists—remained largely stable. In a study on climate change polarization in the US, Leifeld and Fisher (2025) investigate how “endogenous” national-level climate-related political events versus “exogenous” climate

change disasters and higher-level international events impact polarization in the US climate policy domain. They find that political entrepreneurs exploit polarization strategically to their electoral advantage and to impact climate (in)action, a clear recognition that policy actors can affect windows of opportunity, bending them to their advantage.

Finally, environmental decision-making unfolds within complex multi-level governance systems (Betsill & Bulkley, 2006) where internal and external dimensions of political networks come together. Local self-governance arrangements (Ostrom, 2014) intersect with subnational, national, and international environmental governance processes (Di Gregorio et al., 2019; Nagel & Bravo-Laguna, 2022). Internal network dynamics, such as collaboration and conflict, operate from micro to macro levels, shaping relational processes and coordination across governance levels. Their multi-level character generates feedback loops and strategic interactions across levels (Roger et al., 2019), such as the well-recognized “boomerang effect” (Keck & Sikkink, 2014). Lehotský and Černoch (2025), in this issue, find a similar effect, as the debate on the cross-border dispute about the Turów mine initially resembled a multi-level polycentric structure, with local organizations mobilizing EU institutions to bring the issue into the national-level agenda. However, later discourse centralization around national governments sidelined both local and EU-level actors, enabling reframing toward technological fixes, and neglecting the environmental damage of ongoing coal production. While Nagel et al. (2025) investigate the internal politics of agricultural protests in Germany, they also recognise how increased politicization of agricultural debates escalated to higher levels of governance from individual member states to the EU level.

3. The Politics of Environmental Networks: Methodological Approaches

This issue presents new empirical research that investigates interdependencies and relational dynamics of environmental political networks. Specifically, it illustrates how SNA (Wasserman & Faust, 1994) allows for unpacking the role of internal network features on environmental politics. Conversely, studying the external processes and dynamics shaping environmental political networks often demands the use of mixed methods, longitudinal or comparative network analysis. Hence, this issue showcases how mixed methods (Bellotti, 2015) help connect endogenous network processes to broader contexts. Schneider (2025) applies a survey- and interview-based SNA design incorporating multidimensional scaling, hierarchical clustering, discourse network analysis (DNA; Leifeld, 2016) for boundary definition purposes, and Exponential Random Graph Models (Lusher et al., 2013) to identify drivers of information exchange among energy network actors. Saunders et al. (2025) compare environmental networks over time by combining interviews with an organizational network survey analysis. Thematic analysis of interview data elucidates how actor perceptions of national political opportunities shape network patterns. Further network data provide information on internal strategies, relations between activists and the government, and collaboration patterns. Fleckenstein et al. (2025) use DNA and process tracing to examine how discourse coalition processes translate into policy change. DNA allowed for identifying coalitions around the adoption of the law and assessing the influence of discourse coalitions. Process tracing helped capture the broader political and social dynamics within and across discourse coalitions. Ferro (2025) uses participant observation-based frame analysis and a survey as sources for an ERGM analysis that identifies drivers of tie formation in environmental networks. Specifically, qualitative frame analysis helped identify the orientation of EMOs (i.e., rejectionist vs reformist approaches to climate change) and assess how homophily affects internal collaboration.

Other contributions in this issue adopt longitudinal studies to mitigate the limitations inherent to the static nature of SNA by unpacking historical trajectories. Hence, Kammerer and Ingold (2025) use Stochastic Actor Oriented Models (Snijders et al., 2010) to clarify a long-running debate among ACF scholars on the relationship between beliefs and internal coordination. Next, Hamilton and De Bièvre (2025) applied a combination of DNA, text analysis, and linear regression analysis on temporal network data to investigate trade negotiations. Quantitative text analysis uncovered the logic behind internal coalition formation, whereas DNA identified narratives and alignment across groups. Linear regression analysis helped identify the extent to which narrative salience led some groups to adopt narratives advanced by other groups. In turn, Lehotský and Černoch (2025) use qualitative longitudinal DNA to study the extent to which dispersion of authority, state control, and bargaining dynamics characterized the evolution of the Turów mine dispute. Similarly, Nagel et al. (2025) use DNA to examine the evolution of farmer protests, capture the evolution of polarization in the debate, and analyze the theoretical nexus between politicization and policy change. For his part, Drecker (2025) applies a longitudinal network design to climate policy discourse to understand the extent to which electoral dynamics explain the varying polarization of partisan and non-partisan actors. Leifeld and Fisher (2025) also address the evolution of polarization by recognising multi-level governance features and combining national-level with state-level data. Time series measures capturing structural polarisation and detecting periods of structural stability in discourse networks help distinguish between the effects of exogenous events and endogenous political dynamics on polarisation. Finally, Ciordia et al. (2025) use Quadratic Assignment Procedures regression analysis (Krackhardt, 1987) to examine how broader political shifts are associated with interorganizational collaboration in environmental collective action fields and identify dyadic features shaping collaboration over time. Their study analyzes successive network snapshots across time to describe changes in collaboration patterns between shifting political moments.

4. Conclusion

This thematic issue calls for re-centering environmental network research around the political processes that shape these structures. The contributions to this issue advance our knowledge of internal environmental politics in three interrelated ways. First, they reveal the richness of actors, actions, and the contested and overlapping domains that constitute environmental political networks, spanning from elite networks, environmental movement, and collective action fields, to interest groups, multi-actor policy, and discourse networks. Second, they uncover how this heterogeneity generates distinct relational dynamics, where pragmatic collaboration coexists and often collides with identity—or ideology-driven political action. Third, they highlight the specificity of negotiation in environmental politics, increasingly involving complex, cumulative, and systemic environmental challenges spanning across sectors, multi-level governance processes, and involving contrasting value systems from anthropocentric to ecocentric, reformist to radical, and dynamics combining collaboration, contention, resistance, and conflict. In doing so, these studies offer crucial insights into governance processes and power dynamics of a diversity of environmental political networks.

While focusing on internal politics is crucial to understand how environmental networks operate, elucidating how these are embedded into broader institutional contexts and socio-political processes is often needed to explain environmental outcomes. This thematic issue shows that the networked political processes internal to environmental domains and the broader political processes or contexts that influence environmental networks co-evolve through mutual influence. To better understand policy change and environmental

outcomes, future research needs to examine how the two interact. Longitudinal, comparative, multi-method, and mixed research designs, as in part documented by this issue's contributions, are well-suited to investigate both and span across internal and external political divides. Such methodological pluralism allows for exploring beyond network mapping and tie-formation explanations. It also shifts focus to the interactions between the power-laden internal environmental network processes and the broader political processes that jointly shape the trajectories of environmental change.

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References

- Adam, S., & Kriesi, H. (2007). The network approach. In P. Sabatier (Ed.), *Theories of the policy process* (pp. 129–154). Routledge.
- Balint, P. J. (2011). *Wicked environmental problems: Managing uncertainty and conflict*. Island Press.
- Bellotti, E. (2015). *Qualitative networks: Mixed methods in sociological research*. Routledge.
- Benford, R. D., & Snow, D. A. (2000). Framing processes and social movements: An overview and assessment. *Annual Review of Sociology*, 26, 611–639.
- Berardo, R., Alcaniz, I., & Jasny, L. (2017). Networks and the politics of the environment. In J. N. Victor, A. H. Montgomery & M. Lubell (Eds.), *The Oxford handbook of political networks* (pp. 611–628). Oxford University Press.
- Betsill, M. M., & Bulkley, H. (2006). Cities and the multilevel governance of global climate change. *Global Governance*, 12, 141–159.
- Bodin, Ö., Nohrstedt, D., Baird, J., Summers, R., & Plummer, R. (2019). Working at the “speed of trust”: Pre-existing and emerging social ties in wildfire responder networks in Sweden and Canada. *Regional Environmental Change*, 19, 2353–2364.
- Broadbent, J. (2016). Comparative climate change policy networks. In J. N. Victor, M. N. Lubell & A. H. Montgomery (Eds.), *The Oxford handbook of political networks* (pp. 301–332). Oxford University Press.
- Carter, N. (2018). *The politics of the environment: Ideas, activism, policy*. Cambridge University Press.
- Chen, K., Molder, A. L., Duan, Z., Boulianne, S., Eckart, C., Mallari, P., & Yang, D. (2023). How climate movement actors and news media frame climate change and strike: Evidence from analyzing Twitter and news media discourse from 2018 to 2021. *The International Journal of Press/Politics*, 28(2), 384–413.
- Chen, T. H. Y., Salloum, A., Gronow, A., Ylä-Anttila, T., & Kivelä, M. (2021). Polarization of climate politics results from partisan sorting: Evidence from Finnish Twittersphere. *Global Environmental Change*, 71, Article 102348.
- Ciordia, A., Schiavo, L., & Diani, M. (2025). Shifting grounds of collaboration in changing contexts: Evolving environmental networks in the Basque Country. *Politics and Governance*, 13, Article 9932. <https://doi.org/10.17645/pag.9932>
- de Moor, J., & Wahlström, M. (2022). Environmental movements and their political context. In M. Grasso & M. Giugni (Eds.), *The Routledge handbook of environmental movements* (pp. 263–277). Routledge.

- Diani, M., & Fernández, E. (2024). Soziale Bewegungen. In C. Stegbauer & R. Häußling (Eds.), *Handbuch Netzwerkforschung*. Springer.
- Diani, M., & McAdam, D. (2003). *Social movements and networks: Relational approaches to collective action*. Oxford Academics.
- Di Gregorio, M. (2012). Networking in environmental movement organisation coalitions: Interest, values or discourse? *Environmental Politics*, 21(1), 1–25.
- Di Gregorio, M., Fattorelli, L., Paavola, J., Nurrochmat, D. R., May, P. H., Brockhaus, M., Sari, A. M., & Kusumadewi, S. D. (2019). Multi-level governance and power in climate change policy networks. *Global Environmental Change*, 54, 64–77.
- Dowding, K. (1995). Model or metaphor? A critical review of the policy network approach. *Political Studies*, 43(1), 136–158.
- Drecker, P. (2025). Dynamics of electoral polarisation in climate policy discourse: A temporal network analysis. *Politics and Governance*, 13, Article 10004. <https://doi.org/10.17645/pag.10004>
- Dryzek, J. S. (2013). *The politics of the Earth: Environmental discourses*. Oxford University Press.
- Fernández G., E., & Cinalli, M. (in press). On political action: “Social networks and migrants’ participation: studying relational patterns for mobilization and political action.” In B. Bilecen, & M. J. Lubbers (Eds.), *Handbook of international migration and social networks*. Edward Elgar Publishing.
- Ferro, A. (2025). Network alliances among Fridays for Future local groups in Italy: Relational mechanisms in action. *Politics and Governance*, 13, Article 10026. <https://doi.org/10.17645/pag.10026>
- Fiorina, M. P., & Abrams, S. J. (2008). Political polarization in the American public. *Annual Review of Political Science*, 11, 563–588.
- Fisher, D. R., Waggle, J., & Leifeld, P. (2013). Where does political polarization come from? Locating polarization within the US climate change debate. *American Behavioral Scientist*, 57(1), 70–92.
- Fleckenstein, S., Schaub, S., & Sotirov, M. (2025). Forests in the spotlight: Discourse coalitions and storylines shaping the EU nature restoration regulation. *Politics and Governance*, 13, Article. <https://doi.org/10.17645/pag.10184>
- Gronow, A., Satoh, K. & Ylä-Anttila, T. (2025). Changing beliefs, enduring coalitions: a longitudinal analysis of policy beliefs and advocacy coalition structures. In H. C. Jenkins-Smith & C. M. Weible (Eds.), *The advocacy coalition framework* (pp. 43–64). Springer.
- Hajer, M. A. (1993). Discourse coalitions and the institutionalization of practice. In F. Fischer. & J. Forester (Eds.), *The argumentative turn in policy analysis and planning* (pp. 43–67). Duke University Press.
- Hamilton, S., & De Bièvre, D. (2025). Bootleggers, baptists, and policymakers: Domestic discourse coalitions in EU–Mercosur negotiations. *Politics and Governance*, 13, Article 10029. <https://doi.org/10.17645/pag.10029>
- Hedström, P., & Swedberg, R. (1996). Social mechanisms. *Acta Sociologica*, 39(3), 281–308.
- Jasny, L., Waggle, J., & Fisher, D. (2015). An empirical examination of echo chambers in US climate policy networks. *Nature Climate Change*, 5, 782–786.
- Jenkins-Smith, H. C., & Weible, C. M. (2025). *The advocacy coalition framework*. Springer.
- Kammerer, M., & Ingold, K. (2023). Actors and issues in climate change policy: The maturation of a policy discourse in the national and international context. *Social Networks*, 75, 65–77.
- Kammerer, M., & Ingold, K. (2025). The hierarchy of beliefs and coordination: A “chicken and egg” problem. *Politics and Governance*, 13, Article 10369. <https://doi.org/10.17645/pag.10369>
- Keck, M. E., & Sikkink, K. A. (2014). *Activists beyond borders: Advocacy networks in international politics*. Cornell University Press.

- Klijn, E. (1997). Policy networks: An overview. In W. J. Kickert, E. Klijn & J. F. Koppenjan (Eds.), *Managing complex networks: Strategies for the public sector* (pp. 15–34). Sage.
- Knoke, D., Diani, M., Hollway, J., & Christopoulos, D. (2021). *Multimodal political networks*. Cambridge University Press.
- Krackhardt, D. (1987). QAP partialling as a test of spuriousness. *Social Networks*, 9, 171–186.
- Kraft, M. E. (2021). *Environmental policy and politics*. Routledge.
- Kukkonen, A., Ylä-Anttila, T., & Broadbent, J. (2017). Advocacy coalitions, beliefs and climate change policy in the United States. *Public Administration*, 95(3), 713–729.
- Laumann, E. O., Marsden, P. V., & Prensky, D. (1989). The boundary specification problem in network analysis. *Research Methods in Social Network Analysis*, 61(8), 176–179.
- Lehotský, L., & Černoch, F. (2025). Litigating across borders: Subnational actors and supranational governance in the Turów dispute. *Politics and Governance*, 13, Article 10194. <https://doi.org/10.17645/pag.10194>
- Leifeld, P. (2016). Discourse network analysis: Policy debates as dynamic networks. In J. N. Victor, M. N. Lubell & A. H. Montgomery (Eds.), *The Oxford handbook of political networks* (pp. 301–332). Oxford University Press.
- Leifeld, P. (2020). Policy debates and discourse network analysis: A research agenda. *Politics and Governance*, 8(2), 180–183.
- Leifeld, P., & Fisher, D. (2025). Up and down with...polarisation? Intrinsic and instrumental polarisation dynamics in US climate policy debates. *Politics and Governance*, 13, Article 9933. <https://doi.org/10.17645/pag.9933>
- Leifeld, P., & Haunss, S. (2012). Political discourse networks and the conflict over software patents in Europe. *European Journal of Political Research*, 51(3), 382–409.
- Lele, S., Brondizio, E. S., Byrne, J., Mace, G. M., & Martinez-Alier, J. (2018). Framing the environment. In Lele, S., Brondizio, E. S., Byrne, J., Mace, G. M., & Martinez-Alier, J. (Eds.) *Rethinking environmentalism. Linking justice, sustainability and diversity*. Strüngmann Forum Reports, 23 (pp. 1–22). MIT Press. <https://doi.org/10.7551/mitpress/11961.003.0003>
- Lubell, M., Robins, G., & Wang, P. (2014). Network structure and institutional complexity in an ecology of water management games. *Ecology and Society*, 19(4), Article 23.
- Lusher, D., Koskinen, J., & Robins, G. (2013). *Exponential random graph models for social networks: Theory, Methods, and Applications*. Cambridge University Press.
- Martin, J. L. (2009). *Social structures*. Princeton University Press.
- McAdam, D., & Tarrow, S. (2018). The political context of social movements. In D. A. Snow, S. A. Soule, H. Kriesi & H. J. McCammon (Eds.), *The Wiley Blackwell companion to social movements* (pp. 17–42). Wiley Blackwell.
- Nagel, M., & Bravo-Laguna, C. (2022). Analyzing multi-level governance dynamics from a discourse network perspective: The debate over air pollution regulation in Europe. *Environmental Sciences Europe*, 34, Article 62.
- Nagel, M., Gall, A., & Tosun, J. (2025). The “hottest ever January” in Germany: Farmers’ protests and the discourse on agriculture and food production. *Politics and Governance*, 13, Article 9830. <https://doi.org/10.17645/pag.9830>
- Ocelík, P., Diviák, T., Lehotský, L., Svodobová, K., & Hendrychová, M. (2022). Facilitating the Czech coal phase-out: What drives inter-organizational collaboration? *Society & Natural Resources*, 35(7), 705–724.
- Ostrom, E. (2014). A polycentric approach for coping with climate change. *Annals of Economics and Finance*, 15(1), 97–134.
- Palonen, K. (2000). Four times of politics: Policy, polity, politicking, and politicization. *Alternatives*, 28, 171–186.

- Roger, C. B., Hale, T. N., & Andonova, L. B. (2019). The comparative politics of transnational climate governance. In L. B. Andonova, T. N. Hale & C. B. Roger (Eds.), *The comparative politics of transnational climate governance* (pp. 1–25). Routledge.
- Rootes, C. (1999). Political opportunity structures: Promise, problems and prospects. *La Lettre de la Maison Française d'Oxford*, 10, 71–93.
- Saunders, C. (2013). *Environmental networks and social movement theory*. Bloomsbury Academic.
- Saunders, C., Nadel, S., & Walley, B. (2025). It's not just structural: Political context and London's environmental networks twenty-one years later. *Politics and Governance*, 13, Article 10137. <https://doi.org/10.17645/pag.10137>
- Schneider, V. (1988). *Politiknetzwerke der Chemikalienkontrolle. Eine Analyse einer transnationalen Politikentwicklung*. De Gruyter.
- Schneider, V. (2024). *Advanced introduction to political networks*. Edward Elgar Publishing.
- Schneider, V. (2025). Germany's energy and climate policy as an ecology of games. *Politics and Governance*, 13, Article 10023. <https://doi.org/10.17645/pag.10023>
- Snijders, T. A. B., van de Bunt, G., & Steglich, C. E. G. (2010). Introduction to stochastic actor-based models for network dynamics. *Social Networks*, 32(1), 44–60.
- Tarrow, S. G. (2011). *Power in movement: Social movements and contentious politics*. Cambridge University Press.
- Tilly, C., & Tarrow, S. G. (2015). *Contentious politics*. Oxford University Press.
- Tindall, D., Stoddart, M. C. J., & Dunlap, R. E. (2022). *Handbook of anti-environmentalism*. Edward Elgar Publishing.
- Van Dyke, N., & McCammon, H. J. (2010). *Strategic alliances: Coalition building and social movements*. University of Minnesota Press.
- Veltri, G. A., & Atanasova, D. (2017). Climate change on Twitter: Content, media ecology and information sharing behaviour. *Public Understanding of Science*, 26(6), 721–737.
- Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications*. Cambridge University Press.
- Weible, C. M. (2023). *Theories of the policy process*. Taylor & Francis.
- Weible, C. M., & Sabatier, P. A. (2005). Comparing policy networks: Marine protected areas in California. *Policy Studies Journal*, 33(2), 181–201.
- Ylä-Anttila, T., Gronow, A., Stoddart, M. C. J., Broadbent, J., Schneider, V., & Tindall, D. B. (2018). Climate change policy networks: Why and how to compare them across countries. *Energy Research & Social Science*, 45, 258–265.

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The Hierarchy of Beliefs and Coordination: A “Chicken and Egg” Problem

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Abstract

This article revolves around the hierarchy of beliefs and coordination. The Advocacy Coalition Framework (ACF) emphasises political actors’ role and their beliefs in public policymaking. As soon as actors share beliefs, they coordinate actions to affect policy outputs and outcomes decisively. Thus, according to the ACF, beliefs are a key driver of coordination, and manifold studies have tested this relationship. However, does coordination also affect beliefs, i.e., contribute to adopting similar beliefs? The literature, which comprises political and policy network studies, may argue so, referring to social influence and contagion. In this article, we combine the ACF with social and political network analysis to disentangle causality between coordination and beliefs in both directions and investigate whether a mutual relationship exists between the two concepts. To do so, we utilise the same policy subsystem with the same set of actors over several points in time and analyse how beliefs and coordination coevolve over time. We draw on data from the Swiss climate policy subsystem, spanning almost two decades. Specifically, we build a network coevolution model to assess how the political network (ties reflecting coordination) and belief network (ties reflecting belief similarity) influence each other over time. Our results do not definitively answer the “chicken and egg” question: What comes first—beliefs or coordination? Instead, they demonstrate that coordination and belief change mutually reinforce each other.

Keywords

advocacy coalition framework; belief similarity; climate policy; coordination; social influence; social network analysis; Switzerland

1. Introduction

In this article, we tackle a typical “chicken and egg” question, i.e., an issue of reverse causality that has not been sufficiently addressed yet in the respective literature (exceptions: Gronow et al., 2021; Henry et al., 2021). The Advocacy Coalition Framework (ACF; Nohrstedt et al., 2023; Sabatier, 1988) emphasises the role of political actors—such as political parties, civil society organisations, interest groups, or research and higher education institutions—and their beliefs in public policymaking. As soon as these political actors share beliefs, they coordinate actions to affect policy outputs and outcomes decisively. Thus, according to the ACF, beliefs are a key driver of coordination—i.e., alignment of actions in a policy process to advocate for one’s own interests and/or policy implementation—and manifold studies have tested this relationship (e.g., Koebele, 2020; Pierce et al., 2022; Satoh et al., 2023). However, does coordination also affect belief similarity, i.e., contribute to adopting similar beliefs?

To answer this question, we combine policy process theories—and more concretely, the ACF—with social and political network analysis. We conceive of different moments in a political process as a network of actors who coordinate and who think alike. We then investigate when and how the two (belief similarity and coordination) mutually impact each other.

The ACF develops several seminal hypotheses on how political actors—such as parties, NGOs, or interest groups—organise in policy processes and within advocacy coalitions. Advocacy coalitions are groups of like-minded actors that coordinate their actions. Therefore, the three-tiered belief system of actors and coalitions plays an important role and often is defined as a driver for coordination (Henry, 2011). Within, but also outside of, the ACF, the so-called belief homophily hypothesis was tested, which clearly investigates whether similar or the same beliefs impact the creation of coordination ties (e.g., Calanni et al., 2015; Ingold & Fischer, 2014). However, these extant studies’ results are mixed depending on various political systems (e.g., Gronow et al., 2019), different levels of conflict prevalent in a subsystem (e.g., Kammerer et al., 2021), and nascent subsystems (e.g., Ingold et al., 2017; Lemke et al., 2023; Wiedemann & Ingold, 2024). Thus, depending on the context, beliefs seem to be more or less decisive in driving coordination in a policy process. These diverging results incentivised us to investigate this relationship further between beliefs and coordination.

For example, the literature on social influence and contagion would argue for reverse causality or at least adopt a coevolution perspective. As soon as actors coordinate and engage in what can be classified as a strong and mutual tie, a social influence process is nudged, potentially leading to alignment of their policy beliefs. Different existing political and policy network studies have confirmed this contagion or social influence process or have emphasized the coevolution between homophily and influence (Cranmer et al., 2020; Gronow et al., 2021; Teodoro & Prell, 2023).

Knowing more about the relationship between beliefs and coordination seems important for several reasons. First, it helps us understand when and how politically involved actors build subgroups and coalitions to impact policy outputs and eventually induce policy change. Second, it potentially combines the macro-, meso-, and micro-levels of policymaking. For example, coordination is very much shaped by macro-level political institutions and venues (Ingold et al., 2025) and can be steered by formal and informal rules (McGinnis, 2011). Actors can meet and coordinate only if they know and can interact with each other, i.e.,

coordination needs informal and formal institutions and venues to create opportunity structures for actors to interact. This is very different when thinking about belief systems: These ideologies can differ from one political actor to another and are linked to the actor's socialisation, experiences, and problem perceptions. Beliefs shape policy processes from the inside out, as they are inherent to each actor and can be very individualised. Thus, our results reveal whether macro-and meso-elements of the political process (institutions and networks; Lubell et al., 2012) impact the micro-level of actors' beliefs, or vice versa. Furthermore, our findings also speak to how much room authorities have to manoeuvre in shaping policy processes: They might have easier access to the macro- and meso-levels to impact institutions and procedures, rather than induce changes at the micro-levels of actors' ideologies. However, this depends heavily on both the investigated jurisdiction's institutional regime and subsystem-specific characteristics (Ingold et al., 2025).

Second, the question arises of how much social influence a policy process needs. If we can confirm the hypothesis that coordination leads to alignment of beliefs and belief homophily, this means, very simply put, that actors involved in the same policy subsystems start to think more and more alike. In this scenario, it can be the case that political actors from different advocacy coalitions start to have similar understandings of certain things over the years, e.g., the policy problem or decision-making process (Frick et al., 2023; Gronow et al., 2021). From this perspective, beliefs and coordination start to become two sides of the same coin. However, the related literature so far has provided little evidence that subsystems converge over time towards a unitary subsystem with one single coalition. This may not be the aim of policymaking, i.e., to function as a purely technocratic or engineering procedure in which solutions to problems are designed and implemented. Instead, it may be a bargaining process and a negotiation among actors with different beliefs, needs, and interests.

In this article, we juxtapose insights from social network theory—and, more concretely, contagion and social influence—with insights from policy process theories by examining the same policy subsystem over time. We use survey and text data to code actors' beliefs and investigate coordination in Swiss climate policy over almost two decades. We ultimately create two distinct networks: one comprising shared beliefs (through belief similarity ties) and one in which the same set of actors shares coordination ties. Via a network coevolution model, we assess how the coordination network (ties reflecting coordination) and belief network (ties reflecting belief similarity) influence each other over time.

The article is structured as follows: After a theoretical introduction to the ACF and network theory perspective, we present the hypotheses. In the methods section, we introduce the case of Swiss climate policymaking over two decades and outline our data-gathering and analytical methods. We then present our results before discussing them, considering the hypotheses. Our results indicate that beliefs and coordination mutually influence each other over time, as we found evidence for both hypotheses: Political actors select their coordination partners based on shared beliefs, but also align their beliefs with those of actors with whom they frequently coordinate. We also found that political actors coordinate regardless of whether they share policy core beliefs (PCBs) or secondary aspects (SAs). This increased coordination makes actors more similar in terms of their PCBs. Thus, negotiating SAs over time might bring actors together, leading to alignment in their PCBs. We end the article with a general conclusion, limitations, and outreach.

2. Theory and Hypotheses

The ACF is one of the most prominent policy process theories, and as its name suggests, it is interested in the establishment and evolution of advocacy coalitions and their potential impact on policy change (Nohrstedt et al., 2023). According to the ACF, advocacy coalitions comprise beliefs and coordination, which are the two elements of interest here. Political actors in a subsystem engage in joint action, i.e., coordination based on similar beliefs (Henry, 2011; Ingold, 2011). This assumption is tested very often with what ACF scholars call the “belief homophily hypothesis” (Henry et al., 2021; Satoh et al., 2023), which asserts that two actors establish a coordination tie between each other as soon as they share beliefs and policy preferences within the subsystem of study (Ingold & Fischer, 2014). The belief homophily hypothesis has been confirmed in many subsystems and applications, but ACF scholars have concluded that the degree of conflict seems to matter (Fischer, 2014; Kammerer et al., 2021). In high-conflict subsystems, beliefs seem to be an important driver of coordination (see Ingold & Fischer, 2014), whereas in more collaborative or even community contexts, hierarchy and power are more relevant (Calanni et al., 2015; Pierce et al., 2017). In such collaborative or local subsystems, it seems that a general understanding of the problem and its potential solutions already exists, and that power devices are more decisive for tie establishment. However, in our context, we focus on the traditional ACF view on beliefs and coordination to posit the following hypothesis:

H1: If two political actors share similar beliefs, they are more likely to establish a tie in the coordination network over time.

The ACF also makes an important distinction between different beliefs’ relevance to coordination and, ultimately, coalition formation and development. To elaborate more on this, we briefly introduce the three-tiered ACF belief system. The first tier, deep core beliefs, comprises the fundamental ideologies of a political actor that are valid across various political topics and policy subsystems, reflecting “general convictions of how a society should be organised, like, for example, the level of state intervention, the handling of the challenges as imposed by globalisation or matters of social equity” (Kammerer, 2018, p. 169). The second tier, PCB, involves translation of deep core beliefs into specific policy subsystems, such as regional planning or national energy policy. PCBs include beliefs on how a concrete problem or issue on the subsystem’s agenda should be approached. The final tier comprises SAs and embraces the more instrumental aspects of a policy subsystem, such as policy measures, monitoring, or finances.

According to the ACF, the likelihood of changing beliefs increases from the deep core to the policy core and, ultimately, to the SAs, i.e., deep and PCBs are more resistant to change and serve as the glue between members of an advocacy coalition—at least in theory (Gabehart et al., 2022). However, the ACF is not very clear on the causal relationship between belief levels and coordination. Political negotiations—and the coordination they require—are driven by different factors, which also depend on the venues in which actors are involved (Fischer, 2014; Ingold et al., 2025). In some situations, SAs may well drive coordination between two actors, particularly when they are part of opposing coalitions. Nevertheless, in the context of the establishment and maintenance of advocacy coalitions, we expect PCBs to make a stronger impact on tie formation in the coordination network than SAs. Therefore, we posit the following hypothesis:

H2: If two political actors share PCBs, in contrast to SAs, they are more likely to establish a tie in the coordination network over time.

The literature on policy and political networks would not entirely disagree with the belief homophily hypothesis, but in contrast to many ACF studies that have examined a subsystem at one point in time, political network analysis often studies a network over time, thereby observing the phenomenon of social influence and contagion (Cranmer et al., 2020; León-Medina, 2023). According to this phenomenon, once two actors in a network share a tie, they start to influence, or “infect,” each other on other aspects as well, such as behaviour, ideologies, or preferences (León-Medina, 2023; Tam Cho, 2003; VanderWeele, 2011). Gronow et al. (2021) applied this to the ACF and, to a certain extent, could confirm that sharing ties leads subsystem actors to change their beliefs, which is also an important component of policy-oriented learning. Actors adapt their beliefs over time in a subsystem. In this process, it might be possible that they are affected mainly by those to whom they are connected. Our interest here is not primarily in belief change or policy-oriented learning, but rather in the reverse causality of what is outlined in H1. Thus, we posit:

H3: If two political actors share a coordination tie, they are more likely to share beliefs over time.

3. Research Design: Case, Data, and Model Specification

To test our hypotheses, we measured coordination between political actors and shared beliefs at three consecutive time steps (see Figure 1). We assessed the latter through similarity in the portfolio of supported beliefs (belief similarity). Thus, we needed data on the same set of actors in the same subsystem over a long period of time. As presented in Figure 1 and explained in detail in Section 3.2, such data are available for Switzerland’s climate policy subsystem around important phases in the policy process related to the CO₂ Act and later the Climate Protection Act, which together represent the heart of Switzerland’s climate policy.

3.1. A Brief History of Switzerland’s Climate Policy

Switzerland’s climate policy history dates back to the 1980s, with air and energy policies shaped by concerns over forest dieback, the oil crises of the 1970s, and the 1986 Chernobyl disaster. These events heightened awareness of the need to enhance energy efficiency, reduce harmful emissions, and decrease reliance on fossil fuels. The 1992 UN Rio Summit, alongside then-Minister for Home Affairs Flavio Cotti’s commitment to make Switzerland a global leader in combating climate change, propelled these efforts further. Cotti’s push for one of the world’s first domestic CO₂ taxes faced significant opposition, particularly from economic stakeholders, leading the Swiss government to adopt a broader, cross-sectoral approach, instead of relying on a single policy tool (Ingold, 2011; Kammerer et al., 2020; Lehmann & Rieder, 2002). Thus, in the mid-1990s, a first draft of the CO₂ Act was discussed, leading to implementation of the first version of the CO₂ Act, adopted in 2000 (Ingold, 2008, 2011).

The first CO₂ Act aimed to meet the Kyoto Protocol’s requirements for a greenhouse gas reduction target of 8% for combustibles and 10% for motor fuels, compared with 1990 levels (Federal Office for the Environment, 2010). The plan relied on a mix of voluntary measures and a conditional CO₂ levy on motor fuels and combustibles. However, by 2002, it became clear that voluntary measures alone would not suffice, prompting the federal government to introduce the levy. Despite this, opposition from the economic and energy sectors resulted in a partial revision of the CO₂ Act, which included a levy only on combustibles and maintained weaker, voluntary measures for the traffic sector (Niederberger, 2005). Specifically, some transport lobbyists and petrol importers suggested a new instrument, the Climate Cent (Stiftung

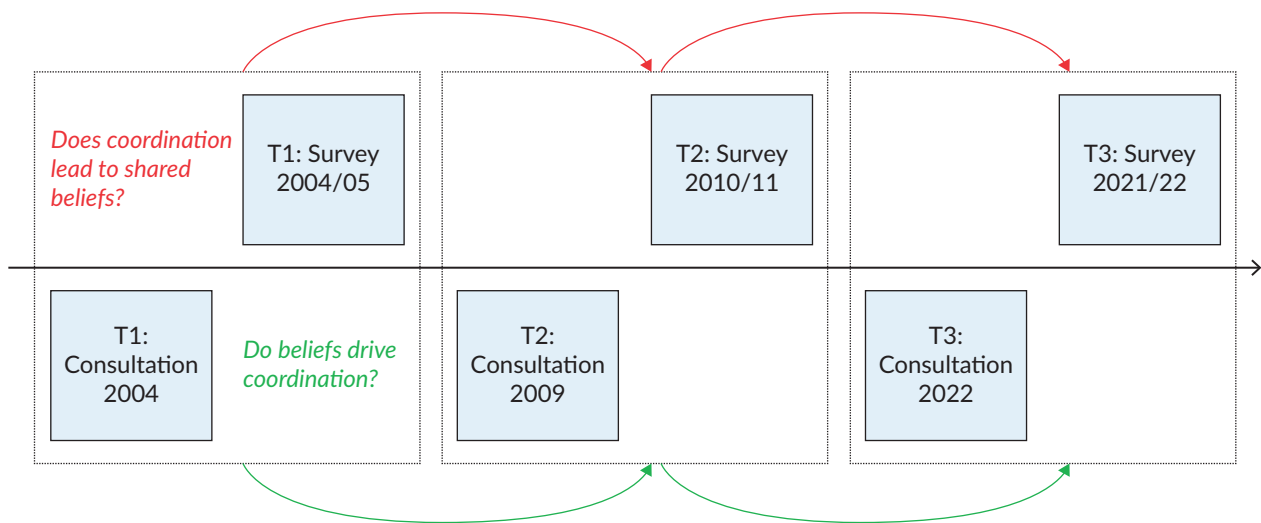


Figure 1. Overview of datasets from a chronological perspective.

Klimarappen, 2013). The partial revision was accompanied by a public consultation in 2004 (T1: Consultation data, 2004), in which stakeholders were invited to state their opinions on various instruments. The revised act entered into force in 2005 (T1: Survey conducted in winter 2004–2005; see Ingold 2008, 2011; Ingold & Fischer, 2014).

Dissatisfaction with these outcomes led to further revisions spurred by the Climate Alliance, which comprised NGOs, left-wing, and green parties. In 2008, the alliance initiated the popular initiative “For a Healthy Climate,” which called for a 30% reduction in emissions by 2020 and enshrinement of this target in the Swiss Constitution. In 2009, the government’s response was a new draft of the CO₂ Act, which proposed a levy on motor fuels and other measures, such as compensation obligations for oil imports and standards for passenger cars. Stakeholders assessed the draft in a public consultation in fall 2009 (T2: Consultation data, 2009). The revised CO₂ Act was passed in 2011 and entered into force in 2013. However, the new act contained what for that time was a moderately ambitious 20% reduction target by 2020 compared with 1990 levels without including a CO₂ levy on motor fuels, which powerful economic interests blocked yet again (T2: Survey conducted during 2010–2011; Ingold & Fischer, 2014).

The most recent development in Swiss climate policy came with the approval of the Climate Protection Act, a comprehensive framework outlining Switzerland’s climate objectives, adopted in 2023. The act emerged after several failed attempts to revise the CO₂ Act in line with Switzerland’s commitments under the Paris Agreement, which included a 50% reduction target by 2030. The first draft of a revised CO₂ Act was in public consultation in 2016 but failed in 2017 in parliament after both the left, green parties, and right-wing parties rejected it, as the proposal was viewed as either too lenient or too stringent. However, growing public pressure, particularly from the Fridays for Future movement, led to the introduction of a more ambitious proposal in 2019. This proposal, which included measures such as a flight ticket levy and a new climate fund, passed in parliament in 2020, driven in part by what is known as the “Greta effect” (The Federal Assembly—The Swiss Parliament, 2019), which fostered policy learning and a shift in coalition dynamics within the climate policy arena. Despite this, Swiss citizens rejected a referendum led by the Swiss People’s Party and various industry groups in a popular vote in June 2021 (T3: Survey conducted in 2021–2022; see Braissant, 2023). Following this setback, the Swiss government adopted a new approach based on funding incentives instead of new levies

or other regulatory measures. After a promising public consultation, this new approach led to the successful passage of the Climate Protection Act in June 2023 (T3: Consultation data, 2022).

3.2. Measuring Coordination and Belief Similarity

To measure *coordination*, we drew on existing surveys of Switzerland's climate policy elite conducted in 2004–2005 (T1), 2010–2011 (T2), and 2022 (T3; see Braissant, 2023; Ingold, 2008, 2011; Ingold & Fischer, 2014, for a detailed description of the data collection procedure for each survey). Most importantly for this study, the elite surveys comprised questions about the respondents' collaboration networks. Very specifically, the respondents were asked about their direct and close collaboration partners in the Swiss climate policy subsystem at a given time, as they relate to a specific process, disregarding shared beliefs. We identified the key political actors from government, political parties, business, civil society, and science, and asked them questions about their collaboration partners and reputational political actors. For all four surveys, actors were identified following a standard procedure for elite and policy network studies (Knoke et al., 1996)—a combination of the decisional, positional, and reputational power approaches.

We used this question about collaboration as a proxy to generate the three *coordination networks*, as the survey questions aimed to unveil alignment of actions within a subsystem independent of belief similarity. This aligns with a common distinction between coordination, i.e., alignment of actions vs. collaboration (i.e., alignment of objectives; Castañer & Oliveira, 2020). In doing so, we also followed good practices used in many other political network analyses and ACF applications (Ingold, 2011; Koebele, 2019). We constructed three binary, undirected (symmetric) matrices with the value (1) when two actors in the survey indicated that they collaborated, i.e., coordinated their actions, and with the value (0) if they did not indicate collaboration. Notably, we symmetrised ties, i.e., reciprocated collaboration, as soon as a political actor mentioned a collaborative relationship.

To measure *belief similarity*, we compiled a novel dataset based on information retrieved from actors' positions outlined in public consultation procedures linked to specific climate policy processes (see the case description in Section 3.1). In Switzerland, an institutionalised consultation procedure (*Vernehmlassungsverfahren*) includes various governmental (encompassing political parties in parliament and government) and nongovernmental actors in the decision-making process at an early stage (Linder, 2010). In such consultation procedures, political actors are aware that high-level officials (and potentially other stakeholders) will read their policy preferences and positions. As a result, they may frame these positions more strategically—sometimes more assertively or with stronger language—to signal and advocate for their interests. In contrast, when surveyed for research purposes, they may provide responses that align more closely with what is expected socially or that reflect a more moderated stance (Ingold et al., 2020).

We coded text-as-data from these consultations and constructed actors' beliefs at three distinct time points: 2004 (T1), fall 2009 (T2), and 2022 (T3). The raw dataset is displayed in three two-mode matrices, with actors in rows and different beliefs in columns. The datasets distinguish between PCBs and SAs but do not include deep core beliefs. Most often, actors outline their preferences for SAs and sometimes emphasise these choices with justifications that can be classified as PCBs (Markard et al., 2016). However, it is very difficult to retrieve deep core beliefs from these texts.

The data were collected based on a pre-defined coding framework that measures an actor's agreement with a policy core belief or secondary aspect on an ordinal scale from 1 to 4, in which 1 indicates *strong agreement* and 4 indicates *strong disagreement* (Rufer, 2024). We collected data on the same set of seven PCBs (see Table 1; PCBs column) for all time steps. In contrast, we allowed the SAs to vary over time and cover key developments in the Swiss climate policy process most accurately (see Table 1; SAs column). Based on these three two-mode matrices, we calculated belief similarity for all actors and for each period using Gower's distance (Similarity = 1–Gower's distance), which is well-suited for ordinal datasets (Gower, 1971; Podani, 1999). This resulted in three one-mode similarity matrices per phase.

We then dichotomised the three similarity matrices to values of 1 (reflecting *high agreement* similarity) and 0 (when no high belief agreement was reached between two actors). We dichotomised the matrices using a period-specific threshold set at the 75th percentile (upper quartile) of each period's similarity distribution. This approach ensures that only the most similar pairs (relative to the distribution in each period) are retained for further analysis. By adapting the threshold dynamically per period, we avoided imposing an arbitrary absolute cutoff and preserved comparability over time. Thus, the *belief network* dataset comprised three binary one-mode matrices.

This dichotomisation was necessary because the selected coevolution model does not allow for weighted networks as dependent variables. This strategy has limitations, as dichotomisation induces a loss of detailed

Table 1. Overview of actors and beliefs per time step for model specification.

Time step	Period	Belief network	Coordination network	SAs covered during the respective period	PCBs
T1	2004–2005	Consultation 2004 Actors: 24 PCBs: 7 SAs: 5	Survey: 2004–2005 Actors: 29	CO2 levy on combustibles CO2 levy fuels Partial earmarking of the CO2 levy EU ETS Climate Cent	Ecological efficiency Redistributional equity Market competitiveness Seriousness of the problem
T2	2009–2011	Consultation 2009 (fall) Actors: 35 PCBs: 7 SAs: 4	Survey: 2010–2011 Actors: 47	CO2 levy on combustibles CO2 levy fuels Climate Cent Voluntary measures	Switzerland's international role State intervention Target group flexibility
T3	2022	Consultation 2022 Actors: 34 PCBs: 7 SAs: 8	Survey: 2022 Actors: 36	Reduction target (50%) EU ETS CO2 levy on combustibles Increase CO2 levy Exemption from the CO2 levy Compensation obligation for fuel imports Exemption from the ban on fossil-based heating systems Education and training	

information regarding the alignment of individual beliefs over time. To overcome this issue, we ran robustness checks based on the two-mode matrices (see Appendix B, Table 2 in the Supplementary File).

The political actors covered by the three survey datasets set the boundaries for the selection of actors in this study. Thus, in the first step, we compiled a list of all actors surveyed in all free time steps and then removed these governmental actors (i.e., administrative agencies, bureaucrats) that were not involved in public consultations (they are the convenors of it, but do not express their beliefs and policy positions). We ran a sensitivity analysis, i.e., a simple stochastic actor-oriented model (SAOM) based on the same time steps, but without cross-network effects, including governmental actors, to ensure that exclusion of governmental actors did not bias our results. The models yield comparable results for our structural terms and covariates (see Online Appendix B, Table 1 in the Supplementary File). We then coded three consecutive public consultations for each political actor in which data were available, i.e., those who participated in the respective consultation.

3.3. Model and Model Specification

SAOMs are designed to assess tie formation dynamics in panel network data, i.e., each network is measured at discrete time steps. We applied an extension of SAOMs to investigate the coevolution of coordination and shared beliefs, i.e., belief similarity. Thus, to test our hypotheses, we combined the survey and consultation datasets along three time steps. As SAOMs model change in the network and behavioural data, via mini steps, it is crucial that both are in immediate, timely relation (Ripley et al., 2025). In our case, in each time step, the survey and consultation data belonged to the same policy process related to the CO₂ Act (see case description in Section 3.1 and Figure 1), and the survey data collection and consultation in all three periods were also conducted around the same time.

To test our hypotheses, we employed a coevolution model to capture the joint dynamics between two one-mode networks—collaboration and belief similarity. This setup adapted the multiplex SAOM framework introduced by Snijders et al. (2013), extending it from the more frequently used one-mode/two-mode configuration or behaviour data in the form of individual actor attributes (e.g., Brouwer & de Matos Fernandes, 2023; Teodoro & Prell, 2023) to two interdependent one-mode networks observed in the same actor set (e.g., Wang & Dong, 2025). This setup seemed to be the best model strategy, given our specific data structure and hypotheses, which focused on belief similarity, rather than a specific directed political orientation or preference, e.g., pro-climate or contra-climate. We ran a robustness check using the one-mode/two-mode approach, but only using the PCBs and SAs present across the three time steps. The models yield comparable results (see Appendix B, Table 2 in the Supplementary File). Thus, this setup offered a conceptually consistent and technically supported extension of existing multiplex models (Ripley et al., 2025). Moreover, belief similarity functions analogously to an actor attribute, so our specification parallels classic network behaviour coevolution logic (see Steglich et al., 2010) while modelling the mutual influence between collaboration and belief similarity.

To run the selected coevolution model, all network matrices must have the same dimensions across all time points, i.e., the same number of actors in each matrix. However, in practice, some actors were present only during certain survey periods and not in others. To address this, we added what are called structural zeroes, i.e., placeholders indicating that an actor or belief was not present at a specific time. These are not actual zeroes representing the absence of a tie, but rather fixed positions in the matrix that reflect the unavailability of an actor or belief during a given time step.

We began by compiling the full list of all actors ($n = 79$) who appeared across the three survey periods. For each period, if a specific actor was not surveyed, we added them to the matrix with structural zeroes, ensuring consistency in the representation of actors. By doing this, we ensured that all matrices have consistent dimensions—making it possible for the model to trace how ties form or disappear over time, even if some actors or beliefs were temporarily absent.

3.3.1. Short Introduction to SAOMs

SAOMs assume that unobserved changes in the network (at the tie level) arise between measurement points. These changes in ties occur because actors in a network strive to optimise their social environment (actor-based). To model network evolution, SAOMs estimate an evolution function (also an objective function):

$$f_i(\beta, x) = \sum_k \beta_k s_{ki}(x) \quad (\text{Eq. 1})$$

The objective function models the probability of a tie change in the network, given that an actor can make a change, i.e., it reflects the “rules for network behaviour” (Snijders et al., 2010, p. 47). These rules of behaviour are determined by the state of the network, i.e., the ties and nodes present at a specific point in time, as well as covariates (i.e., actor characteristics). The function $f_i(\beta, x)$ reflects the value of the objective function for actor i depending on the state of the network x . The right-hand side of the equation comprises, as in generalised linear regression models, a linear combination of effects, i.e., statistical parameters that reflect network (sub)-structures, such as the tendency to reciprocate ties or triangulate or form ties with similar alters. Specifically, x represents the observed network structure, and β_k is the vector of parameters estimating the magnitude and direction of various structural effects, cross-network effects, or covariates on actor i ’s ties (in this case, coordination ties and belief similarity). $s_{ki}(x)$ reflects the value of the k -th network statistics (e.g., density, transitivity, homophily, etc.) for actor i calculated from the current network.

For example, if an actor prefers to form ties with “friends of friends,” there will be a positive and significant transitivity parameter in the objective function. The parameter estimates are gathered by simulation. Specifically, using a current estimate, the model simulates a chain of tie changes, resulting in a new graph per simulation round. The new graphs are then compared with the observed network data. Next, the parameter estimate is tuned based on any discrepancy until all parameter estimates converge. Note that SAOMs condition the estimation on the first observation point. Thus, they model the process of change and not the network structure at a particular point in time.

For this analysis, we used a variation of SAOMs to model the coevolution of the one-mode coordination and the two-mode networks that measure shared beliefs. Thus, we modelled multiplex dynamics (Snijders et al., 2013) based on the state of each network, the respective actor attributes, and multiplexity effects.

Our model’s main goal was to disentangle how shared beliefs cause coordination over time and to test for reverse causality. Furthermore, we also distinguished between different types of beliefs, i.e., we tested whether, as predicted by the ACF, PCBs drive the formation of ties in the coordination network more strongly than SAs, such as preferences on policy instruments and technicalities.

3.4. Model Specification

In this section, we present the model's specifications. We start by introducing dyadic and nodal within-network effects (uniplex network model specification), describe the coevolution effects we included (multiplex network model specification), and end by presenting our control variables. We estimated our models using the RSiena package available for the programming language R (Ripley et al., 2025; Snijders, 2017). See Table 2 for the full model specification.

3.3.2.1. Rate Constants

The most basic terms in the models are *rate constants* (coordination rate, belief similarity rate; see Table 2). These terms indicate the rate of change from one period to the next. As described in Section 3.2, we included three distinct coordination and belief similarity networks (see Table 1). Thus, our models (see Tables 3 and 4) include two rate constants for each network type, in which the first period is used as a baseline. Positive and significant rate parameters mean that a change is happening from one period to the next.

3.3.2.2. Dependency Terms (Uniplex)



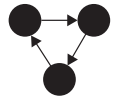


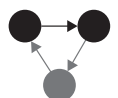
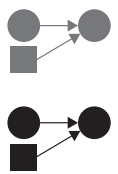
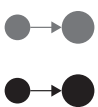
Our models contained several basic uniplex network dependency terms, which control for structural effects of existing patterns or belief similarity (see Table 2). The most basic is the *density* term of an actor i . This term must be included in all models. It reflects an actor's tendency to have ties in the coordination networks at all or demonstrate high belief agreement, i.e., have ties in belief similarity networks. As such, it captures tie formations not explained by other configurations, i.e., random or unexplained ties, and can be interpreted like an intercept in a given network model. As most social networks are sparse (i.e., they have a density below 0.5), network models often generate a negative parameter estimate for the density/outdegree effect (Snijders et al., 2010).

Another common feature of most social networks is transitivity, network closure or clustering, i.e., the tendency of "friends of friends to become friends" or build new ties in an actor's immediate neighbourhood (Snijders et al., 2010, p. 47). In our case, the respective terms measure political actors' tendency to coordinate their actions in the climate policy subsystem with actors who are already close to them via already-established partnerships in the coordination network. Specifically, we included one term to cover clustering in the coordination network. *Transitive ties, coordination*, models triadic closure in networks, i.e., actors' tendency to form transitive ties in coordination networks: If actor A coordinates with B, and B coordinates with C, then A is more likely to coordinate with C. As transitivity or network closure is common for social networks, we expect large, positive parameter estimates.

We opted for a simple clustering term, and only in the coordination network, to avoid model overfitting and multicollinearity. Particularly in coevolution models, cross-network effects tend to be correlated with clustering network statistics. Thus, including complex structural terms alongside cross-network dependencies can make it difficult to disentangle their individual contributions and inflate standard errors (Ripley et al., 2025).

For a detailed description of network dependency terms, please consult the SIENA Manual (Ripley et al., 2025).

Table 2. Model specification.

Name	Description	RSiena term	Research Design	Time steps	Illustration
Coordination rate	Indicates the rate (speed) of change in the coordination network from one period to the next. Or put differently, the rate at which actors can change their coordination behaviour	Rate	Constant	T1-T2 T2-T3	
Belief similarity rate	Indicates the rate at which actors update their belief similarity from one period to the next	Rate	Constant	T1-T2 T2-T3	
Density, coordination	Tendency to form coordination ties	density	Endogenous effect coordination network	Average across periods	
Density, belief similarity	Tendency of belief similarity	density	Endogenous effect coordination network	Average across periods	
Transitive ties, coordination	Tendency to form transitive coordination ties, i.e., a simple measure for network clustering	transTies	Endogenous effect coordination network	Average across periods	
Belief similarity direct entrainment (cross-product)	The tendency to coordinate is more likely if actors exhibit belief similarity.	cprod	Cross-network effect, H1, H2	Average across periods	
Coordination direct entrainment (cross-product)	Tendency of actors that coordinate to share beliefs is more likely (PCBs and/or SAs).	cprod	Cross-network effect, H3	Average across periods	
Coordination, indirect (transitive ties)	The tendency of actors to share beliefs (PCBs or SAs) when they coordinate with alters that share beliefs themselves.	to	Cross-network effect, H3	Average across periods	
Same actor type	Tendency to coordinate or reveal higher belief similarity with actors of the same type. Included for both networks.	X	Dyadic control	Constant	
Perceived influence (reputational power measure)	Tendency to coordinate or reveal higher belief similarity with influential actors.	X	Dyadic control	T1, T2, T3	

Notes: See Ripley et al. (2025) for detailed descriptions and formulas of the RSiena effects, pp. 129ff; grey nodes represent the belief similarity network; black nodes represent the coordination network; arrows indicate change over time.

3.3.2.3. Coevolution Terms (Multiplex)

To test H1 and H3 on the effect of belief similarity on coordination (H1) and its reverse causality (H3), we included three different terms that model between-network interdependency, i.e., cross-network effects. The first model term, *belief similarity direct* (cross-product), tested H1. The second term, *coordination direct* (cross-product), and the third term, *coordination indirect* (transitive ties), tested H3 (see Table 2). We chose these three terms because we assumed that belief similarity directly affects coordination (social selection), while belief convergence occurs over time directly and indirectly via embeddedness in sustained coordination activities (social influence). Of course, there also might be indirect effects between belief similarity and coordination. However, to avoid overspecification of the model and because these effects are correlated with other structural effects, we only included higher-order effects (transitive ties) for the belief similarity network. A significant, positive model, *belief similarity direct* parameter, indicates a positive correlation between belief similarity and would support H1. Respectively, positive and significant parameter estimates related to direct and indirect coordination would support H3.

To test H2, we ran the same model setup, but in two variations. The first tested only PCBs and the second only SAs (see Table 1). Thus, we ran different models: one using a one-mode matrix that reflects PCBs' belief similarity and the other using only SAs. For H2 to be confirmed, we should see the formative effects of beliefs on coordination only for PCBs, but not for SAs.

3.3.2.4. Covariates

We included two dyadic covariates as control variables in our model. First, we tested whether the same actor types (business, civil society, energy, science, and political party) tend to coordinate more frequently or share more likely beliefs. This variable is operationalised as a dyadic variable—i.e., a dyadic one-mode matrix—indicating whether two actors are from the same actor type (1) or not (0).

Second, we also controlled for the effect of *perceived influence* on coordination and belief similarity. In particular, extant studies on subsystems with lower levels of conflict have found evidence that actors coordinate with those whom they perceive as influential, as this increases their likelihood of influencing the policymaking process (Ingold & Leifeld, 2014; Kammerer et al., 2021). To measure perceived influence, we used a different question from the surveys introduced above. Specifically, the surveys included a question that asked respondents to identify whom they viewed as influential. To answer this question, they were presented with the same list of actors for identifying coordination partners. The data are displayed as one-mode matrices.

For this analysis, we used data from the surveys in T1 (2000), T2 (2002–2005), and T3 (2010–2012) to model past perceived influence's effect on coordination behaviour during the next period.

4. Results

In this section, we present the results from our analysis. We start with a short description of our networks and then present three different model setups in Tables 4 and 5. We build and present our models step-by-step. All models converged well, with an overall maximum convergence ratio below the 0.25 threshold (Ripley et al.,

2025), revealing robust results across the different models, which are well-specified (see goodness of fit [GOF] plots in Appendix C in the Supplementary File).

Table 3. Descriptive statistics.

Network	Wave	Number of ties	Density	Jaccard similarity
Coordination	T1,	121	0.298	
Coordination	T2, Jaccard (T1→T2)	115	0.098	0.102
Coordination	T3, Jaccard (T2→T3)	68	0.108	0.364
Belief similarity (binarised)	T1	76	0.262	
Belief similarity (binarised)	T2, Jaccard (T1→T2)	182	0.250	0.274
Belief similarity (binarised)	T3, Jaccard (T2→T3)	294	0.264	0.372

Table 3 summarises descriptive statistics for the three coordination and belief similarity networks. The coordination network is relatively sparse, with densities ranging from 0.098 (T2) to 0.298 (T1). The number of coordination ties decreased from T1 to T3. Jaccard similarity coefficients indicated uneven stability across periods, with low stability between T1 and T2 (0.102) and moderate stability between T2 and T3 (0.364), suggesting substantial reconfiguration of coordination between T1 and T2. The belief similarity network exhibits consistently low densities (0.250–0.264), with a gradual increase in tie counts from T1 (76 ties) to T3 (264 ties). Stability was moderate across all periods, with Jaccard coefficients ranging from 0.274 to 0.372, indicating that around one-third to two-fifths of similarity ties are retained between consecutive waves. This suggests that while belief alignment is stabler than coordination during some intervals, it also undergoes notable change over time. This implies that coordination ties are more volatile and prone to short-term restructuring, whereas belief similarity, though still changing, is stable over time. This relative stability in beliefs could mean that shifts in coordination are not always accompanied by equally rapid changes in underlying beliefs.

The results in Table 4 relate to H1 and H3, and, as presented, we set up the model step-by-step to carefully encounter model behaviour. The *basic model* contains only the *density* term for both networks, as well as rate constants. As expected for social networks, both *density* terms are negative, and in most model variations, also significant, implying that the networks are rather sparse. The four rate constants are all positive and significant, indicating a tendency to coordinate more and align beliefs over time.

The *covariates model* indicates a positive, but not significant, association between *perceived influence* and coordination. For the belief similarity network, we identified a small negative parameter estimate. Thus, our results delivered no evidence that actors are more likely to coordinate with influential alters (see also García Mancilla & Bodin, 2020; Kammerer et al., 2021; Matti & Sandström, 2011, which arrived at similar conclusions). Furthermore, the *covariate model* indicated that political actors are not necessarily more likely to coordinate with actors of the *same actor type* (the effect is positive, but not significant), while actors of the same type are significantly more likely to share beliefs. This is an important additional finding that clearly underscores the importance of investigating actors' diverse belief systems in policymaking. Thus, actor type alone is not a good proxy for investigating belief homophily among actors involved in one policy subsystem: A comprehensive investigation of a whole portfolio of beliefs is needed, and ultimately, this is an empirical question.

Table 4. Results from RSiena estimations; standard errors in parentheses (H1 and H3).

	Basic model	Controls	Structural	Coevolution	Final
Coordination rate, T1–T2	11.099*** (3.210)	15.073° (8.484)	27.484 (34.539)	27.911 NA	17.241 (11.480)
Coordination rate, T2–T3	4.654*** (1.278)	5.224*** (1.422)	7.100* (2.817)	8.212** (3.122)	8.490* (3.389)
Density	–1.137*** (0.102)	2.139 (1.903)	–1.619 (3.071)	0.169 (1.782)	–0.787 (2.182)
Transitive ties			2.540 (2.078)	1.425* (0.714)	1.454* (0.649)
Same actor type		0.415* (0.199)	0.355° (0.189)	0.310 (0.215)	0.318 (0.214)
Perceived influence		–0.026° (0.015)	–0.026 (0.016)	–0.006 (0.018)	–0.001 (0.016)
Belief similarity, direct (H1)				1.165** (0.441)	1.131** (0.374)
Belief similarity rate, T1–T2	7.034*** (1.512)	7.101*** (1.532)	7.090*** (1.512)	8.191*** (2.070)	8.110*** (2.053)
Belief similarity rate, T2–T3	7.256*** (1.051)	7.399*** (1.057)	7.414*** (1.067)	8.643*** (1.547)	9.077*** (1.582)
Density	–0.525*** (0.066)	–0.651*** (0.095)	–0.650*** (0.098)	–0.840*** (0.107)	–0.837*** (0.106)
Same actor type		0.398* (0.161)	0.392* (0.167)	0.351* (0.171)	0.307* (0.156)
Perceived influence		0.459° (0.266)	0.257 (0.283)	0.404° (0.243)	0.277 (0.280)
Coordination, direct (H3)				–0.470 (0.656)	
Coordination, indirect (H3)				0.280** (0.089)	0.235*** (0.067)
Convergence ratio	0.0679	0.0426	0.0721	0.0849	0.0798
Iterations	10,606	10,962	10,955	11,581	11,019

Notes: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ° $p < 0.1$.

The *structural model* now adds the *transitive ties* effect. As outlined in Section 3.3.2.3 these terms often interact with cross-network effects, which is why we first investigated them in isolation and only then added coevolution terms in the *coevolution model*. We found that the combination of the selected terms captured network clustering within the coordination networks and across the coordination networks and belief similarity networks well (see also the GOF statistics in Appendix C in the Supplementary File). Furthermore, the results reveal positive and significant coevolution effects for both networks (*coordination indirect* and *belief similarity direct*), but a negative and non-significant parameter estimate for *coordination indirect*. These results support H1 and H3: First, as H1 predicted, belief similarity reinforces coordination over time. Second,

increased coordination reinforces this effect by inducing further belief alignment over time, though only indirectly via coordination partners that already share beliefs. This finding indicates cross-network clustering effects at the place.

The *final model* includes all effects except the *coordination direct*, which is negative and insignificant in the previous model, and causes model degeneracy issues. The final model setup reaffirms findings from the above models and indicates that the results are robust across the different model setups. Overall, the results in our *final model* confirm H1 and H3. Beliefs and coordination appear to reinforce each other mutually, as evidenced by both directions of causality.

The results presented in Table 5 reveal the same SAOMs, but this time using PCBs and SAs separately.

The *PCB models (basic, coevolution, final)* and *SA models (basic, coevolution, final)* overall indicated the same patterns as the final model from Table 4, i.e., the model including all types of beliefs. Thus, our results do not support H2. Coordination is not driven primarily by shared PCBs. Both the PCB and SA models provide evidence of belief similarity driving coordination and the reinforcing effect of coordination on belief similarity over time. Thus, one might conclude that coordination in the Swiss climate policy subsystem is not only driven by ideology, but is also pragmatic or issue-specific when actors temporarily align based on SAs. This interpretation is reinforced by the finding that political actors of the same type seem to share PCBs more often, but they do not necessarily share SAs, allowing for coordination around technical issues or implementation concerns.

Table 5. Results from RSiena estimations, standard errors in parentheses (H2).

	Basic model PCB	Coevolution PCB	Final PCB	Basic model SA	Coevolution SA	Final SA
Coordination rate, T1–T2	11.181*** (3.195)	16.123 (12.303)	16.812 (16.690)	11.087*** (3.164)	15.645 (11.479)	16.546 (10.889)
Coordination rate, T2–T3	4.662*** (1.263)	8.292** (3.013)	8.546* (3.766)	4.636*** (1.252)	6.833** (2.356)	7.028** (2.676)
Density	–1.135*** (0.101)	–0.783 (2.315)	–0.849 (2.403)	–1.140*** (0.106)	–0.353 (2.568)	–0.221 (2.306)
Transitive ties		1.451* (0.680)	1.480° (0.804)		1.306* (0.562)	1.334* (0.578)
Same actor type		0.315 (0.226)	0.320 (0.210)		0.365 (0.226)	0.360° (0.216)
Perceived influence		0.282 (0.304)	0.269 (0.303)		0.330 (0.338)	0.344 (0.300)
Belief similarity, direct (H1)		1.144** (0.423)	1.176* (0.463)		1.416*** (0.374)	1.380*** (0.365)
Belief similarity rate, T1–T2	7.034*** (1.542)	8.036*** (2.013)	8.108*** (2.227)	4.537*** (0.850)	4.947*** (1.041)	4.951*** (1.042)
Belief similarity rate, T2–T3	7.244*** (1.026)	8.680*** (1.582)	9.111*** (1.654)	6.283*** (0.923)	7.207*** (1.278)	7.247*** (1.335)

Table 5. (Cont.) Results from RSiena estimations, standard errors in parentheses (H2).

	Basic model PCB	Coevolution PCB	Final PCB	Basic model SA	Coevolution SA	Final SA
Density	−0.526*** (0.065)	−0.844*** (0.111)	−0.837*** (0.108)	−0.789*** (0.081)	−0.959*** (0.142)	−0.942*** (0.133)
Same actor type		0.351* (0.170)	0.309° (0.162)		0.045 (0.193)	0.015 (0.188)
Perceived influence		−0.007 (0.018)	−0.000 (0.016)		0.014 (0.020)	0.018 (0.018)
Coordination, direct (H3)		−0.443 (0.560)			−0.305 (0.556)	
Coordination, indirect (H3)		0.278** (0.090)	0.237*** (0.068)		0.284° (0.147)	0.237* (0.110)
Convergence ratio	0.0550	0.0784	0.1094	0.0498	0.1110	0.1023
Iterations	10,996	11,109	10,931	10,929	10,937	11,023

Notes: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ° $p < 0.1$.

5. Discussion and Conclusion

In this article, we tackled a typical question of reverse causality, i.e., a “chicken and egg” problem. As outlined in the theory part, ACF scholars would argue that beliefs are the “glue” that binds coalitions together (Weible et al., 2020). Thus, shared beliefs, primarily PCBs, are drivers for coordination in subsystems, particularly in conflictive contexts (Koebele et al., 2020; Weible & Ingold, 2018). Thus, in this article, we tested this traditional “belief homophily hypothesis”—namely, that shared beliefs increase the likelihood of coordination (H1). However, scholars of political or social networks would argue that social selection causality also can be reversed: In the process of social influence or contagion, actors adapt their behaviour towards those alters with whom they interact most often (Cranmer et al., 2020). Thus, based on this logic, political actors who frequently coordinate with one another are expected to align their beliefs over time (H3), such as by learning from each other.

Our results contribute to this debate by disentangling social selection from social influence effects in the Swiss climate policy subsystem. Rather than supporting one hypothesis over the other, the findings support both: Coordination and belief similarity reinforce each other over time.

First, we found strong support for H1, demonstrating that actors who share beliefs are more likely to coordinate in advancing their policy interests. Our models suggest that coordination is shaped more by belief similarity—particularly in SAs than by structural or organisational factors, such as actor type or existing network patterns. Actors cluster with others who hold similar beliefs, indicating that coordination tends to follow ideological, rather than purely strategic or institutional lines. This is an interesting result, mainly for the case investigated here. For the study of belief homophily in particular, and drivers of collaboration in general, we viewed Switzerland as an extreme and atypical case—a consensus democracy in which diverse actors, including opponents, accept compromise. This generally leads to actors overcoming ideological or institutional barriers, with a high tendency to collaborate over the whole subsystem. The confirmation of H1

and the belief in the homophily tendency in our case indicates a really strong indicator of the strength of ideologies in shaping collaboration. However, future research should nevertheless explore further when coordination is driven primarily by pragmatic or situational considerations and when it reflects deeper, long-term ideological alignment. A comparative analysis that factors in diverse degrees of democracy and different political regimes would be very suitable for such an endeavour.

Second, policy processes take time and often also involve the need to coordinate with actors from “the other side,” breaking away from what is known as “angel shift” and “devil shift” (Fullerton et al., 2025; Gronow et al., 2023; Leach & Sabatier, 2005; Vogeler & Bandelow, 2018). Thus, proponents of the social influence causality assumption would argue that coordination, as a form of social interaction, induces mutual learning and behavioural adjustments, eventually eliciting compromises in political negotiations, i.e., alignment of beliefs. Our results also support this aspect, and we can confirm H3: Coordination can drive belief similarity over time.

Finally, our results contribute to ACF scholarship by separating PCBs from SAs when investigating beliefs’ impact on coordination. While PCBs initially foster coordination, agreement on SAs sustains and deepens coordination over time. In a policy process that typically lasts several years, negotiating and aligning on these SAs may help bring actors closer together and eventually also facilitate convergence in their PCBs, or at least a compromise finding. Thus, we cannot confirm H2, which prioritises PCBs over SAs in tie creation. Previous ACF applications have yielded inconsistent results regarding the level of beliefs that hold coalitions together (Gabehart, 2024; Matti & Sandström, 2011; Nohrstedt et al., 2023). Our analysis effectively advances this understanding through longitudinal design and triangulation among PCBs, SAs, and coordination. Our study also confirms that cross-coalition coordination is a political reality, mainly in consensus democracies such as Switzerland (Fischer, 2014, in which coordination and belief alignment are more likely at the level of SAs than PCBs. Notably, we did not include deep core beliefs in the presented analysis.

The key strength of this analysis is the availability of a dataset that covers coordination ties and beliefs over a long period, i.e., 2000–2022. While earlier attempts have been made to conduct time-dynamic analyses of the drivers of coordination, these studies have not been able to disentangle social selection from social influence in the way our study does. For example, Ingold and Fischer (2014) took beliefs and coordination data from three consecutive surveys on Swiss climate policy (the same ones that our study uses) to draw inferences about drivers of coordination (social selection). Gronow et al. (2021) pursued the opposite purpose, testing social influence through coordination and beliefs across consecutive surveys in several countries. However, with both research designs, it is impossible to disentangle the effects of shared beliefs on coordination and vice versa. In contrast, the research design of this analysis builds on investigating coordination networks and shared beliefs from different data sources and at different time steps. This reduces endogeneity issues (as beliefs stem from different datasets) and missing values (as we were able to adjust the coding of beliefs to the surveyed respondents).

However, this study also has some limitations. The first one is connected to the consultation dataset. While we tried to the best of our abilities to collect data for all surveyed actors, we could not find data for all actors in the coordination networks. On one hand, this is because not all actors always submit a statement during public consultations (after all, this is voluntary) or are not allowed to (i.e., administrative agencies and bureaucrats). On the other hand, archival records for the earlier phases were not always complete, i.e., some records were

lost over time, and we had to rely on far less comprehensive summary reports. Consequently, our dataset also contains several missing values, particularly during the earlier phases. Similarly, the coordination network contains missing values, as it was not always possible to survey the same political actors, as they sometimes—not seldom, due to political reasons—refrained from responding to such surveys (Braissant, 2023; Ingold, 2008, 2011; Ingold & Fischer, 2014). Finally, in this analysis, we did not systematically disentangle the different phases based on their degree of conflict, although earlier studies of Swiss climate policy have demonstrated that the various phases differ in this regard and that in particular, phases that are more about implementing a policy are less conflictive than phases in which a new policy must be negotiated (Ingold & Fischer, 2014; Kammerer et al., 2020, 2021).

Furthermore, this is a typical and so-called elite study encompassing public and private organisations conceived as collective actors. However, important changes in policy processes over time, whether they concern the level of beliefs (and belief similarity) or coordination, stem from how important people change within organisations. In future research, the authors' case knowledge could be utilised to account for the individual level of actor beliefs and behaviour. Similarly, more reflection can be put into the conceptualisation of beliefs as ties. Following Zafonte and Sabatier (1998), the relation between two actors who support each other's position can be conceived as a weak tie. In network terms, we would argue that there must be at least the opportunity to (directly) interact with each other or know from each other's position (before expressing their own) for a belief similarity tie to be conceived as a form of coordination. Thus, future research could further investigate in what situations and venues belief similarity is a proxy for coordination, thereby rendering the investigation of beliefs and coordination a study of a so-called multiplex network.

Our results pose further implications for future research: We demonstrated how survey research and document analysis could be combined systematically to create a timeline. It is not easy, but feasible, to combine different data sources over time or between different contexts if done with care and in a systematised manner. Depending on the media landscape or ownership, experts' accessibility, interview partners, or documents, this study incentivises researchers to engage in comparative multi-method designs, be it across jurisdictions, policy issues, or over time.

In conclusion, the straightforward result of this research is that coordination and belief similarity mutually reinforce each other over time. This result is relevant to many aspects of the ACF, including coalition formation and maintenance, as well as cross-coalition dynamics within subsystems. However, it can extend beyond that and inform various policy process theories or macro-institutional approaches that examine how actors involved in policymaking interact with one another over time. Furthermore, future research could consider more variables and focus on institutions, venues, and other contextual factors.

As mentioned in the introduction, coordination might be more vulnerable to changes in the political context or institutions (e.g., participatory platforms), or it can be more easily shaped by higher-level outputs or authority decisions. Beliefs, mainly at the (deep or policy) core level, are more difficult to influence strategically outside of an actor. Thus, our results also pose concrete policy implications: During periods when coordination seems key in the policy process and ties are established, the (purposeful) creation of new (open, participatory, inclusive) venues can trigger enhanced coordination. Through these exchanges, and in the longer run, the chances of belief change, coherence, and ultimately, policy-oriented learning are higher.

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Conflict of Interests

There are no conflicts of interest to disclose.

Data Availability

Datasets will be published on SwissUBase.

LLMs Disclosure

ChatGPT version 5.0 was used to solve R-coding issues and to validate own interpretation of the model results.

Supplementary Material

Supplementary material for this article is available online in the format provided by the authors (unedited).

References

- Braissant, S. I. (2023). *Modeling political decision-making processes in the Swiss climate policy subsystem with different conditions for participation by civil society groups* [Unpublished master's thesis]. University of Bern.
- Brouwer, J., & de Matos Fernandes, C. A. (2023). Using stochastic actor-oriented models to explain collaboration intentionality as a prerequisite for peer feedback and learning in networks. In O. Noroozi & B. De Wever (Eds.), *The power of peer learning. Social interaction in learning and development* (pp. 103–120). Springer. https://doi.org/10.1007/978-3-031-29411-2_5
- Calanni, J. C., Siddiki, S. N., Weible, C. M., & Leach, W. D. (2015). Explaining coordination in collaborative partnerships and clarifying the scope of the belief homophily hypothesis. *Journal of Public Administration Research and Theory*, 25(3), 901–927. <https://doi.org/10.1093/jopart/mut080>
- Castañer, X., & Oliveira, N. (2020). Collaboration, coordination, and cooperation among organizations: Establishing the distinctive meanings of these terms through a systematic literature review. *Journal of Management*, 46(6), 965–1001. <https://doi.org/10.1177/0149206320901565>
- Cranmer, S. J., Desmarais, B. A., & Campbell, B. W. (2020). The contagion of democracy through international networks. *Social Networks*, 61, 87–98. <https://doi.org/10.1016/j.socnet.2019.08.009>
- Federal Office for the Environment. (2010). *Schweizer Klimapolitik auf einen Blick: Kurzfassung des Klimapolitischen Berichts 2009 der Schweiz and das UNO-Klimasekretariat* FOEN. <http://www.umwelt-schweiz.ch/ud-1017-d>
- Fischer, M. (2014). Coalition structures and policy change in a consensus democracy. *Policy Studies Journal*, 42(3), 344–366. <https://doi.org/10.1111/psj.12064>
- Frick, M., Iijima, R., & Ishii, Y. (2023). Belief convergence under misspecified learning: A martingale approach. *The Review of Economic Studies*, 90(2), 781–814. <https://doi.org/10.1093/restud/rdac040>

- Fullerton, A. H., Durnová, A., & Weible, C. M. (2025). Characterizing allies and opponents in gender policy debates. *Review of Policy Research*, 42(5), 1201–1219. <https://doi.org/10.1111/ropr.70009>
- Gabehart, K. M. (2024). *The ties that bind: Rural identity and its role in policymaking and polarization* [Doctoral dissertation]. University of Colorado.
- Gabehart, K. M., Nam, A., & Weible, C. M. (2022). Lessons from the advocacy coalition framework for climate change policy and politics. *Climate Action*, 1(1), Article 13. <https://doi.org/10.1007/s44168-022-00014-5>
- García Mancilla, M., & Bodin, Ö. (2020). What drives the formation and maintenance of interest coalitions in water governance forums? In M. Fischer & K. Ingold (Eds.), *Networks in water governance* (pp. 145–172). Springer. https://doi.org/10.1007/978-3-030-46769-2_6
- Gower, J. C. (1971). A general coefficient of similarity and some of its properties. *Biometrics*, 27(4), 857–871. <https://doi.org/10.2307/2528823>
- Gronow, A., Brockhaus, M., Di Gregorio, M., Karimo, A., & Ylä-Anttila, T. (2021). Policy learning as complex contagion: How social networks shape organizational beliefs in forest-based climate change mitigation. *Policy Sciences*, 54(3), 529–556. <https://doi.org/10.1007/s11077-021-09418-2>
- Gronow, A., Satoh, K., Ylä-Anttila, T., & Weible, C. M. (2023). Of devils, angels and brokers: How social network positions affect misperceptions of political influence. *Journal of European Public Policy*, 30(5), 898–921. <https://doi.org/10.1080/13501763.2022.2046137>
- Gronow, A., Wagner, P., & Ylä-Anttila, T. (2019). Explaining collaboration in consensual and conflictual governance networks. *Public Administration*, 98(3), 730–745. <https://doi.org/10.1111/padm.12641>
- Henry, A. D. (2011). Ideology, power, and the structure of policy networks. *Policy Studies*, 39(3), 361–383. <https://doi.org/10.1111/j.1541-0072.2011.00413.x>
- Henry, A. D., Dietz, T., & Sweeney, R. L. (2021). Coevolution of networks and beliefs in U.S. environmental risk policy. *Policy Studies Journal*, 49(3), 675–702. <https://doi.org/10.1111/psj.12407>
- Ingold, K. (2008). *Analyse des mécanismes de décision: Le cas de la politique climatique Suisse* (Vol. 8). Rüegger. Zurich.
- Ingold, K. (2011). Network structures within policy processes: Coalitions, power, and brokerage in Swiss climate policy. *Policy Studies*, 39(3), 435–459. <https://doi.org/10.1111/j.1541-0072.2011.00416.x>
- Ingold, K., & Fischer, M. (2014). Drivers of collaboration to mitigate climate change: An illustration of Swiss climate policy over 15 Years. *Global Environmental Change*, 24, 88–98. <https://doi.org/10.1016/j.gloenvcha.2013.11.021>
- Ingold, K., & Leifeld, P. (2014). Structural and institutional determinants of influence reputation: A comparison of collaborative and adversarial policy networks in decision making and implementation. *Journal of Public Administration Research and Theory*, 26(1), 1–18. <https://doi.org/10.1093/jopart/muu043>
- Ingold, K., Fischer, M., & Cairney, P. (2017). Drivers for policy agreement in nascent subsystems: An application of the advocacy coalition framework to fracking policy in Switzerland and the UK. *Policy Studies Journal*, 45(3), 442–463. <https://doi.org/10.1111/psj.12173>
- Ingold, K., Fischer, M., Freiburghaus, R., Nohrstedt, D., & Vatter, A. (2025). How patterns of democracy impact policy processes: When Lijphart and Sabatier meet. *European Policy Analysis*, 11(2), 254–270. <https://doi.org/10.1002/epa2.70006>
- Ingold, K., Varone, F., Kammerer, M., Metz, F., Kammermann, L., & Storz, C. (2020). Are responses to official consultations and stakeholder surveys reliable guides to policy actors' positions? *Policy & Politics*, 48(2), 193–222. <https://doi.org/10.1332/030557319X15613699478503>
- Kammerer, M. (2018). *Climate politics at the intersection between international dynamics and national decision-making: A policy network approach* [Unpublished PhD dissertation]. University of Zurich.

- Kammerer, M., Ingold, K., & Dupuis, J. (2020). Switzerland: International commitments and domestic drawbacks. In R. K. W. Wurzel, M. S. Andersen, & P. Tobin (Eds.), *Climate governance across the globe* (pp. 235–256). Routledge. <https://doi.org/10.4324/9781003014249-16>
- Kammerer, M., Wagner, P., Gronow, A., Ylä-Anttila, T., Fisher, D. R., & Sun-Jin, Y. (2021). What explains collaboration in high and low conflict contexts? Comparing climate change policy networks in four countries. *Policy Studies Journal*, 49(4), 1065–1086. <https://doi.org/10.1111/psj.12422>
- Koebele, E. A. (2019). Integrating collaborative governance theory with the Advocacy Coalition Framework. *Journal of Public Policy*, 39(1), 35–64. <https://doi.org/10.1017/S0143814X18000041>
- Koebele, E. A. (2020). Cross-coalition coordination in collaborative environmental governance processes. *Policy Studies Journal*, 48(3), 727–753. <https://doi.org/10.1111/psj.12306>
- Koebele, E. A., Bultema, S., & Weible, C. M. (2020). Modeling environmental governance in the Lake Tahoe Basin: A multiplex network approach. In M. Fischer & K. Ingold (Eds.), *Networks in water governance* (pp. 173–202). Springer. https://doi.org/10.1007/978-3-030-46769-2_7
- Knoke, D., Pappi, F. U., Broadbent, J., Tsujinaka, Y. (1996). *Comparing policy network—Labor politics in the U.S., Germany, and Japan*. Cambridge University Press.
- Leach, W. D., & Sabatier, P. A. (2005). To trust an adversary: Integrating rational and psychological models of collaborative policymaking. *American Political Science Review*, 99(4), 491–503. <https://doi.org/10.1017/S000305540505183X>
- Lehmann, L., & Rieder, S. (2002). *Wissenschaftliches Wissen in der politischen Auseinandersetzung: Fallstudie zur Genese des CO₂-Gesetzes im Auftrag der Arbeitsgruppe Transdisziplinarität der Energiekommission der Schweizerischen Akademie der Technischen Wissenschaften (SATW)*. Interface.
- Lemke, N., Trein, P., & Varone, F. (2023). Agenda-setting in nascent policy subsystems: Issue and instrument priorities across venues. *Policy Sciences*, 56(4), 633–655. <https://doi.org/10.1007/s11077-023-09514-5>
- León-Medina, F. J. (2023). Social learning and the complex contagion of political symbols in Twitter: The case of the yellow ribbon in Catalonia. *Big Data & Society*, 10(2). <https://doi.org/10.1177/20539517231180569>
- Linder, W. (2010). *Swiss democracy: Possible solutions to conflict in multicultural societies*. Palgrave Macmillan.
- Lubell, M., Scholz, J., Berardo, R., & Robins, G. (2012). Testing policy theory with statistical models. *Policy Studies Journal*, 40(3), 351–74.
- Markard, J., Suter, M., & Ingold, K. (2016). Socio-technical transitions and policy change—Advocacy coalitions in Swiss energy policy. *Environmental Innovation and Societal Transitions*, 18, 215–237. <https://doi.org/10.1016/j.eist.2015.05.003>
- Matti, S., & Sandström, A. (2011). The rationale determining advocacy coalitions: Examining coordination networks and corresponding beliefs. *Policy Studies Journal*, 39(3), 385–410. <https://doi.org/10.1111/j.1541-0072.2011.00414.x>
- McGinnis, M. D. (2011). Networks of adjacent action situations in polycentric governance. *Policy Studies Journal*, 39(1), 51–78. <https://doi.org/10.1111/j.1541-0072.2010.00396.x>
- Niederberger, A. A. (2005). The Swiss climate penny: An innovative approach to transport sector emissions. *Transport Policy*, 12(4), 303–313. <https://doi.org/10.1016/j.tranpol.2005.05.003>
- Nohrstedt, D., Ingold, K., Weible, C. M., Olofsson, K. L., Satoh, K., & Jenkins-Smith, H. C. (2023). The advocacy coalition framework: Progress and emerging areas. In C. M. Weible (Ed.), *Theories of the policy process* (pp. 130–160). Routledge.
- Pierce, J. J., Giordano, L. S., Peterson, H. L., & Hicks, K. C. (2022). Common approaches for studying advocacy: Review of methods and model practices of the advocacy coalition framework. *The Social Science Journal*, 59(1), 139–158. <https://doi.org/10.1016/j.soscij.2019.06.005>

- Pierce, J. J., Peterson, H. L., Jones, M. D., Garrard, S. P., & Vu, T. (2017). There and back again: A tale of the advocacy coalition framework. *Policy Studies Journal*, 45(1), S13–S46. <https://doi.org/10.1111/psj.12197>
- Podani, J. (1999). Extending Gower's general coefficient of similarity to ordinal characters. *Taxon*, 48(2), 331–340. <https://doi.org/10.2307/1224438>
- Ripley, R. M., Snijders, T. A. B., Boda, Z., & Preciado, P. (2025). *Manual for RSiena*. https://www.stats.ox.ac.uk/~snijders/siena/RSiena_Manual.pdf
- Rufer, M. (2024). *Versöhnung in der Schweizer Klimapolitik? Die Entwicklung der ideologischen Distanz zwischen und innerhalb von Glaubenssystemen* [Unpublished master's thesis]. Universität Bern.
- Sabatier, P. (1988). An advocacy coalition framework of policy change and the role of policy-oriented learning therein. *Policy Sciences*, 21, 129–168.
- Satoh, K., Gronow, A., & Ylä-Anttila, T. (2023). The advocacy coalition index: A new approach for identifying advocacy coalitions. *Policy Studies Journal*, 51(1), 187–207. <https://doi.org/10.1111/psj.12450>
- Snijders, T. A. B. (2017). Stochastic actor-oriented models for network dynamics. *Annual Review of Statistics and Its Application*, 4(1), 343–363. <https://doi.org/10.1146/annurev-statistics-060116-054035>
- Snijders, T. A. B., Lomi, A., & Torlò, V. J. (2013). A model for the multiplex dynamics of two-mode and one-mode networks, with an application to employment preference, friendship, and advice. *Social Networks*, 35(2), 265–276. <https://doi.org/10.1016/j.socnet.2012.05.005>
- Snijders, T. A. B., van de Bunt, G. G., & Steglich, C. E. G. (2010). Introduction to stochastic actor-based models for network dynamics. *Social Networks*, 32(1), 44–60. <https://doi.org/10.1016/j.socnet.2009.02.004>
- Steglich, C., Snijders, T. A. B., & Pearson, M. (2010). Dynamic networks and behavior: Separating selection from influence. *Sociological Methodology*, 40(1), 329–393. <https://doi.org/10.1111/j.1467-9531.2010.01225.x>
- Stiftung Klimarappen. (2013). *Abschlussbericht 2005-2013*. <http://www.klimarappen.ch/en/.4.html>
- Tam Cho, W. K. (2003). Contagion effects and ethnic contribution networks. *American Journal of Political Science*, 47(2), 368–387. <https://doi.org/10.1111/1540-5907.00026>
- Teodoro, J. D., & Prell, C. (2023). Learning to understand: Disentangling the outcomes of stakeholder participation in climate change governance. *Social Networks*, 75, 29–38. <https://doi.org/10.1016/j.socnet.2022.02.006>
- The Federal Assembly—The Swiss Parliament. (2019). *Révision totale de la loi sur le CO2 pour la période postérieure à 2020*. <https://www.parlament.ch/en/ratsbetrieb/amtliches-bulletin/amtliches-bulletin-die-videos?TranscriptId=252225>
- VanderWeele, T. J. (2011). Sensitivity analysis for contagion effects in social networks. *Sociological Methods & Research*, 40(2), 240–255. <https://doi.org/10.1177/0049124111404821>
- Vogeler, C. S., & Bandelow, N. C. (2018). Mutual and self perceptions of opposing advocacy coalitions: Devil shift and angel shift in a German policy subsystem. *Review of Policy Research*, 35(5), 717–732. <https://doi.org/10.1111/ropr.12299>
- Wang, K., & Dong, Y. (2025). The co-evolution of internal knowledge characteristics of cities and external technology transfer: Based on a cross-level network perspective. *Journal of Technology Transfer*. Advance online publication. <https://doi.org/10.1007/s10961-025-10203-z>
- Weible, C. M., & Ingold, K. (2018). Why advocacy coalitions matter and practical insights about them. *Policy & Politics*, 46(2), 325–343. <https://doi.org/10.1332/030557318X15230061739399>
- Weible, C. M., Ingold, K., Nohrstedt, D., Henry, A. D., & Jenkins-Smith, H. C. (2020). Sharpening advocacy coalitions. *Policy Studies Journal*, 48(4), 1054–1081. <https://doi.org/10.1111/psj.12360>
- Wiedemann, R., & Ingold, K. (2024). Building coalitions in a nascent subsystem: Investigating beliefs and policy preferences in Ugandan pesticide policy. *Review of Policy Research*, 41(1), 35–58. <https://doi.org/10.1111/ropr.12540>

Zafonte, M., & Sabatier, P. (1998). Shared beliefs and imposed interdependencies as determinants of ally networks in overlapping subsystems. *Journal of Theoretical Politics*, 10(4), 473–505. <https://doi.org/10.1177/0951692898010004005>

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ARTICLE

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It's Not Just Structural: Political Context and London's Environmental Networks Twenty-One Years Later

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Abstract

The past 21 years have seen the UK environmental movement transform as climate change has become an urgent issue and broader publics have engaged in civil disobedience. More radical protest forms are curtailed by new legislation, while large NGOs like Friends of the Earth and Greenpeace have repositioned themselves as more locally responsive (e.g., anti-fracking). This article uses a novel perceptive and mapping approach to political opportunity theory to compare networking in London's environmental movement, 2002–2003 to 2023–2024. We compare our interview data ($n = 49$) and an organisational network survey ($n = 66$) from 2023–2024 with data from 2002–2003. We argue that structural opportunities vary little and so cannot explain contrasting networking patterns. We describe a set of contingent factors that have varied across the two different eras. These partly tally with activists' own concerns about a recently emerged “grim political environment.” Our novel contribution shows that contingent factors shaping environmental activism have influenced activists' perceptions of a closed polity, resulting in slightly more inclusive networks. Our key finding is that the centrality of climate change to contemporary environmental activism, the perceived urgency of the climate crisis, and the government's poor track record in slowing it have resulted, cautiously, in networks that span what was once a more definitive radical–reformist divide.

Keywords

climate change protest; environmentalism; movement networks; political opportunity; political process

1. Introduction

Britain's environmental movement has evolved since the early 2000s, when it used a predominantly conventional *modus operandi* on issues broadly related to wildlife protection, food, and transport. It prioritised calm tactics after a decade of dramatic direct-action battles, notably against road-building (Melia, 2021). Large and established environmental NGOs, except Greenpeace, avoided protest. At the turn of the millennium, the movement had three key features: (a) wide popular appeal with high and growing membership (or at least stabilising for those that dipped in the 1990s); (b) environmental NGOs, like Friends of the Earth, central to the network; and (c) declining rates of direct action (Rootes, 2012). Climate change was an emergent protest issue (Rootes, 2012) thanks to the Rising Tide direct action network and the Campaign Against Climate Change, which rose to prominence in 2005 with large-scale London-based climate marches.

By 2023, climate change (Scheuch et al., 2024), decoloniality (Huxtable et al., 2020), and intersectional justice (Hiraide & Evans, 2023) were being foregrounded. After a lull in climate action from Rising Tide, Plane Stupid, and Climate Camps, 2018 saw the emergence of Extinction Rebellion (XR), rising to prominence for rebellions aiming to close central London (Doherty et al., in press) and Fridays for Future (Svensson & Wahlström, 2023), spurred by Greta Thunberg. Overlapping climate, intersectionality, and decoloniality agendas emerged both proactively and through learning from mistakes. Even the National Trust, the UK's most popular heritage and nature conservation organisation, began confronting its dark colonial past (Huxtable et al., 2020). In a move some thought tokenistic in addressing intersectionality, XR consciously moved away from civil disobedience in 2023.

Differences in the configuration of the British environmental movement at the two points in time (2002–2003 and 2023–2024) are partly attributable to political contexts. For example, the Labour government's 1997 promise to centre the environment may have reduced activists' sense of need to engage in direct action during 2002–2003. By 2023, climate change was a more significant public concern due to a favourable discursive opportunity structure (Koopmans & Statham, 1999) resulting from overlapping scientific, journalistic, advocacy, and protest campaigns. In 2012, Connelly et al. (2012) claimed that climate change was environmentalism's defining issue, while others highlighted ongoing movement processes of "climate bandwagoning" (Wapner, 2011) and "climatization" (Aykut & Maertens, 2021).

Frustrations have increased that intergovernmental frameworks (the United Nations Framework Convention on Climate Change and its conferences [COPs]) and the UK government's willingness and ability to tackle climate change appear hamstrung. Inadequate actions stemming from the 2008 Climate Change Act are symptomatic of a post-environmental consensus (Blüdhorn, 2011), which assumes environmental problems can be solved with a business-as-usual approach. Activists argue this approach cannot solve the intersectional disadvantages of a new wave of colonial practices driving net-zero policies. This apparent policy output failure triggers activists' radical approaches to climate change (Beer, 2020).

Observable differences in the environmental movement and political contexts (2002–2003 and 2023–2024) make these time points ideal for an analysis examining the role of political context and activists' perceptions of it in shaping environmental movement networks. We address three key research questions:

RQ1: How do contemporary key UK environmental activists understand opportunities and constraints of the political context? And how do they consider these shape environmental networks?

RQ2: How does their positioning in the political context, shaped by their organisations' status (positive, ambivalent, contingent, negative, or none) and tactical repertoires (insider, thresholder, and outsider) shape networking?

RQ3: How do activists' perceptions and inter-organisational networking compare 2002–2003 to 2023–2024? Consequently, what is the relative importance of perception, structure, status, and tactics in shaping environmental movement networks?

Evidence on how political opportunities shape environmental movements is patchy (de Moor & Wahlström, 2022; Rootes, 2003). Few studies examine activists' perceptions of political context (e.g., de Moor & Wahlström, 2019, 2022) or networking within the environmental movement (Diani, 1995; Di Gregorio, 2012). Studies examining how perceptions, status and tactics intertwine to shape networking are rare.

Next, we introduce key elements of political opportunity/process theories, arguing that the opportunities environmental movements face are more than structural. We argue activists' perceptions of political opportunities combine with environmental organisations' tactics (e.g., whether they operate inside political institutions as insiders, outside of them as outsiders, or using a combination as thresholders) and their status (e.g., do they have a positive, negative, or no relationship with government, or something more variable) to shape their opportunities and constraints. Then we introduce our multi-methods methodology, explain findings and reflect on the importance of context, perception, tactics, and their interactions in shaping networks. We compare perceptions and networking patterns with those that one of us (Saunders, 2009) found were determined by political and perceptual factors that were *not just structural*, in 2002–2003. The next section explains what we mean by structural factors and why it is important to move beyond them to understand changing movement networks.

2. Towards a Dynamic Political Opportunity Theory

Political opportunity/process theories aim to discern the effects of political contexts on social movements' shape and form. The contextual factors shaping movements are broadly characterised as “(more) stable” institutional structures and more “volatile” factors related to power configuration (della Porta, 2022).

2.1. Structural Factors

Three key “structural” factors shape movements. First, characteristics of the public bureaucracy determine output structures, shaping activists' sense of agency. A political system that can deliver change might inspire activists to act, whereas an inert state will inspire less agency (Kitschelt, 1986; Kriesi et al., 1995). Second, a powerful and independent judiciary provides opportunities for movements to challenge states and corporations with legal proceedings (Vanhala, 2012). Third, the general political culture of countries shapes protest repertoires. A democracy's (im)maturity might shape the state's extent of (dis)comfort with protest and therefore its repressive inclinations. Repressive states may fail to demobilise radical groups (Jämte & Ellefsen, 2020), sometimes increasing polarisation and radical actions, whereas inclusion will moderate

conflict. Political culture can also determine the relative power of other actors such as corporations, competitor political parties, and civil society (della Porta, 2022). The very stability of these factors means they cannot account for changes to movement networks over time. Therefore, it is important to consider more volatile factors.

2.2. Volatile Factors

A more dynamic “political process” (McAdam, 2013) approach has reached consensus that the key contextual factors affecting movements are horizontality of power, openness of the state to movements, the degree of (in)stability of political alignments, the presence of elite allies, and the degree of facilitation or suppression of movement actions (McAdam & Tarrow, 2018). Given their volatility vis-à-vis more structural factors, these factors have more potential to account for environmental movement networks’ variations from 2002–2003 to 2023–2024.

The UK has a centralised political system with “relative administrative openness” on environmental issues (Rootes, 2012, p. 52), changing little from 2002 to 2024. Repeatedly, parties and governments of most persuasions have green epiphany moments, but struggle to follow with significant action. There is, however, evidence that administrative openness varies across the local planning system. Left-wing local authorities are generally more horizontal, sometimes aligning with infrastructural development opposition. Right-wing authorities tend to be more likely to resist opposition to uphold party positions (Clegg, 2023; Garland et al., 2023). The current Labour government seeks to prevent local resistance from holding up its plans to build 1.5 million homes and ramp up “green” industrial development.

In 2003, Labour had been in power for five years. Its honeymoon period with the electorate was over, but it was still outperforming the Conservatives in the polls. There was only a mild risk of party system realignment by the Liberal Democrats replacing the Conservatives as the second strongest party (Webb, 2003). There were significant changes in public opinion around parties, allegiances, and voting patterns from 2010 to 2018 (Prentice, 2023). A Conservative–Liberal Democrat coalition took power in 2010, replaced by a Conservative-only government in 2015. In 2019, in a famous takeover of traditional Labour heartlands, Conservative support for Brexit and promises to reduce regional inequalities through a “levelling-up” agenda encouraged many traditional Labour voters to deflect to the Conservatives. Cameron’s (2005–2016) Conservative Party branded itself as the greenest government ever, but reneged on promises, dismantling previously moderately effective environmental governance frameworks (Carter & Clements, 2015). Theresa May subsequently committed the UK to a legally binding 2050 net-zero emissions target. Boris Johnson then introduced biodiversity-related policy commitments and hosted the Glasgow 2021 COP26 climate summit. The subsequent Truss and Sunak Conservative governments further deprioritised environmental issues.

It is early days for the new Labour government, in power since July 2024. It has programmatic promises for green growth, but remains preoccupied with economic issues and migration, while confronting the rightward shift in public discourse. It endorses both the Conservatives’ 2023 Public Order Act, which widens the definition of “serious disruption,” making it more applicable to activism and the 2022 Protest Policing and Sentencing Act, which makes an offence of intentionally or recklessly causing public nuisance. Shortly before writing this, 16 non-violent activists were arrested and imprisoned for 41 years in total for opposing

oil companies. These arrestees are known as the “Lord” Walney 16, after the controversial appointment of a pro-oil and anti-Palestine government political violence advisor (Gayle, 2025).

Although volatile approaches to political opportunities can explain changes in movement configuration over time, they are not well-equipped to explain variations in tactics and outcomes within movements at a single time point.

2.3. New Avenues in Political Opportunity Research

Structural factors might be useful for comparing protest incidence and form cross-nationally, while volatile institutional factors are more useful for comparing movements over time, keeping place constant. If these factors shaped movement networks, it would mean monolithic networking patterns in all movements, with organisations engaged in uniform tactics. This is not what happens. For example, within the same state, Latino migrants in Chicago use a variety of tactics from sit-ins and street demonstrations to working with political insiders (Lera, 2023). And the Polish state has a small, conflictual, and transactional animal rights movement (Jacobsson, 2023), while yielding a mass-mobilising women’s movement using a variety of tactics (Korolczuk & Zaxonberg, 2014). British environmental movement networks include moderate NGOs through to law-breaking direct-action networks. This is due to choices about tactics, which impact organisations’ status. Insiders will find the political system considerably more open than an ideological outsider would deem possible (Saunders, 2009).

Thus, we must recognise that forms of action and political opportunities are mutually co-constituted. De Moor and Wahlström (2019, 2022) stress the importance of narratives and perception in shaping political opportunities, focusing on notions of defeat pervading climate activist discourse around 2009, when COP15 was branded a last chance to save the planet. Importantly, some organisations refused to brand any COP summit as a last chance because of potential demobilising effects. De Moor and Wahlström thus emphasise the importance of narratives that movement activists create, which shape perceptions and tactics.

In a study on the related concept of legal opportunities, Vanhala (2018) concluded similarly. Despite a constant “legal opportunity structure,” the sustainability-cum-conservation organisation Worldwide Fund for Nature avoided litigation due to its preference to be non-confrontational. Greenpeace was sceptical of the law, thinking that environmental protection laws should be more stringent. Friends of the Earth drew on a decentralised network of lawyers to bring justice. Vanhala (2018) attributes these differences to framing, but we believe it is also a result of organisations’ values and tactical preferences.

2.4. Expectations

Following de Moor and Wahlström (2019, 2022), we argue that perceptions of opportunities shape environmental organisations’ tactics, which in turn shape their understanding of and interactions with broader political contexts. We argue that interactions between context, perception, and narrative also shape movement networks. Within this interactive context, as perceptive actors, environmental groups, and organisations are most likely to engage in relationships beneficial to their organisation or movement outcomes (Farnhill, 2014). Thus, organisations keen to avoid working alongside free-riders and already in a strong position for recruiting members or having influence may be less likely to want or need collaborations (Hojnacki, 1998). Relatedly, insiders, who establish working relationships with political institutions, may not

want to work with others who could jeopardise their status or reputation, while outsiders may eschew working with organisations they consider compromised and co-opted (Saunders, 2009).

Activists' perceptions are central to our arguments. Should even insiders feel unable to affect change conventionally, they will be more likely to forge alliances with radical counterparts. Further, a closed opportunity structure allows campaigns to expand by reaching out regionally for support (see Renauld, 2016). This happened at the Twyford Down protests opposing the M27 extension in the early 1990s. In a surprising alliance, Middle England and dreadlocked protesters united in courageous civil disobedience, frustrated at finding conventional democratic channels closed. Meanwhile, Friends of the Earth had a choice of pulling out or facing legal challenges that would affect its financial viability and thus all its other campaign activities (Bryant, 1996). As a rational actor, it quit the direct-action protests. Desire for distance from radical action can be easily understood; sometimes, strategic decisions to engage in direct action can forestall opportunities for less radical activists by turning local authorities or governments against an entire movement (Piazza & Genovese, 2016). Thus, we expect the increased urgency to tackle climate change increases networking across what was once a more definitive radical-reformist divide, but for there to still be identity and value clashes, as well as reputational stakes, that temper this.

3. Methodology

We build on Saunders' (2009) "Its Not Just Structural" study, which used similar data from 2002–2003. We combine qualitative interviews conducted with key campaigners with an online survey of London-based environmental organisations. We interviewed 32 key campaigners in London and an additional 17 activists from elsewhere around the country to understand their perceptions of national political opportunities and how the political context shapes networking patterns (December 2022–November 2024). The network survey ($n = 66$) provided quantitative data on organisational tactics, relationships with the government, and networks. The research has ethical approval from the University of Exeter, Humanities and Social Sciences Ethics Committee (2021–2025). Many individuals and organisations did not elect to remain anonymous. A list of interviewees who did not choose to remain anonymous is provided online (<https://ore.exeter.ac.uk/repository/handle/10871/141149>). In the text, below, interviewees are identified by an interviewee number.

3.1. Interviews

Interviewees represent a range of environmental organisations across different ideological positions and spatial scales. Interview questions were informed by social movement theory, exploring tactics and perspectives on the political environment. Transcripts were analysed using thematic analysis, modifying Clarke and Braun's (2017) approach using a mixture of deductive and inductive reasoning. First, interview transcripts were divided among the authors, who independently selected codes deductively using an existing framework (Saunders, 2013). In the "data familiarity phase," to ensure consistency in coding, we held an inter-coder reliability session and refined the coding. This was followed by more in-depth, inductive, thematic analysis. We printed and cut out the quotes and physically grouped them into initial codes. During this stage, 14 codes were generated. We then eliminated repeated (or similar) themes and defined and named them. Our write-up of the qualitative data selects quotes exemplifying general themes to address the first research question.

3.2. Network Survey

The survey targeted national, regional, and local environmental organisations within Greater London, selected for its relatively vibrant environmental activism. Multiple strategies were used to identify the sample. First, we attempted to contact all of Saunders' 2002–2003 respondents (see the Appendix in Saunders, 2013). Organisations no longer operational—indicated by the absence of a website or social media presence—could not be reached. Second, we conducted extensive online searches for “London environmental organisation,” “local environmental group London,” “London-based conservation group,” and “environmental charities Greater London.” Third, we identified London-based branches or local chapters of national NGOs through websites. Finally, we utilised existing directories and networks, such as the London Friends of Green Spaces Network (<http://www.lfgn.org.uk>), enabling us to reach a broad and varied sample of organisations.

A representative completed a questionnaire on behalf of each organisation. We approached 279 organisations via email and direct messages on social media platforms such as Twitter/X, Instagram, and Facebook. We received a 32% response rate ($n = 90$). Among the responses, 66 surveys were fully completed, and 24 were partially completed (ranging from 79% to 24% completion).

3.2.1. Classifying Environmental Organisations

We classify environmental organisations according to their perceived status with the government and the tactics they use as a step towards answering RQ2. Status with government is characterised in the questionnaire as:

- Positive: The government frequently seeks our organisation's advice;
- Ambivalent: The government is friendly, but our organisation generally initiates contact;
- Contingent: The receptiveness of the government is dependent on the issue(s) or department(s) involved;
- Negative: Our organisation unsuccessfully attempts to influence the government or has become blacklisted;
- No relationship: Our organisation does not have a relationship with government either because we prefer alternative campaign targets or do not work at that level.

Organisations' tactics were classified as insider, thresholder, or outsider (Tables 1 and 2) based on questionnaire responses. We used internet research to discover the tactics of non-responding organisations identified as collaborators by our respondents.

Table 1. Categories of tactics.

Category	Tactics
Insider	Government consultee, or government consultee <i>and</i> media work
Thresholder	Petitions, leafleting, press conferences, research and reporting, letter-writing, education and training, media stunts, marches, rallies, demonstrations, cultural performances, procedural complaints, litigation, public meetings, and practical conservation work
Outsider	Boycotts, disruption of events, blockades/occupations, ethical shoplifting, ecotage, adbusting, other forms of civil disobedience, and/or a mixture of thresholder and outsider activities

Organisations categorised as insider use *only* insider activities. Thresholders use a range of tactics, including insider and thresholder strategies, and they may also use outsider tactics. An organisation is a thresholder if it is a government consultee that also engages in marches, rallies, and demonstrations, and perhaps even sometimes in civil disobedience. Outsiders use thresholder and outsider tactics only (for example, participation in marches, rallies, blockades, and ecotage; Table 2).

Table 2. Categorisation of insiders, thresholders, and outsiders.

Category	Uses insider tactics	Uses thresholder tactics	Uses outsider tactics
Insiders	Yes	No	No
Thresholders	Yes	Yes	Yes or no
Outsiders	No	Yes or no	Yes

3.2.2. The Network

We examine a collaboration network, which consists of the respondent organisations' answers to the question: "Please list the five most important environmental organisations with which your organisation has collaborated on a campaign or environmental activity in the last 12 months." This was asked in respect of each of local, London-wide, and national environmental organisations, allowing nomination of 15 organisations in total. When examining network links by status, we analyse only respondents because we cannot second-guess how non-respondents appraise their relationship with the government. When looking at network links by tactics, we use a rectangular matrix, also including listed non-respondents, because we can assess tactical repertoires of non-respondents by examining their web pages. The network maps and visualisations are coded by status and tactics to answer RQ2. Our raw data and a key to Figure 3 are available in our Supplementary Files.

3.3. Comparative Analysis

We compare activists' perceptions of political opportunities at the two points in time, as well as the networking patterns in relation to status and tactics. This comparative analysis allows us to answer RQ3, addressing the relative importance of perception, status, and tactics in shaping environmental movement networks.

4. Analysis

4.1. Thematic Analysis

"2020 was a catalyst because (a) the UK was going to host COP26, (b) Covid happened, and then (c) the movement for Black Lives Matter really catalysed...and all those narratives helped us to build a narrative of climate justice" (Interviewee 9). This opening quote illustrates the ways in which UK environmental activists interpret events as opportunities within the broader political context that shapes their activism. Climate breakdown, repression, and Covid were interpreted as intersecting to create significant threats, while providing the opportunity for narrative development around climate justice. Our thematic analysis identifies four major themes:

- Cynicism about government and corporate inaction;

- Presence of a “grim” political environment;
- The effects of Covid-19;
- Local opportunity structures.

We show the sub-themes in Table 3 and expand on the first two in our analysis section. We have not focused on Covid-19 and local opportunity structures in this article because we wish to draw attention to contemporary subjectivities around national political opportunities. Our interviews took place after November 2022, which was after the lifting of social restrictions and, therefore, Covid-19 was mostly discussed historically.

Table 3. Coded themes on political opportunities and threats of key activists.

Focused coding	Axial coding
International inaction/failure of IPCC	Cynicism about government and corporate (in)action
National government inaction	
The status quo rules	
Empty rhetoric/greenwashing	
Small windows of opportunity	
Improved salience of climate change	
Increased repression	A “grim” political environment
Paranoia and fears of infiltration	
Chilling effects	
Cost of living crisis	
Organisational capacity reached	
Carefulness with disobedience	
Finding solidarities	
Reduced quality of actions online	The effects of Covid-19
Loss of momentum and shifting priorities	
Mental health and personal struggles	
Financial struggles	
Slactivism	
Regional levelling effect	
New audiences and connections	
New targets	
Worthy (but not always useful) local efforts	Local opportunity structures
Local authorities constrained by the status quo	
Lack of funding	
Local authorities as allies	

4.2. Cynicism About Government and Corporate (In)Action

In general, interviewees had little faith in intergovernmental frameworks and governments’ ability to deal with the environmental/climate crises. The following quotes illustrate a lack of faith in the United Nations Framework Convention on Climate Change Conferences of the Parties to deliver the required changes: “Unfortunately, the COPs turned out to be a total failure...but it has to be governments that will make the fossil fuel industry do the right thing” (Interviewee 35); “Up until COP27 last year, even after the invasion of

Ukraine, we could still latch on to the fact that the UK was COP President, we could use that. This year, it's been slightly more challenging" (Interviewee 9).

That lack of faith also filters down to the national level, as activists express disappointment, alongside recognition that the status quo and economics are given more importance in political discourse and action than large-scale changes required to live sustainably with our environment. One expressed: "Very, very little faith in governments. Just massive disappointment" (Interviewee 47). And that was a mild statement compared to some: "In terms of the national government, they are f***ng awful. Granting these new licences and things. They're b****y awful" (Interviewee 1).

Many of our interviewees recognised the government's general inability to challenge the status quo, which sat alongside empty rhetoric and greenwashing:

It's a problem of economics. And the way our society and our economy is structured. You have to be willing to confront that and tackle that in the way you look at solutions....All the scientific evidence in the world has not pushed us forward to making the kind of changes [needed]. (Interviewee 26)

The setting of mid-term targets without delivery and the paucity of action in short-term election cycles were noted as problematic:

The thing that gets to me the most is when things are promised and we don't see any progress....You know, you hear all this is going to be done by 2030 but you get halfway there and you think "well, I haven't heard anything about that." (Interviewee 44)

If politicians want to be re-elected, they can't do anything that's going to upset the public. (Interviewee 4)

Despite overall negativity, a few organisations had insider relationships with government agencies, seeing new opportunities emerging from these relationships. This next quote illustrates one organisation's set of cooperative relationships with governmental institutions:

We have working relationships with them [the Environment Agency] and we have relationships with people like DEFRA [Department for Environment, Food and Rural Affairs] and the OEP [Office for Environmental Protection]. We're trying to make sure that our voices are heard in terms of legislative changes. (Interviewee 37)

And later:

Setting up the Office for Environmental Protection...was a good step because...it's essentially acknowledging that the regulators aren't enforcing much of the legislation that's required to protect the environment. (Interviewee 37)

The new Labour government was viewed by some in a slightly hopeful manner ("With the new government, obviously, we have an opportunity. And we've got 'asks' to the government and that, you know, we want things

we want to see improved;" Interviewee 14), even though the majority branded all governments as ill-equipped to deal with environmental problems. Several others recognised the importance of changes to the discursive opportunity structure, particularly with climate change, which was becoming a more acceptable subject for public discussion as more people were agreeing with the scientific consensus and its urgency:

You've got more and more surveys coming out saying most of the population now get it. I think when we started in 2014–2015, that wasn't the case. You know, I'd be stood out there in the pi****g rain trying to give leaflets out, you know: "Are you worried about the climate?" "No, f**k off!" (Interviewee 26)

4.3. A "Grim" Political Environment

There was a strong sense among interviewees that we are living in "grim times" (Interviewee 8) as the "state is becoming more repressive" (Interviewee 38) alongside other societal challenges, including the cost-of-living crisis and aftereffects of Covid-19. We found significant opposition to the Public Order Act (2023) and clear signals from some to avoid a prison sentence. These quotes illustrate the sense of fear and constraint activists feel in an increasingly hostile environment for protest: "With the media and government, you know, it's very much against human rights. To be stopped and to be fearful of going and protesting about anything....We're in dangerous times really" (Interviewee 44); "It feels like this sector as a whole is just really restrained by what we're allowed to say and how the government will react" (Interviewee 5).

Interviewee 44 describes a sense of fear that pervades environmental activist spheres, while Interviewee 5 suggests restraining effects in general, even around what can and cannot be said. However, a few activists had a nuanced view of the impacts of the Public Order Act and future attempts to restrain protest, envisaging opportunities. Interviewee 37 states people can be inspired by injustice, a theme also highlighted by interviewee 49, who thinks the law reveals the state's draconian nature. Interviewee 48 emphasised how people can wake up to the injustice of a perceived draconian state, triggering new waves of resistance:

I think it [changes to protest laws] will...turn away the people who were kind of on the fence a little bit about it. But then yeah, it will also inspire others who are just like, dead against the injustice of it. (Interviewee 37)

Until recently, slow marching was considered legal. The idea was to put pressure on the demand while still being within the confines of the law. This changed with the Public Order Act, meaning this became unlawful. I feel this holds a mirror up to the government at how draconian and unjust the system is. (Interviewee 49)

At some point, those dice might land on a double six and trigger an explosion of resistance, and so the job of these activist campaigns is to force the government to throw the dice as many times as possible. (Interviewee 48).

We found that radical groups had a sense that they may have been infiltrated by undercover police, particularly as awareness of the undercover policing scandal increased (Schlembach, 2018). However, XR activists were more immune to this sense of infiltration, tending to be more inviting and open to everyone, including police officers (Interviewee 14). Despite XR's apparent openness, some NGO representatives

informed us they feel constrained in openly associating with XR or other direct-action groups. A staff member from a well-known conservationist NGO characterised its supporters as tourists, very different from direct action protesters. Others made similar claims: “I know that the RSPB [Royal Society for the Protection of Birds] has always been very wary of actually encouraging supporters to go to XR events or doing anything like that” (Interviewee 16); “Supporters [of my organisation] may be climate aware, but many simply want to be able to visit locally beautiful and heritage-rich sites with free parking” (Interviewee 21).

Another (anonymised) NGO worker commented on the need for their NGO to find a “central and safe place” within the environmental movement: “We’re careful about that link [with more radical factions of the environmental movement] because...to get conservative support....We’ve been very carefully sort of shifting ourselves away from that” (Interviewee 8).

However, not all activists think distance is the solution, instead favouring a movement ecology built across insiders and outsiders. As interviewee 21 told us:

I think there is this amazing utopia of campaigning, where you have groups like XR, JSO [Just Stop Oil], who are really setting the agenda...making space for these conversations, and then groups like us are coming in with the right insider influencing.

The range of activities in which activists engage is seen as inspiring to some, filling them with hope that change is possible. While some are sceptical of direct action, others are concerned about the inefficacy of legislative changes to deliver climate action, rendering reformist-insider approaches pointless or compromised. Interviewee 32 told us they had friends who were:

Connected with Friends of the Earth. I’ve noticed they still think you can get legislative change... maybe with the next government. But, I think putting a lot of energy into things like petitions and so on [is] probably maybe less effective but it’s complex....There’s people fighting in different ways on so many different fronts, and I think there’s strength in supporting each other, if we can, and being a bit forbearing about various approaches.

Overall, our thematic analysis of activists’ perceptions of the political opportunities and the resultant networking indicates a sense of despair, with some differences of opinion between insiders and outsiders. Some outsiders are seen by insiders as too radical, and some outsiders see insiders as too soft to generate the required changes.

4.4. Comparison With Perceptions in 2002–2003

In 2023–2024, there is more nuance than Saunders (2009) found in 2002–2003, with notably more willingness to build the environmental movement by working across what was seen as an insider–outsider divide. Similarly to the current era, qualitative interviews with key activists 21 years ago revealed some frustration with the government’s “words not action,” but this was on issues such as marine protection and runways rather than the meta-issue of climate change, which has proved a more sticky issue to address. Importantly, at both points in time, “openness of the government varies according to the organisation involved, the nature of the issue, and the department being targeted, but also according to perceptions of individual activists” (Saunders, 2009, paragraph 10.6).

4.5. Survey and Network Analysis

Figure 1 shows a relationship map of organisations in our sample by their categorised tactics (insider, thresholder, outsider) and their relations with government (positive through to none). Those who use more moderate tactics tend to have closer relations with the government. This illustrates the mutually co-constitutive nature of political opportunities, which are shaped by tactics used and perceptions of relations with the government. Indeed, the more positive appraisal of political opportunities in our qualitative data is from organisations with moderate tactics.

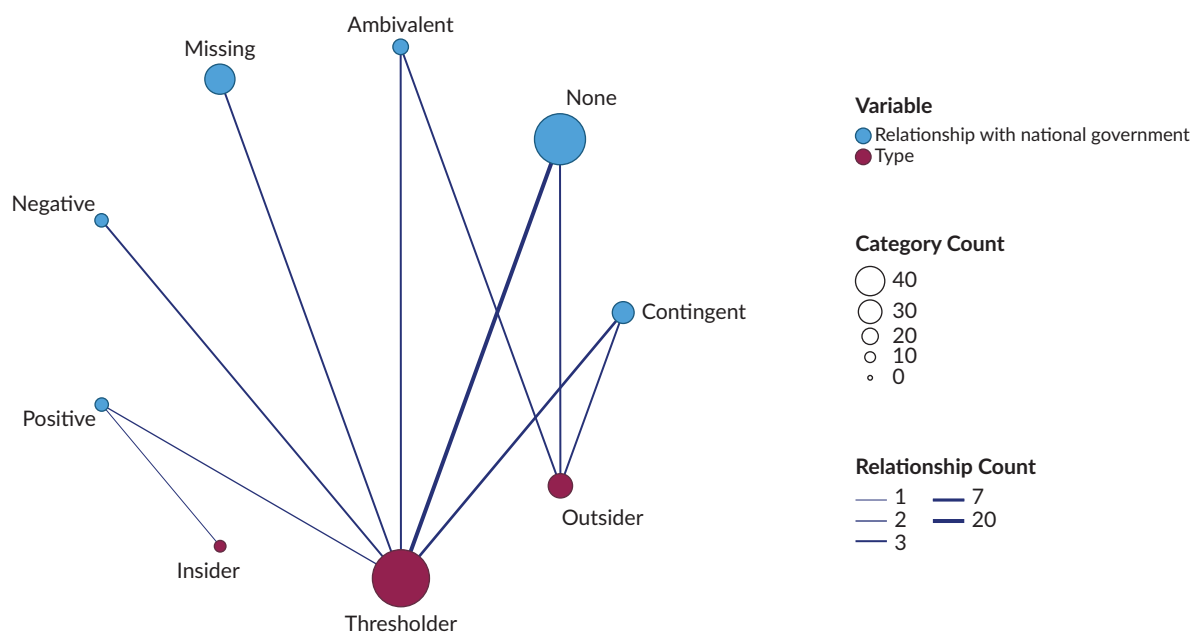


Figure 1. Relationship map of tactics and relations with the government.

Table 4 shows the collaboration network by status with the government. To interpret this table, read the cells across the rows. Of the three organisations responding to the questionnaire that had positive links with government, only one provided network data, listing an organisation that lacks a relationship with government, and one for which we had insufficient data to make a categorisation. The four organisations with an ambivalent relationship to government did not list any collaborators in their questionnaire responses, so there is no row data included. Of the nine that have a contingent relationship with the government, four had network links.

Table 4. Collaboration network by relationship to the national government.

Initiator of ties	Receiver of ties						Average links per organisation
	Number of organisations with links	Positive	Contingent	Negative	None	Missing	
Positive ($n = 3$)	1	0	0	0	1	1	2
Contingent ($n = 9$)	4	1	0	0	3	0	1
Negative ($n = 3$)	1	0	0	0	1	0	1
None ($n = 31$)	8	1	2	1	6	2	1.5
Missing ($n = 15$)	3	1	0	0	0	2	1

Together, they were linked to one organisation with a positive relationship with the government and three that had no governmental relationship.

Note that the most central organisations, linked with the broadest range of organisations with a variety of statuses vis-à-vis government, are without any links to government themselves. They are represented by the largest square in the right panel network visualisation summary (Figure 2), where those without a relationship to government broker the network, linking the single organisation with a negative relationship to government to the rest of the network. Figure 2 facilitates comparison with the 2002–2003 network. In the 2023–2024 data, organisations with ambivalent, contingent, and negative relationships with government are all quite central, but in 2002–2003, it was ambivalent organisations that were central brokers. In 2002–2003, organisations lacking a relationship with government and those with a positive relationship to government lacked network links. But these organisational types are mutually linked in 2023–2024. Overall, the square matrix yields a fairly fragmented network, with only an average of 0.33 links for the 66 organisations included in the data. This is down from an average of 0.64 in Saunders' (2009) 2002–2003 data.

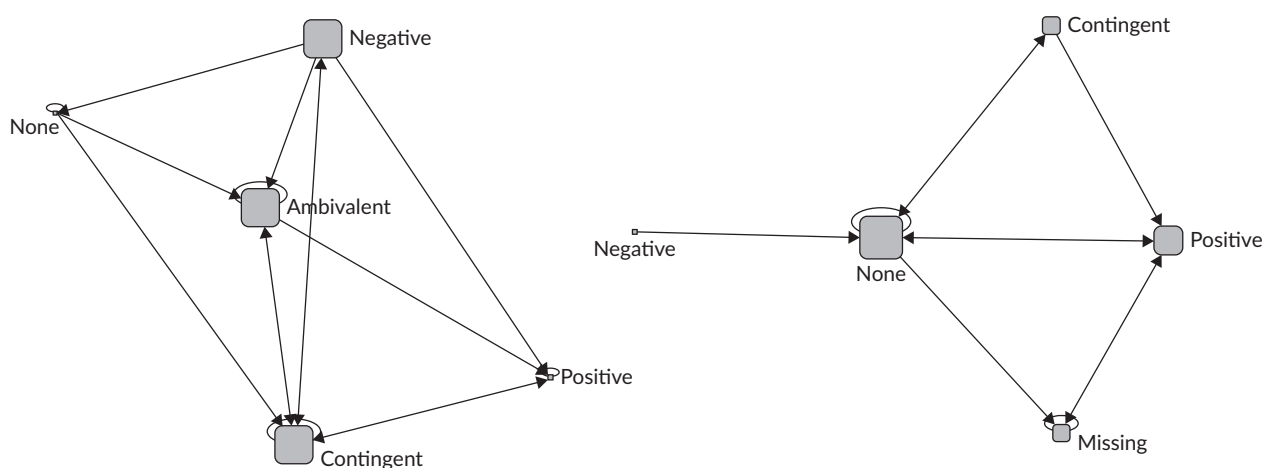


Figure 2. Summary visualisations of organisational types by relationship with national government 2002–2003 and 2023–2024. Notes: The panel on the left shows a visualisation of summary data from Saunders' (2009) Table 7; the panel on the right shows a summary of the data from the current study; the visualisations are drawn using NetDraw (Borgatti, 2002), with a graph theoretic layout, and using the degree score (number of times each category mentioned) to size the nodes.

Table 5 shows the collaboration network by categories of tactics. Of the thresholds' 78 ties in the 2023–2024 data, 61% of them were directed towards other thresholds, down from 86% of ties that the 2002–2003 thresholds had with other thresholds. In 2023–2024, one-third of the links that thresholds had were with insiders, up from just 12% in 2002–2003. A higher proportion of thresholds have collaborative links with outsiders than in 2002–2003. In 2002–2003 thresholds extended just 2% of their links to outsiders. This increased to 5% in 2023–2024. The frequencies for the 2023–2024 data are shown in Table 5.

Table 5. Collaboration network by categories of tactics used.

Initiator of ties	Number of organisations with links	Receiver of ties			Average links per organisation
		Insiders	Thresholders	Outsiders	
Insider ($n = 3$)	1	3	5	1	9
Thresholder ($n = 47$)	47	26	48	4	1.6
Outsider ($n = 15$)	9	3	15	2	2.2

Figure 3 visualises the collaboration network by tactics. Thresholders (yellow nodes) are the most central. The outsider Friends of Horsenden (FOH)—the first red node on the right-hand side of the graphic—bridges thresholder organisations. In comparison, the insiders (green nodes) are generally more peripherally positioned, while some are linked to both outsiders (red) and thresholders (yellow). Note how FOH links with the insider Ealing Wildlife Group (EWG), which is also linked with the outsider Citizen Zoo CIC (CZC). Elsewhere in the network, insiders are mostly linked with thresholders.

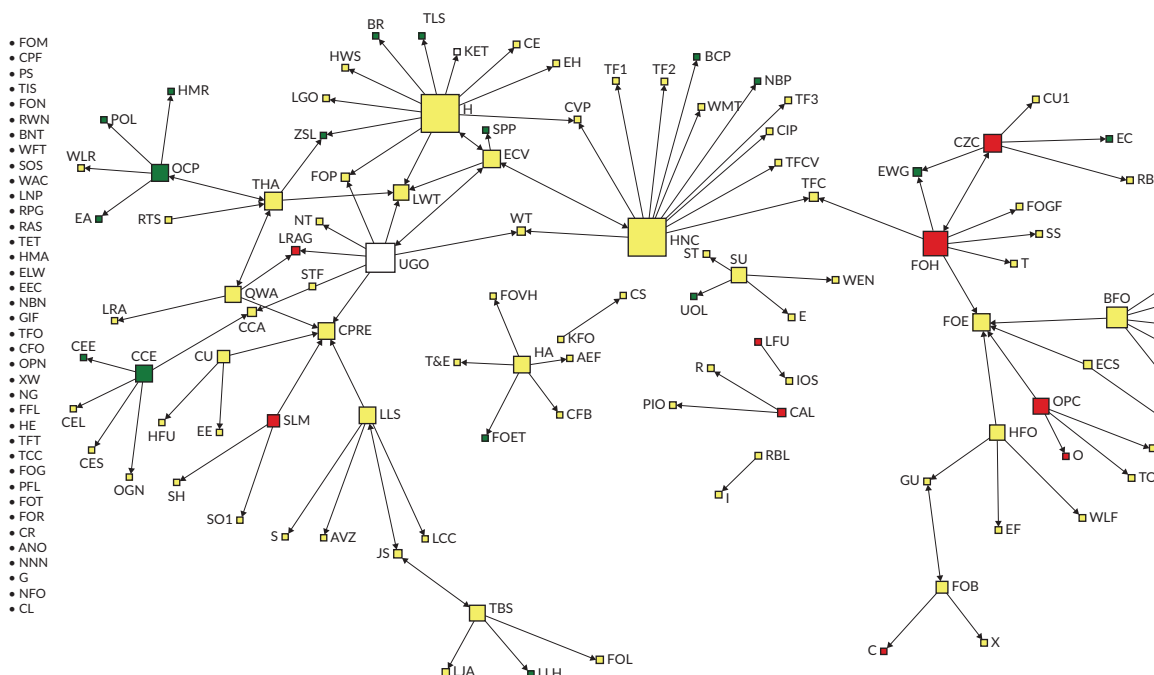


Figure 3. The collaboration network coded by the tactical repertoire category. Notes: Green = insiders, yellow = thresholders, red = outsiders, white = not possible to characterise; data are symmetrised under the assumption that collaboration is not possible without a two-way link; the visualisations are drawn using NetDraw (Borgatti, 2002), with a graph theoretic layout, and using the degree score (number of times each category mentioned) to size the nodes.

Figure 4 summarises the network by tactical repertoire category, comparing 2002–2003 to 2024–2025. At both points in time, thresholders were the most well-networked, including ties to others like themselves. Notably, insiders and outsiders now have direct links and no longer require thresholders as brokers.

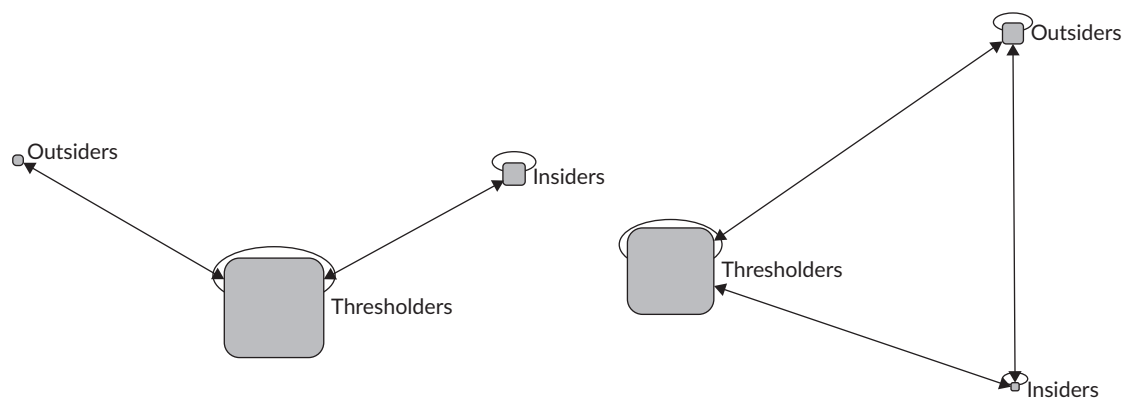


Figure 4. Summary visualisations of organisational types by tactical repertoire category 2002–2003 and 2023–2024. Notes: The panel on the left shows a visualisation of the summary data from Saunders' (2009) Table 5; the panel on the right shows a summary of data from the current study; the visualisations are drawn using NetDraw (Borgatti, 2002), with a graph theoretic layout, and using the degree score (number of times each category mentioned) to size the nodes.

In summary, our findings have shown some key differences in activists' perceptions of opportunities across the two times, which we argue have favourably shaped the willingness of reformist and radical environmental organisations to collaborate, except those most principled or most concerned about their reputations. The 2002–2003 qualitative analysis did not reveal such a sense of urgency, nor such a grim interpretation of the overall political context. Our network mapping indicates broader willingness to cooperate across the movement when activists agree that political opportunities are closed. In 2002–2003, more organisations had convivial relationships with the government, constraining their willingness to link with radicals (Saunders, 2009).

5. Discussion and Conclusions

We show that contemporary key environmental activists understand the opportunities and constraints they are afforded by the political context differently, partly shaped by perceptions, status, and tactical choices. Mostly, they express little faith in intergovernmental agreements and governments to affect the required changes to prevent runaway climate change. Some hoped the Labour government would open new opportunities. However, these opportunities are closing in the theoretical sense of less favourable laws governing protest and according to activists' subjectivities. The UK government has recently approved a third runway at Heathrow Airport and introduced new planning mechanisms to reduce delays caused by protests and judicial reviews. A few mentioned how the government's attempt to foreclose civilly disobedient protests could create an upsurge in mobilisation and new networks, which have not yet manifested. Certainly, climate change appears to be a central issue for almost everyone interviewed recently. Our qualitative analysis also showed that more established conservationist NGOs like the Royal Society for the Protection of Birds were not willing to associate themselves, or their membership bases, with direct action; yet, this disassociation was much more strongly expressed in 2002–2003. In the contemporary era, activists were more open to a division of labour within a carefully negotiated movement ecology.

Our quantitative analysis reveals closeness between organisations' tactical repertoires and their status with the government, providing grist to our argument on interrelationships between tactics and perceptions of

opportunity. We also found patterns in the positioning of actors in the network shaped by their own organisations' status (positive, ambivalent, contingent, negative, or none) and tactical repertoires (insider, thresholder, and outsider). Organisations with a negative relationship with government were not, in 2023–2024, networking with organisations other than those lacking a relationship with government; otherwise, there were linkages across organisations with a variety of relationships with government. Moreover, insiders, thresholders and outsiders were linked directly, as well as through brokers.

In 2002–2003, Saunders (2009) discovered a much higher proportion of organisations ambivalently related to government. This sort of relationship is friendly, but initiated by environmental organisations themselves. We can attribute this to activists' sense that it was once more worthwhile engaging with the government. Certainly, the planning system was more favourable to challengers (Clegg, 2023).

False promises documented in the more contemporary interviews further explain why few organisations currently have an ambivalent relationship with government. Contemporary environmental organisations in London either engage directly, have mixed experiences of engaging, or do not bother engaging with the government. This change has potentially affected the network. Previously, organisations with an ambivalent relationship to government were central to the environmental network. They used to bridge those with a positive relationship with the government and those without such a relationship. We now find that those without a relationship to the government are more embedded in networks; some are directly linked to those with positive relationships to the government and broker those with negative and positive relationships. Moreover, in the 2002–2003 data, Saunders (2009) found that thresholders were brokers between insiders and outsiders. More recently, this has changed with network links now existing between each of insiders, thresholders, and outsiders.

How can the differences be explained? Frustration at government inaction and false promises on climate change have, in recent years, been more pronounced than in 2002–2003, when small networks like Rising Tide were a relatively lonely voice. All the while, changes to the Public Order Act seem to have encouraged some well-established organisations to distance themselves further from direct action protest, while others have emphasised direct action's importance and the right to participate in it (e.g., Greenpeace), or the importance of a multi-pronged battle plan.

These perceptions are barely related to a “more stable” (della Porta, 2022, p. 1) political opportunity structure (POS). The POS' very stability proves its redundancy to explain changes in movement networks over-time. More volatile factors matter more. In 2003, the Labour Party was still relatively popular and not under threat from any competitor party (Webb, 2003). In contrast, in 2023–2024, the Conservative Party was emerging from a debacle it caused over (mis)management of Covid-19, and a raft of anti-Green political decisions. This took place within the context of a partial party realignment (Prentice, 2023), which would have likely made it less appealing for organisations to want to work with government, and consequently for insiders and those with a positive relationship to government to feel they had considerably less at stake by soiling their reputations by associating with direct action networks. Combined with the escalated sense of emergency, we have at least a plausible explanation for networking now occurring more readily across a reformist-radical divide. At the same time, we recognise that networking across previous ideological divides (Saunders, 2009) remains uncommon for the more staid established NGOs.

Our work stresses the importance of considering activists' perceptions of political opportunities, as well as the interactions this has with their tactics and status. Our comparison of networks at different points in time indicates that "more stable" structural approaches to political opportunities have few advantages for understanding movement networks in a single country context. We have shown instead that perceptions, tactics, and status interact with the political context to shape inter-organisational networking in the environmental movement. The key finding of our article—that movement networks vary over time, dependent on perceptions, status, and tactics—is generalisable to other movements, including Black Lives Matter. In that movement, the suffocation to death of George Floyd by a police officer resulted in perceptions of a closed political opportunity structure. This subsequently triggered a range of reformist and more radical organisations to link together in significant demonstrations (Gürcan & Donduran, 2021). Importantly, these linkages do not extend across generational waves of civil rights activism, stressing the importance of historical changes to perceptions of openness and consequently of movement networks (Board et al., 2020). Contrary to the structural approach, we do not anticipate different movements in the same political context to have similar networking patterns to each other. This is because the perceptions of activists are likely to be different, and consequently so will be their tactics and status with the government. Context, perceptions, and tactics all matter.

Acknowledgments

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Conflict of Interests

The authors declare no conflict of interests.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

References

- Aykut, S. C., & Maertens, L. (2021). The climatization of global politics: Introduction to the special issue. *International Politics*, 58, 501–518. <https://doi.org/10.1057/s41311-021-00325-0>
- Beer, C. T. (2020). "Systems change not climate change": Support for a radical shift away from capitalism at mainstream U.S. climate change protest events. *The Sociological Quarterly*, 63(1), 175–198. <https://doi.org/10.1080/00380253.2020.1842141>
- Blüdhorn, I. (2011). The politics of unsustainability: COP15, post-ecologism, and the ecological paradox. *Organization & Environment*, 24, 34–53. <https://doi.org/10.1177/1086026611402008>
- Board, M., Jr., Spry, A., Nunnally, S. C., & Sinclair-Chapman, V. (2020). Black generational politics and the Black Lives Matter movement: How political opportunity structures and respectability politics affect movement support. *National Review of Black Politics*, 1(4), 452–473.
- Borgatti, S. P. (2002). *NetDraw software for network visualization* [Computer software]. Analytic Technologies.

- Bryant, B. (1996). *Twyford Down: Roads, campaigning and environmental law*. Routledge.
- Carter, N., & Clements, B. (2015). From 'greenest government ever' to 'get rid of all the green crap': David Cameron, the Conservatives and the environment. *British Politics*, 10(2), 204–225. <https://doi.org/10.1057/bp.2015.16>
- Clarke, V., & Braun, V. (2017). Thematic analysis. *The Journal of Positive Psychology*, 12(3), 297–298. <https://doi.org/10.1080/17439760.2016.1262613>
- Clegg, L. (2023). Taking one for the team: Partisan alignment and planning outcomes in England. *British Journal of Politics and International Relations*, 23(4), 680–698. <https://doi.org/10.1177/1369148120985409>
- Connelly, J., Smith, G., Benson, D., & Saunders, C. (2012). *Politics and the environment: From theory to practice*. Routledge.
- de Moor, J., & Wahlström, M. (2019). Narrating political opportunities: Explaining strategic adaptation in the climate movement. *Theory and Society*, 48, 419–445. <https://doi.org/10.1007/s11186-019-09347-3>
- de Moor, J., & Wahlström, M. (2022). Environmental movements and their political context. In M. Grasso & M. Giugni (Eds.), *Routledge handbook of environmental movements* (pp. 263–277). Routledge.
- della Porta, D. (2022). Political opportunity/political opportunity structure. In D. Snow, D. della Porta, D. McAdam, & B. Klandermans (Eds.), *The Wiley-Blackwell encyclopedia of social and political movements*. <https://doi.org/10.1002/9780470674871.wbespm159.pub2>
- Diani, M. (1995). *Green networks: A structural analysis of the Italian environmental movement*. Edinburgh University Press.
- Di Gregorio, M. (2012). Networking in environmental movement organisation coalitions: Interest, values or discourse? *Environmental Politics*, 21(1), 1–25. <https://doi.org/10.1080/09644016.2011.643366>
- Doherty, B., Hayes, G., & Saunders, C. (in press). Extinction rebellion. In D. A. Snow, D. McAdam, & D. Moss (Eds.), *Contemporary social movements*. Wiley-Blackwell.
- Farnhill, T. (2014). Understanding the labour-environmental relationship in Britain, 1967–2011: A new narrative using political opportunity structure and coalition theory. *Labor History*, 55(4), 427–447. <https://doi.org/10.1080/0023656X.2014.932513>
- Garland, J., Saunders, C., Olcese, C., & Tedesco, D. (2023). Anti-fracking campaigns in the United Kingdom: The influence of local opportunity structures on protest. *Social Movement Studies*, 22(2), 211–231. <https://doi.org/10.1080/14742837.2022.2031956>
- Gayle, D. (2025, January 29). Sixteen jailed UK climate activists to appeal against “unduly harsh” sentences. *The Guardian*. <https://www.theguardian.com/environment/2025/jan/29/sixteen-jailed-uk-climate-activists-to-appeal-against-sentences>
- Gürkan, C. E., & Donduran, C. (2021). The formation and development of the Black Lives Matters movement: A political process perspective. *SIYASAL: Journal of Political Sciences*, 30(1), 151–167. <https://doi.org/10.26650/siyasal.2021.30.1.871276>
- Hiraide, L. A., & Evans, E. (2023). Intersectionality and social movements: A comparison of environmentalist and disability rights movements. *Social Movement Studies*, 24(3), 344–361. <https://doi.org/10.1080/14742837.2023.2234828>
- Hojnacki, M. (1998). Organised interests' advocacy behaviour in alliances. *Political Research Quarterly*, 51(2), 437–459.
- Huxtable, S., Fowler, C., Kefolas, C., & Slocombe, E. (Eds.). (2020). *Interim report on the connections between colonialism and properties now in the care of the National Trust, including links with historic slavery*. National Trust. <https://nt.global.ssl.fastly.net/binaries/content/assets/website/national/pdf/colonialism-and-historic-slavery-report.pdf>

- Jacobsson, K. (2023). Channeling and enrollment: The institutional shaping of animal rights activism in Poland. In K. Jacobsson & S. Saxonberg (Eds.), *Beyond NGO-ization: The development of social movements in Central and Eastern Europe* (pp. 27–47). Ashgate.
- Jämte, J., & Ellefsen, R. (2020). The consequences of soft repression. *Mobilization: An International Journal*, 25(3), 383–404. <https://doi.org/10.17813/1086-671X-25-3-383>
- Kitschelt, H. (1986). Political opportunity structures and political protest: Anti-nuclear movements in four democracies. *British Journal of Political Science*, 16(1), 57–86.
- Koopmans, R., & Statham, P. (1999). Ethnic and civic conceptions of nationhood and the differential success of the extreme right in Germany and Italy. In M. Giugni, D. McAdam, & C. Tilly (Eds.), *How social movements matter* (pp. 225–251). University of Minnesota Press.
- Korolczuk, E., & Zaxonberg, S. (2014). Strategies of contentious action: A comparative analysis of the women's movements in Poland and the Czech Republic. *European Societies*, 17(4), 404–422. <https://doi.org/10.1080/14616696.2014.977321>
- Kriesi, H., Koopmans, R., Duyvendak, J. W., & Guigni, M. G. (1995). *New social movements in Western Europe: A comparative analysis*. University of Minnesota Press.
- Lera, C. L. (2023). When local opportunity structure matter in political agency: The multipronged incorporation of Latinos in Chicago. *Local Government Studies*, 49(2), 295–313. <https://doi.org/10.1080/03003930.2020.1857248>
- McAdam, D. (2013). Political process theory. In D. A. Snow, D. della Porta, D. McAdam, & B. Klandermans (Eds.), *The Wiley-Blackwell encyclopedia of social and political movements*. <https://doi.org/10.1002/9780470674871.wbespm160>
- McAdam, D., & Tarrow, S. (2018). The political context of social movements. In D. A. Snow, S. A. Soule, H. Kriesi, & H. J. McCammon (Eds.), *The Wiley Blackwell companion to social movements* (2nd ed., pp. 17–42). Wiley.
- Melia, S. (2021). *Roads, runways and resistance: From the Newbury bypass to Extinction Rebellion*. Pluto Press.
- Piazza, G., & Genovese, V. (2016). Between political opportunities and strategic dilemmas: The choice of “double track” by the activists of an occupied social centre in Italy. *Social Movement Studies*, 15(3), 290–304. <https://doi.org/10.1080/14742837.2016.1144505>
- Prentice, J. (2023). *The decade of realignment: Explaining political change in Britain 2010–2021* [Unpublished doctoral dissertation]. University of Sussex. https://sussex.figshare.com/articles/thesis/The_decade_of_Realignment_explaining_political_change_in_Britain_2010-2021/23494334?file=41202479
- Renauld, M. (2016). The Esquel effect: Political opportunity structure and adaptation mechanisms in anti-mining mobilization in Argentine Patagonia. *Canadian Journal of Development Studies*, 37(4), 524–540. <https://doi.org/10.1080/02255189.2016.1202102>
- Rootes, C. (2003). The transformation of environmental activism: An introduction. In C. Rootes (Ed.), *Environmental movements in Western Europe* (pp. 1–19). Cambridge University Press.
- Rootes, C. (2012). New issues, new forms of action? Climate change and environmental activism in Britain. In J. W. van Deth & W. A. Mahoney (Eds.), *New participatory dimensions in civil society: Professionalisation and individualized collective action* (pp. 46–48). Routledge.
- Saunders, C. (2009). It's not just structural: Social movements are not homogenous responses to structural features, but networks shaped by organisational strategies and status. *Sociological Research Online*, 14(1), 26–41. <https://doi.org/10.5153/sro.1856>
- Saunders, C. (2013) *Environmental networks and social movement theory*. Bloomsbury.
- Scheuch, E. G., Ortiz, M., Shreedhar, G., & Thomas-Walters, L. (2024). The power of protest in the media: Examining portrayals of climate activism in the UK news. *Humanities and Social Sciences Communications*, 11, Article 270. <https://doi.org/10.1057/s41599-024-02688-0>

- Schlembach, R. (2018). Undercover policing and the spectre of “domestic extremism”: The covert surveillance of environmental activism in Britain. *Social Movement Studies*, 17(5), 491–506. <https://doi.org/10.1080/14742837.2018.1480934>
- Svensson, A., & Wahlström, M. (2023). Climate change or what? Prognostic framing by Fridays for Future protesters. *Social Movement Studies*, 22(1), 1–22. <https://doi.org/10.1080/14742837.2021.1988913>
- Vanhala, L. (2012). Legal opportunity structure and the paradox of legal mobilization by the environmental movement in the UK. *Law & Society Review*, 46(3), 523–556. <https://doi.org/10.1111/j.1540-5893.2012.00505.x>
- Vanhala, L. (2018). Is legal mobilisation for the birds? Legal opportunity structures and environmental nongovernmental organizations in the United Kingdom. *Comparative Political Studies*, 51(3), 380–412. <https://doi.org/10.1177/0010414017710257>
- Wapner, P. (2011). The challenges of planetary bandwagoning. *Global Environmental Politics*, 11(3), 137–144.
- Webb, P. (2003). Parties and party systems: Prospects for realignment. *Parliamentary Affairs*, 56(2), 283–296. <https://doi.org/10.1093/parlij/gsg019>

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Network Alliances Among Fridays for Future Local Groups in Italy: Relational Mechanisms in Action

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Abstract

Climate mobilisations unite collective actors around a common goal, yet they often diverge on problems and solutions for addressing climate change. How such heterogeneous networks sustain collaboration remains an open question. Between November 2018 and October 2019, the Fridays for Future mobilisation in Italy brought together local groups coordinating protests and organizing two national assemblies, each articulating multiple framings of climate change. This article shows how network alliances emerge as relational consequences of two mechanisms: framing affinity (homophily) and meeting attendance (foci-of-activity). Adopting a mixed-method research design, the data combine a relational survey and participant observation in meetings. Frame analysis and social selection exponential random graph models reveal the coexistence of reformist and rejectionist orientations towards political institutions, each driving a distinct alliance logic: rejectionists preferred allies with similar orientations (logic of selection), while reformists bridged framing differences (logic of inclusion). While confirming previous findings on framing homophily, the results challenge the view that framing heterogeneity inevitably leads to fragmentation. Instead, they show how meetings help negotiate orientations and form alliances in environmental networks, highlighting the relational dynamics of alliances in climate mobilisations.

Keywords

alliances; environmentalism; framing; foci-of-activity; Fridays for Future; homophily; meeting; mixedmethod; networks

1. Introduction

In April 2019, in a fully packed aula magna at the University of Milan, the first national assembly of Fridays for Future (FFF) Italia took place. Hosted by the Milan local group (LG), the meeting opens with speeches by participating LGs, guided by prompts: who we are, what we want, where we want to go, and how we want to coordinate. The speeches reflect different orientations, revealing the complexity and heterogeneity in how climate change is framed. After a moment of tension, a consensus is reached on the meeting report encompassing all orientations. In October 2019, as the mobilisation continues to expand, the FFF-LGs meet again at Castel dell'Ovo in Naples. Here, the differences sharpen: some advocate for a national reform plan for ecological transition; others call for mass civil disobedience, with intermediate positions emerging. Despite this, the FFF-LGs continue to negotiate the conflict and sustain collective action as a coalition throughout the mobilisation.

These moments show how meetings serve as key spaces of framing work—elaborating shared meanings of problems and solutions associated with the issue around which collective actors mobilize. Collective actors elaborate collective action frames (CAFs) to articulate problems, solutions, and motivations for action (Benford & Snow, 2000). When collective actors articulate the issue similarly, the resulting framing affinity facilitates alliances and, consequently, enhances their mobilizing capacity (Van Dyke & McCammon, 2010). Climate change is widely recognized as a field marked by framing heterogeneity (Parks, 2022), posing challenges of division and factionalism (Hadden, 2015). Yet in the Italian context, while diversity among FFF activists' attitudes and beliefs has been investigated (Tomnyuk et al., 2023), framing's role in alliances among grassroots climate actors remains underexplored, especially compared to other cases (e.g., Marquardt, 2020; Saunders, 2012).

Drawing on relational sociology and social movement studies (Diani & Mische, 2015; Krinsky & Crossley, 2015), this article contributes to debates on alliance formation within environmental networks by examining how Italian FFF-LGs ally through framing affinity despite meeting disputes. Specifically, this article investigates how alliances are facilitated by relational mechanisms crucial for tie formation: homophily and foci-of-activity (Fuhse & Gondal, 2024). Homophily operates through perceived affinity: actors sharing similar orientations are more likely to form ties (McPherson et al., 2001). Foci-of-activity means that co-participation fosters ties beyond events (Feld, 1981; Feld & Grofman, 2011).

The empirical material was produced through a mixed-methods research design. FFF-LGs' CAFs of climate change were collected through participant observation during meetings, and relational data were gathered via an online questionnaire. Following a sequential qual-quant approach (Hollstein, 2023), frame analysis of the LGs' speeches identified CAFs in each meeting (Lindekilde, 2014). These were transformed into variables and incorporated into social selection exponential random graph models (ERGMs)—an inferential technique for analysing relational mechanisms (Koskinen et al., 2013).

Findings confirmed homophily based on framing affinity as a key mechanism in alliance formation among collective actors with similar conflict elaborations. They also revealed two opposing CAFs. A reformist orientation framed climate change as an environmental problem and emphasized conventional protest actions (e.g., demonstrations, petitions) to pressure political institutions for national policies. By contrast, a rejectionist orientation conceived of climate change as a systemic issue rooted in capitalism and called for

disruption through confrontational protest actions (e.g., mass civil disobedience, blockade). The reformist and rejectionist CAFs sustained distinct logics of alliance formation—a logic of inclusion and a logic of selection—which, in turn, shaped the network. While protest events emphasized unity, meetings revealed a plurality where framing differences were not erased (Haug, 2013). Instead, they were actively negotiated, preventing coalitional fragmentation.

By examining a social network shaped by framing affinity and meeting participation, this article advances current debates on the politics of environmental networks. Rather than treating networks as mere nodes and ties, it shows them as relational outcomes (Lo Piccolo & Stagni, 2025) of political dynamics, constituting an “evolving social world” (Crossley, 2010b, p. 31). By unpacking how reformist and rejectionist logics emerge, and how meetings mediate disputes, this article traces how environmental networks embody ongoing processes through which collective actors negotiate differences and coordinate contentious action.

This article begins by situating the conceptual framework within the literature on environmental networks, at the intersection of social movement studies and research on relational mechanisms. Section 3 then introduces the case of FFF, contextualizing it within the Italian environmental milieu. Section 4 presents data production and outlines the methodological choices. The subsequent section analyses the data and presents the findings. Section 6 discusses implications for the literature on environmental networks and the formation of alliances. The article concludes by revisiting its core arguments.

2. Conceptual Framework

Drawing on relational and network perspectives on social movements (Diani & Mische, 2015; Krinsky & Crossley, 2015), this article develops a framework to examine how shared interpretative frames and event-based interactions shape network alliances during the expansive phase of mobilisation. Rather than viewing environmental networks as static organisational structures, it conceptualizes them as outcomes of framing and coordination negotiated during meetings. Through these processes, similarity, difference, and participation structure the network. By analysing how grassroots climate groups form alliances despite—and along—internal framing differences, this article contributes to understanding the political dynamics shaping environmental networks.

In social movement studies, alliances and coalitions have been present across different research agendas (Van Dyke & Amos, 2017). A minimal form of alliance is present “any time two or more [collective actors] work together on a common task. [This] can range from a simple partnership between just two movement groups to a complex network of many social movement organisations” (Van Dyke & McCammon, 2010, p. xiv).

Differences across perspectives hinge on the factors considered, whether separately or in interaction: pre-existing social ties between actors facilitate the recognition and identification processes; the context matters, i.e., actors’ perceptions of political opportunity structure(s) facilitate or hinder alliance formation; and framing affinity between the actors favours alliances (McCammon & Van Dyke, 2010). While acknowledging that multiple factors jointly influence alliance formation (McCammon & Van Dyke, 2010), this article focuses on framing affinity as a critical and sufficient condition in coalition-building processes marked by internal framing differences (Van Dyke & Amos, 2017). Building on these insights, the focus shifts from

reviewing explanatory factors to theorizing how framing affinity operates as a relational mechanism within network formation processes.

Alliances are collaborative relationships among collective actors, the consequences of the mobilisation rather than exclusively their antecedent and/or explanatory factor (Diani, 1992; Melucci, 1996). Collective actors collaborate to elaborate a shared understanding of the conflict, to coordinate efforts toward specific objectives, or to provide resources to groups with limited technical expertise or media access (Eggert & Pilati, 2014). The resulting ensemble of collaborative relationships generates relational patterns, a network structure, which acquire properties that support the coordination of the phases of mobilisation (Diani, 1992). During an expansive phase, the general inclination to engage in mobilisation contributes to the formation of a dense and decentralized network structure. In contrast, during a contraction phase, the network structure is more fragmented, and the formation of alliances becomes more demanding, as each collective actor focuses on organisational maintenance (Diani, 2015, pp. 205–208).

Since collaborative relationships cannot be fully understood through their existence alone, examining attitudes, behaviours, and shared meanings—such as framing affinity—helps identify relational patterns in networks (Saunders, 2007). Empirical studies reflect this complexity, reporting diverging results concerning the relationship between framing affinity and alliances among collective actors. In some cases, short- and/or medium-term shared goals have sufficed for collective actors to form instrumental alliances. While acknowledging differences in broader orientations, the elaboration of a common goal enabled them to set these aside and collaborate in its pursuit (Diani & Bison, 2004). The instrumental character of the relationship is such insofar as the collective actors are not involved in a process of (re)defining their own collective being, but they collaborate to achieve a shared goal. Evidence shows that negotiating shared understandings of the problem, solution, and motivation of the conflict, a CAF (Benford & Snow, 2000), is necessary for an effective alliance (Croteau & Hicks, 2003). Mische (2008), for example, shows how framing processes and communicative styles influence the network structure composed of student and civil society organisations: symbolic representations both enable and constrain the establishment and maintenance of collaborative ties. An approach aligning with the suggested direction (Saunders, 2007) involves studying network structures by testing how relational mechanisms shape the formation of collaborative relationships among collective actors. Di Gregorio (2012) provides an illustrative example in this sense by introducing the relational mechanism of homophily in environmental networks. The homophily mechanism operates by increasing the likelihood that actors with a shared and relevant attribute engage in a positive relation (McPherson et al., 2001). Since alliance formation involves an ongoing process of negotiation of the alliance boundaries (Mische, 2011) and in framing activity (Benford, 1997), a CAF acts as a shared and relevant attribute:

Proposition 1: When two collective actors share the same CAF, they are more likely to form an alliance.

In this framework, CAFs are both conceived as articulations of the conflict's diagnosis and prognosis, and as carriers of deep-seated values and orientations. Notably, in the field of collective action around climate change, multiple orientations coexist. These reflect and stem from different waves of environmentalism, including conservationism, radical environmentalism, sustainable development, and environmental justice (Parks, 2022). Their coexistence is critical, as divergent elaborations may hinder the negotiation and coalition unity.

Previous empirical results show that value and discourse homophily affect environmental networks differently. While the former leads to collaborations among collective actors sharing deep-seated values, the latter enables collaboration among collective actors with different yet compatible framings. In this case, discourse practices (framing in particular) bridge collective actors with different orientations, creating more integrated network structures (Di Gregorio, 2012). Other studies, however, suggest that distinct and opposing CAFs can fragment coalitions mobilizing around climate change. Saunders (2012), for instance, reports that the presence of opposing CAFs, rooted in different orientations, led to the dissolution of a coalition. During a climate camp organized by a British coalition, the presence of a position advocating for policy change within the existing system (reformist framing), alongside another calling for a complete systemic transformation (radical framing), resulted in an irreconcilable framing dispute. Similarly, during the most recent wave of climate protests, disputes over opposing CAFs undermined coalition continuity. For instance, in Germany, the FFF coalition split over conflicting political claims—moderate reform versus radical systemic change—leading those advocating for the latter to form a new group (Marquardt, 2020). The emergence of opposing CAFs within a coalition reflects the presence of deep-seated values concerning how to achieve social and political change: while systemic transformation implies a rejection of the current political-institutional order, reformist approaches envision change as a reassessment and adjustment of that very order. Consequently, opposing orientations—rooted in deep-seated values—may activate the value homophily mechanism, preventing alliances across CAFs. Distinguishing between homophily based on shared CAFs and on opposing CAFs helps clarify the different relational consequences that framing—whether understood as a conflict elaboration and as an expression of deep-seated values respectively—can produce. Here, opposing CAFs are expected to intensify the homophily mechanism within each orientation, contributing to more polarized relational dynamics:

Proposition 2: When two collective actors adopt CAFs that share the same orientation (e.g., reformist or rejectionist), even if their specific frames differ, they are more likely to form an alliance.

Given that collective actors strategically present themselves as a unified collective entity in the frontstage of mobilisation (Gerhards & Rucht, 1992), framing differences surface in the backstage of the mobilisation—e.g., internal meetings—where their impact on intra-coalitional dynamics comes to the fore (Haug, 2013), thereby allowing for a deeper understanding of their effects (Staggenborg, 2010). The role of meetings can be captured through the relational mechanism of foci-of-activity, which shows how shared physical settings enable face-to-face interaction and foster durable relationships (Feld, 1981). Framing homophily and foci of activity are distinct yet closely intertwined relational mechanisms. For a focus-of-activity to have relational impact, actors must share a relevant attribute specific to that focus (Feld & Grofman, 2011, p. 528). It follows that by not attending a meeting, a grassroots collective actor may hinder its chances of forming alliances, as it misses the opportunity both to signal its similarity to others and to recognize theirs:

Proposition 3: When two collective actors jointly participate in a meeting, they are more likely to form an alliance.

A meeting, as “the result of the participants’ interactions while it simultaneously structures these interactions” (Haug, 2013, p. 707), is a space where collective actors engage in the negotiation of means, ends, and view of the field—i.e., their collective identity process (Melucci, 1996). Here, differences and similarities are constitutive of the situation (Haug, 2013). During a mobilisation’s expansive phase, meetings

are even more central for coordinating the mobilisation since confrontation and communication can mitigate or exacerbate frame disputes (Benford, 2022; Koopmans, 2004):

Proposition 4: During the expansive phase of the mobilisation, contrasting CAFs are more likely to be present in the same meeting.

Building on these considerations, Propositions 1 and 2 focus on the CAFs enabling alliance formation, whereas Propositions 3 and 4 emphasize how meetings and co-presence shape relational outcomes. Broader contextual factors, in turn, further influence collaboration patterns. More specifically, geographical and temporal characteristics of collective actors influence how, when, and with whom these interactions take place. Alliances among geographically distant collective actors tend to involve higher coordination costs and require more substantial resources. Thus, patterns of alliance formation among collective actors across a nation-state may display geographic proximity effects (Fuhse & Gondal, 2024):

Proposition 5: When two collective actors mobilize within the same administrative area, they are more likely to establish an alliance.

The temporal dimension also plays a key role. Grassroots actors do not always emerge simultaneously; some actors emerge early in the mobilisation as innovators, while others join later as reproducers (Minkoff & McCarthy, 2005). Thus, longevity can serve as a key resource—sometimes even more than size—for the accumulation of relational capital (Oliver et al., 1985), thereby contributing to the structuring of the network alliances.

Proposition 6: When collective actors are founded in the early phase of the mobilisation, they are more likely to receive collaborative ties than those founded later.

Taken together, the six propositions advance the understanding of alliance formation through relational mechanisms, whereby interpretative dynamics, interactional settings, and structural embeddedness jointly interpret how grassroots actors sustain unity despite framing differences.

3. Fridays for Future in the Italian Environmental Milieu

Italian environmentalism has long displayed framing heterogeneity, significantly shaping mobilisations over the years. From the outset, a division emerged between conservationist and political-ecological orientations. While the former prioritized environmental preservation, the latter linked environmental degradation to the disruptive effects of economic activity (Della Seta, 2000). This divergence shaped coalitional patterns: organisations collaborated mainly with groups framing the conflict similarly—an instance of homophily—producing an archipelago-like structure (Diani, 1995).

Environmental mobilisation gained mass character only when nuclear energy was framed as a threat and disarmament as the solution (Asara, 2022). This convergence fostered organisational capacity and broad participation (Diani & Forno, 2007). However, when environmental issues lost public salience in the mid-1990s, reformist and conservationist groups turned to consensual action, such as animal and landscape protection campaigns. In contrast, radical organisations focused on local struggles over pollution and transport (Forno, 2006). This divergence distanced organisations and weakened collaboration.

Since then, environmental protests have remained active, especially through local, disruptive actions that faced increasing repression. Many of these mobilisations took on a Locally Unwanted Land Use (LULU) character and adopted an environmental justice frame (Schlosberg, 2002). They have been widespread nationwide (Imperatore, 2023). Yet alliances within them are often unstable. Tensions between environmental organisations and local committees generated fractures (della Porta & Piazza, 2008), but these conflicts have also sparked renewed waves of mobilisation (della Porta et al., 2019). While environmental collective actors succeeded in building coalitions around local issues, they struggled to articulate global environmental challenges through sustained national campaigns, focusing instead on lobbying international institutions (della Porta & Diani, 2004).

The diffusion of climate mobilisation in late 2018 marked a turning point for the Italian environmental milieu. New groups formed, and the issue of climate change gained unprecedented centrality (Biancalana & Ladini, 2024). The new wave originated with the pioneering protest by Greta Thunberg, then a 16-year-old Swedish student who performed a climate strike in front of the Swedish parliament in August 2018: a perceived political opportunity given the approaching parliamentary elections (de Moor et al., 2021; Uba, in press; Wahlström et al., 2024a). School strikes held on Fridays spread in Italy through a downward scale shift. “Fridays for Future” protest events were performed in front of local political institution buildings. Strikers denounced the lack of political attention and intervention on climate change. On 15 March 2019, the first global mass demonstration under the banner of FFF was organized. The mobilisation continued throughout the year with further mass demonstrations alongside weekly school strikes, marking the mobilisation’s expansive phase in Italy (Wahlström et al., 2024b; Zamponi et al., 2024).

In Italy, the diffusion process is distinctive for organizing two national assemblies. During the expansive phase, no other country attempted such federal-level coordination, which is in line with the Italian social movement milieu’s propensity to build national grassroots coordination (Caruso et al., 2010). The Italian FFF mobilisation took a coalitional form involving a constellation of actors: newcomers, environmental associations, student unions, and social centers (Wahlström et al., 2024a). Tensions and disputes at each meeting did not lead to coalition breakdown, and the federal organising remained active throughout the mobilisation. By contrast, German FFF mobilisation experienced internal fracture due to framing differences (Marquardt, 2020). The Italian case is thus a crucial one for studying the role of framing similarities and differences in shaping alliances.

4. Data and Methods

The research adopts a sequential qualitative-quantitative mixed-method design (Hollstein, 2023). It began in the field with participant observation, then moved to a survey. This same sequence guided the analysis: frame analysis first unpacks how FFF-LGs frame climate change, followed by analysing their network alliances using social selection ERGMs. This is set out together with an explanation of the rationale and each instrument’s contribution.

The event-based approach defines the network boundaries by identifying its population through the researcher’s observation and recording of participation in key events (Laumann et al., 1989). In this case, the meetings held in Milan (April 2019) and Naples (October 2019) serve as key events where face-to-face interactions and negotiation foster alliances. This approach uses joint event participation as a sampling

criterion and evidence of a direct social tie, which reduces the researcher's nominalist contribution (Diani & Mische, 2015). Based on this criterion, a FFF-LG—a meso-level actor—is included as a network node if it attended at least one meeting. The network's population consists of 107 LGs: 57 attended both assemblies, 28 only Milan, and 22 only Naples.

Within the mixed-method design, data production relied on distinct sources and instruments. The relational data were gathered through an online questionnaire administered between November and December 2019, a well-suited instrument to reach geographically dispersed actors. The response rate (83%) was considerably high. Several factors may account for this: the questionnaire was circulated during the mobilisation's expansive phase, likely motivating LGs to seek visibility and recognition; at the time, the field was still unsaturated; LGs were contacted via their social media accounts, their primary communication channels; and the participant observation approach (Gobo, 2008, pp. 122–124) may have helped build trust. Additionally, a two-month contact diary recorded outreach efforts, allowing systematic follow-ups (typically after 10 days of non-response).

The questionnaire included a series of stepwise questions to elicit the relational data vital to movements (Diani, 1990): “Has your group been in contact with other groups related to FFF?” “If yes, what are the names of these groups?” and “With the groups you mentioned, did your group share material resources or share information?” The alliance tie is conceptualized as a dyadic flow-type relation (Borgatti et al., 2009) and as an inter-organisational exchange (Diani & Mische, 2015). The resulting alliance network is a binary one-mode directed matrix where 1 indicates that a node nominates another, and 0 otherwise. The use of a directed network preserved respondents' representations of relationships and allowed detailed investigation of network configurations.

To handle missing data, a reconstruction-based imputation strategy was used. Specifically, for non-respondent nodes—i.e., with no outgoing tie information—ties were imputed based on incoming nominations. Following Krause and Huisman (2023, p. 604), it was assumed that if a node was chosen by another, it is more likely than not that an exchange occurred, making this a plausible estimate. This assumption aligns with relational approaches that treat nominations as indicators of meaningful ties, even when unreciprocated (Crossley, 2010a).

The framing data were gathered through participant observation conducted during meetings. Field notes, together with the Facebook live-stream recording of the Milan meeting and the video-recorded speeches from the Naples meeting shared on social media, enabled transcription of speeches. This methodological choice reflects an interest in observing speech-in-action—how CAFs were negotiated and constructed backstage—and a preference for naturalistic data (Cardano, 2011).

CAFs were identified through qualitative frame analysis of speech transcripts. Following Lindekilde's approach (2014), each speech was coded into diagnostic and prognostic parts. These parts were compared to find patterns of similarity and difference, enabling systematic CAF identification. The heterogeneity of the CAFs outlined in the theoretical framework was clearly reflected in the speeches. While some groups framed climate change as primarily an environmental issue, others attributed it to the capitalist system's mode of production. Still others emphasized its social consequences, such as its impact on citizens' health. This diagnostic diversity was mirrored in the prognostic dimension: some advocated scientific and technical

solutions, expressing confidence in science; others stressed raising public awareness to increase mobilisation and political pressure; while others called for a fundamental socio-political and economic transformation.

In addition, the coding procedure revealed two main axes of differentiation and similarity. Notably, previous studies showed this wave of mobilisation is characterized by “bringing the political institutions back” into the conflict’s elaboration (de Moor et al., 2021). Ultimately, the jurisdiction of the targeted political institutions and the stance toward them shaped the CAFs articulated by the Italian FFF-LGs during the meetings. As reported in Table 1, the CAFs were grouped by the level at which the FFF-LGs situate the problem—global, glocal, national, or local. This axis of differentiation was further articulated in the character of the proposed solutions. A first distinction concerned whether the solutions were individual or collective. An individual orientation implied that climate change is caused by, and can be addressed through, changes in individual consumption and behaviour. In this case, political institutions were neither blamed nor targeted. In contrast, collective orientations differed in their stance toward political institutions—whether reformist or rejectionist. The former involved articulating policy demands to political institutions, while the latter called for the rejection of the current socio-political and economic system.

Table 1. CAFs typology.

	Collective		Individual
	Reformist	Rejectionist	
Global	Global climate justice; Global reformist (N)	Global rejectionist	Lifestyle change (M)
Glocal	Glocal reformist (M)	Glocal rejectionist	
National	National reformist		
Local	Local reformist (N)	Local rejectionist	

Notes: (M) only Milan meeting; (N) only Naples meeting.

As part of the sequential qual-quant mixed-method design, the CAFs typology (see Table 1) was coded into two categorical variables: Milan CAFs and Naples CAFs. Each FFF-LG is assigned a CAF based on their speech framing during each assembly. These variables serve to test Proposition 1 (framing homophily) and Proposition 4 (framing heterogeneity). Additionally, in line with Proposition 2, the CAFs were categorized according to the orientations towards political institutions, resulting in two dichotomous variables: Milan rejectionist and Naples rejectionist. Furthermore, to assess meeting participation’s effect (Proposition 6), a dichotomous variable—Not present—is included to indicate whether the FFF-LGs were present in each meeting.

In addition, geographical and temporal attributes characterized FFF-LGs. The geographical attributes include a continuous variable representing the population size of each FFF-LG’s urban context, and a categorical variable, *region*, indicating each FFF-LG’s Italian administrative area. The latter is used as a node attribute to test Proposition 5.

The temporal attribute, included for testing Proposition 6, is a categorical variable indicating each FFF-LG’s creation date, grouped into *earlier*, *middle*, and *later groups*. These categories reflect phases of mobilisation: the *earlier* group includes FFF-LGs created between November 2018 and February 2019; the *middle* group

includes those formed in March 2019; and the *later* group refers to those established between April and October 2019. This division follows the Italian mobilisation's timeline (Zamponi et al., 2024).

The ERGMs test the propositions concerning homophily as a social selection mechanism, since they allow inferences about ties' patterns (Robins & Lusher, 2013). ERGMs assume that social networks are composed of various configurations reflecting social processes such as reciprocity, transitive closure, activity, and popularity, which together contribute to the social network's self-organizing pattern (Koskinen & Daraganova, 2013). Network configurations are selected for an ERGM based on the theoretical framework guiding the formation of network ties (Robins & Lusher, 2013). Since multiple social processes interact to shape the network structure, ERGMs simultaneously consider these processes and detect which drive tie formation (Lusher et al., 2021). Social selection ERGMs test whether nodal attributes influence social structures alongside self-organisation. In these models, node attributes are fixed covariates that can be binary, continuous, or categorical. Social selection models simultaneously assess endogenous effects (network configurations) and exogenous effects (node attributes; Robins & Daraganova, 2013).

In this article, four social selection models test relational mechanisms controlling for clustering, centralization, reciprocity, and baseline tie formation's tendency. The baseline model (Model 0) considers network configurations such as *arc*, *reciprocity*, *alternating in-star*, *alternating out-star*, *triangulation*, and *cyclic closure*, which together form a solid starting point for directed networks (Lusher & Robins, 2013). Specifically, the arc effect (*Arc*) measures the general propensity to form ties, while reciprocity (*Reciprocity*) captures the tendency for mutual ties. The alternating in-star (*AinS*) and out-star (*AoutS*) effects assess the spread of popularity and activity, respectively. Triangulation (*AT-T*) reflects the tendency for transitive closure—closing structural holes by forming triangles when multiple independent paths exist between nodes—whereas cyclic closure (*AT-C*) accounts for the presence of 3-cycles, indicating non-hierarchical network closure.

The independent variables indicated above act as node attributes. Since social selection models also assess changeable attributes like attitudes and behaviours (Robins & Daraganova, 2013), CAFs are included as changeable attributes along with fixed geographical and temporal ones.

The four models differ in the two time points to which the CAFs attribute refers. Models 1 and 2 assess Milan meeting CAFs, while Models 3 and 4 assess the Naples meeting CAFs. Models 1 and 3 focus on Propositions 1 and 4, while Models 2 and 4 focus on Proposition 2. Propositions 3, 5, and 6 are tested across the models.

In directed networks, an attribute may encourage node activity (expressing ties) or popularity (receiving ties). For binary attributes, these correspond to *sender* and *receiver* effects, while homophily is assessed through the *match* effect. Homophily for categorical variables is measured by the *match effect*, for continuous ones by the *difference* and *sum* effects (see Robins & Daraganova, 2013, p. 95, for graphical representations). ERGMs are estimated using the *R* package *ergm* (Handcock et al., 2025; Hunter et al., 2008; Krivitsky et al., 2023). Additionally, the goodness-of-fit and multicollinearity tests for each model were conducted following the Borgatti et al. (2022) and Duxbury (2018) approaches. Goodness-of-fit statistics (see Supplementary File) show that the models replicate key structural features of the observed network. Variance inflation factors based on simulated networks indicate acceptable multicollinearity levels among covariates.

5. Results

The analysis first examines the network's population and descriptive properties. The FFF-LGs are distributed across Italy, yet LGs from Lombardia and Campania are over-represented—i.e., administrative areas where the meetings took place. This pattern reflects lower participation costs for LGs closer to event sites. The founding rates of these groups indicate a steady diffusion of new groups throughout the expansive phase of mobilisation, peaking in April before slowing down (see Figure 1).

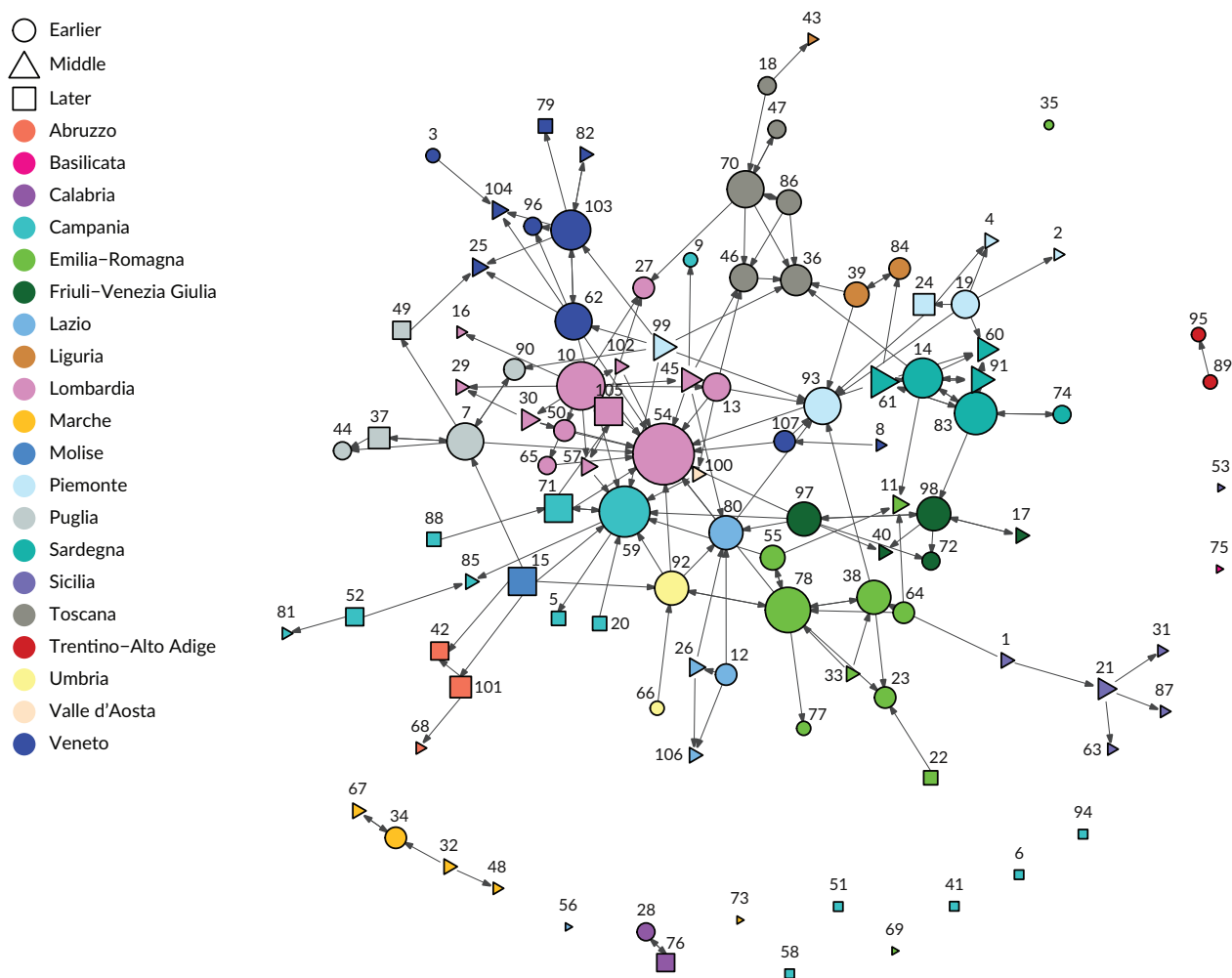


Figure 1. Alliance network by region (colour), total degree (size), and foundation group (shape).

The network structure features a large, well-connected main component, alongside eleven isolates and three smaller components. Network density is low, $\approx 2\%$ of possible ties (see Table 2). However, this low density must be interpreted considering the national scale of the network: despite sparseness, it shows active networking among geographically dispersed groups.

Centralization is low overall, suggesting the network is not dominated by a few central nodes. However, there is a notable difference between in-degree and out-degree centralization: incoming ties concentrate more than outgoing ties. The coefficients of variation for in-degree and out-degree further confirm that the network is more homogeneous in terms of outgoing ties than incoming ties. These results highlight the presence of

Table 2. Whole network level descriptives.

Size	107
Density	0.016
Total degree centralization	0.065
Indegree centralization	0.145
Outdegree centralization	0.098
Reciprocity	0.236

influential nodes, with Milan-LG ($n = 54$) and Naples-LG ($n = 59$) emerging among the most central. Thus, the network is functionally organized around the coordination roles played by LGs hosting the meetings.

Building on this overview, the second step of the analysis applies inferential modelling to test the propositions derived from the theoretical framework. This step shows how mechanisms like framing homophily and foci-of-activity shape alliance formation.

Model 0 (see Table 3) concerns the estimation of the self-organising structure of the alliances network, specifically the endogenous effects shaping network configurations. The arc effect indicates the baseline propensity for tie formation, and it is usually not interpreted. The significant effects are those of reciprocity and transitivity. Reciprocity, positive and significant, indicates, on average and among the relevant node pairs, a positive propensity to form reciprocated ties. The positive triangulation effect (AT-T) and the negative cyclic closure effect (AT-C) suggest the presence of an informal hierarchical structure: within a triad, one actor becomes the common ally while the other two remain unconnected.

Table 3. Parameters estimation for Model 0 univariate ERGM.

Effects	Model 0
	est. (s.e.)
Arc	-5.62*** (0.17)
Reciprocity	6.35*** (0.33)
AinS	-0.20 (0.36)
AoutS	0.32 (0.37)
AT-T	1.45*** (0.26)
AT-C	-0.73** (0.26)
AIC	1,626
BIC	1,679

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

5.1. Framing Homophily

Model 1 tests whether the CAFs from the Milan meeting activated framing homophily. As reported in Table 4, the positive and significant match effect associated with the Milan meeting CAFs supports the Proposition: on average, FFF-LGs were more likely to ally with others expressing the same CAF. To further assess the presence of framing homophily, Model 3 considers the CAFs elaborated during the Naples meeting. Here too, the match effect is positive and significant (see Table 5), providing additional support for Proposition 1. Taken together, these findings suggest that, in both meetings, the articulation of the same CAF by two FFF-LGs increased their propensity to become allies.

Table 4. Parameters estimation for Models 1 and 2 bivariate ERGM based on FFF-LG CAFs in Milan.

[Attr]		Effects	Model 1 est. (s.e.)	Model 2 est. (s.e.)
		Arc	-6.63*** (0.34)	-6.76*** (0.27)
		Reciprocity	6.01*** (0.40)	5.59*** (0.35)
		AinS	0.58 (0.46)	0.13 (0.41)
		AoutS	-0.07 (0.26)	0.34 (0.42)
		AT-T	0.91*** (0.26)	1.12*** (0.26)
		AT-C	-0.74** (0.26)	-0.96*** (0.25)
Region	Region	Match	2.25*** (0.16)	2.24*** (0.16)
Population size	Population size	Difference	0.49*** (0.11)	0.52*** (0.09)
Founding group	Earlier	Sender	0.15 (0.23)	0.15 (0.23)
		Receiver	0.81** (0.25)	0.80*** (0.24)
	Later	Sender	-0.14 (0.38)	-0.07 (0.38)
		Receiver	0.00 (0.41)	-0.21 (0.44)
Milan CAFs	Glocal reformist	Sender	0.63 (0.39)	
		Receiver	-0.66 (0.37)	
	National reformist	Sender	0.75 (0.48)	
		Receiver	-0.47 (0.48)	

Table 4. (Cont.) Parameters estimation for Models 1 and 2 bivariate ERGM based on FFF-LG CAFs in Milan.

[Attr]	Effects	Model 1	Model 2
Global rejectionist	Sender	1.08* (0.55)	
	Receiver	-0.94 (0.58)	
Glocal rejectionist	Sender	0.22 (0.36)	
	Receiver	-0.09 (0.33)	
Local rejectionist	Sender	1.75*** (0.49)	
	Receiver	-2.10** (0.65)	
Lifestyle change	Sender	1.19** (0.41)	
	Receiver	-2.22*** (0.48)	
Milan CAFs	Match	0.32* (0.13)	
Rejectionist	Sender		0.08 (0.24)
	Receiver		0.38 (0.23)
	Match		0.32** (0.12)
Not present	Sender	0.27 (0.44)	-0.40 (0.35)
	Receiver	-0.79 (0.43)	0.09 (0.35)
AIC		1,193	1,218
BIC		1,391	1,342

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

To further unravel the content dimension of the CAFs, Proposition 2 examines the role of opposing orientations in alliance formation. This proposition looks more closely at the effect of the reformist–rejectionist CAFs—whether change is pursued through reformist demands or through the total rejection of capitalism. In Models 2 and 3, the homophily effect is captured by the rejectionist match effects (see Tables 4 and 5, respectively). The positive and significant estimates in both models support the proposition.

Table 5. Parameters estimation for Models 3 and 4 bivariate ERGM based on FFF-LG CAFs in Naples.

[Attr]	Effects	Model 3	Model 4
Arc		est. (s.e.)	est. (s.e.)
		-6.47*** (0.31)	-6.92*** (0.30)

Table 5. (Cont.) Parameters estimation for Models 3 and 4 bivariate ERGM based on FFF-LG CAFs in Naples.

[Attr]			Effects	Model 3	Model 4
			Reciprocity	5.77*** (0.37)	5.60*** (0.36)
			AinS	0.46 (0.44)	0.36 (0.43)
			AoutS	0.15 (0.43)	0.12 (0.42)
			AT-T	0.99*** (0.26)	1.03*** (0.26)
			AT-C	-0.85*** (0.26)	-0.88*** (0.25)
Region	Region		Match	2.33*** (0.16)	2.37*** (0.16)
Population size	Population size	Difference		0.32** (0.12)	0.34*** (0.10)
Founding group	Earlier	Sender		0.13 (0.24)	0.22 (0.23)
		Receiver		0.85** (0.26)	0.70** (0.24)
	Later	Sender		-0.42 (0.35)	-0.26 (0.33)
		Receiver		-0.25 (0.36)	-0.26 (0.36)
Naples CAFs	Global reformist	Sender		0.07 (0.53)	
		Receiver		0.06 (0.50)	
	National reformist	Sender		-0.16 (0.34)	
		Receiver		0.63 (0.33)	
	Local reformist	Sender		0.83* (0.40)	
		Receiver		-0.02 (0.42)	
	Global rejectionist	Sender		0.37 (0.38)	
		Receiver		-0.57 (0.40)	
	Glocal rejectionist	Sender		0.03 (0.42)	
		Receiver		-0.34 (0.43)	
	Local rejectionist	Sender		-0.43 (0.64)	
		Receiver		-0.00 (0.60)	

Table 5. (Cont.) Parameters estimation for Models 3 and 4 bivariate ERGM based on FFF-LG CAFs in Naples.

[Attr]	Effects	Model 3	Model 4
Naples CAFs	Match	0.29* (0.14)	
Rejectionist	Sender		-0.14 (0.27)
	Receiver		0.72** (0.27)
	Match		0.43*** (0.12)
Not present	Sender	0.14 (0.32)	0.05 (0.29)
	Receiver	-0.83** (0.33)	-0.30 (0.31)
AIC		1,205	1,190
BIC		1,403	1,314

Notes: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

These results are further analysed through an estimation of tie propensities for each group. They are calculated by adding the arc effect estimate and the attributes' effects, depending on whether a node sends or receives ties. Tables 6 and 7 report the propensities, which result in negative values due to the arc effect's negative estimates in Model 2 and 4, respectively. Looking at Table 6, the homophily mechanism is slightly stronger for the Milan rejectionist LGs than for the reformists: reformists display more similar propensities to send ties to other LGs compared to rejectionists. Accordingly, by favouring alliances based on similarities, rejectionists display a stronger identification in alliance building.

Table 6. Estimation of tie propensity based on FFF-LG CAFs in Milan.

		Receiver		
		Reformist	Rejectionist	Not present
Sender	Reformist	-6.76	-6.38	-6.66
	Rejectionist	-6.68	-5.98	-6.58
	Not present	-7.15	-6.77	-7.06

The differences suggest the presence of two distinct logics driving alliance formation: a logic of selection and a logic of inclusion. By preferring alliances with groups promoting similar orientations in CAFs, rejectionist LGs negotiate a sense of belonging rooted in a system of ideas with defined and closed boundaries (logic of selection). In contrast, reformist LGs prefer directing part of their relational exchanges toward groups holding opposing orientations, showing intent to overcome framing differences (logic of inclusion).

The co-presence of these two logics in alliance formation is further assessed through the framing echoes observed during the Naples meeting (see Table 7). The propensities are consistent with the interpretation of the two logics. This points to a polarization among the LGs, especially considering the opposing orientations: Reformist LGs articulated a set of demands for an ecological transition, while rejectionist LGs embraced blockades as a preferred tactic and adopted a more explicitly anti-capitalist stance.

Table 7. Estimation of tie propensity based on FFF-LG CAFs in Naples.

		Receiver		
		Reformist	Rejectionist	Not present
Sender	Reformist	−6.92	−6.19	−7.21
	Rejectionist	−7.06	−6.49	−7.36
	Not present	−6.86	−6.14	−7.16

Focusing on differences in propensities, although the reformists' preference for dissimilar others becomes more pronounced compared to the Milan meeting framing, the preference shown by the rejectionists is sharper. Consequently, the presence of the two logics persists when modelling the network through the Naples meeting's CAFs. Rejectionists further close their ranks: they prefer organizing with their peers and characterize the mobilisation as part of a wider conflict that transcends national borders. Reformists, on the other hand, show greater tolerance of framing differences in forming alliances. This tolerance, together with a preference for similar others, as reported in Model 4, suggests greater openness in ongoing negotiations and an instrumental approach to alliance formation. Observing the homophily mechanism at two different moments highlights its strengthening role in the association between alliances and framing.

5.2. Foci-of-activity

Beyond framing affinity, spatial and temporal co-presence mattered. Including meeting attendance tests the foci-of-activity mechanism (Proposition 3). In Model 4 (see Table 5), the negative and significant receiving effect suggests that, on average, groups that did not participate in the Naples meeting were less likely to receive alliance ties compared to those that did attend. This finding supports the presence of a foci-of-activity mechanism: by attending the meeting, FFF-LGs increased their opportunities for direct interaction, which in turn enhanced the likelihood of transforming these interactions into more durable relationships and being perceived as allies. Conversely, non-attending LGs were less likely to be seen as allies, confirming that shared participation in key events shapes alliance dynamics.

5.3. Framing Heterogeneity

Building on the theoretical expectation that mobilisation's expansion phase features framing heterogeneity and disputes (Proposition 4), the analysis delves into the divergent diagnostic and prognostic tasks of the CAFs identified with the qualitative frame analysis.

During the meeting in Milan, a framing dispute concerning the proposed solutions created a divide between reformist and rejectionist orientations, with institutional action on one side and protest action on the other. The glocal reformist CAF frames climate change primarily as an environmental issue. By framing the problem as the destruction of the planet and local territories, the CAF identifies implications occurring simultaneously at both global and local levels. Its prognosis focuses on three main elements: a persuasion strategy aimed at raising awareness among citizens to promote lifestyle change; the establishment of a roundtable with political institutions; and the development of scientifically grounded proposals:

Table 8. Relative frequency distribution of Milan CAFs and Naples CAFs.

Milan CAFs	%	Naples CAFs	%
Global climate justice	11.21%	Global climate justice	18.69%
Glocal reformist	16.82%	Global reformist	4.67%
National reformist	6.54%	Local reformist	6.54%
Global rejectionist	3.74%	National reformist	15.89%
Glocal rejectionist	21.50%	Global rejectionist	10.28%
Local rejectionist	4.67%	Glocal rejectionist	12.15%
Lifestyle change	12.15%	Local rejectionist	3.74%
NA/not present	23.36%	NA/not present	28.04%
Total (N)	100.00% (107)	Total (N)	100.00% (107)

Reliance on science, on experts, we want what they study to be disseminated as widely as possible.... We believe that only with a strong awareness of citizens can we expect a change in policy choices at all institutional levels.... We must ask for a dialogue with the institutions and that they make possible a more sustainable model of life, a greater efficiency of services and that they enforce those written laws precisely to protect the territory. (Milan Meeting Glocal Reformist CAF)

Conversely, the Glocal Rejectionist CAF traces climate change to the global capitalist system, thus reframing it as not merely environmental but also economic and social. It further highlights a territorially specific and critical situation: large infrastructure projects are both environmental and social problems. Blame is explicitly assigned to private corporations, most notably ENI in Italy, alongside global political institutions. Its prognosis envisages systemic transformation, with dismantling capitalism as central to addressing climate change. This CAF further stresses the strategic alliances with LULU mobilisations:

It is only the effect of an economic system that is killing us today and that in recent years has had as its sole objective the depletion of environmental resources and their excessive use.... As it happens, in so many parts of the world, there are multinationals that circulate billions, millions of dollars on the extraction of fossil fuels and on the mistreatment of the territory. This mistreatment is taking place by these multinationals such as ENI,...that exploit natural and human resources against ethical and moral principles.... We are not here to create discussion tables with politicians, with those who do not listen to us and with those who have never listened to us.... There are many committees and associations that for years, have been fighting for the defence and protection of the territory from large infrastructures. In my opinion, this FFF movement must, and must cooperate with these kinds of associations and committees. (Milan Meeting Glocal Rejectionist CAF)

Additionally, the Global Climate Justice and Lifestyle Change CAFs were consistently present during the meeting (see Table 8). Their prognosis was close to that of the initial universalistic CAF of the transnational mobilisation, emphasizing demands for politicians to “follow the science” to achieve technical goals, alongside the necessity of individual actions (Svensson & Wahlström, 2023).

Six months later, in Naples, framing changed (see Table 8). While the division between reformist and rejectionist CAFs persisted, the territorial differentiation disappeared. The national reformist CAF gained a more prominent position:

It is now up to us how to relate to those [the political institutions] who have the power to change things so that the change is as fast as possible. At the national level, we call for the abolition of environmental subsidies and the displacement of those funds to finance ecological transition and scientific research aimed at a change in development patterns.... We want to cut subsidies for fossil fuels, we want the pollution tax to fall on those who produce and not on those who consume, we want the net decrease of CO₂ by 2030. (Naples Meeting National Reformist CAF)

It represented a downward shift in the scale of its prognosis: demands were now directed at national political institutions. This downward scale shift was counterbalanced by the continued relevance of the Global Climate Justice CAF.

This framing transformation reflects the expansive phase of mobilisation. The initial universalist nature of the CAF at the onset of mobilisation facilitated—if not necessitated—a progressive narrowing and specification of claims. For example, the national reformist CAF specifically targeted national institutions, demanding national regulations and policies (e.g., reduction of environmental subsidies). This dynamic appears particular to the reformist framing, whereas the rejectionist framing remained unaltered:

The territory...brings with it and lives many contradictions that we can find everywhere: large infrastructures, incineration plants, concreting... And in general, the whole capitalist system that aims at profit rather than at the preservation of the territory... We can no longer act against climate change from a purely local and environmental perspective. The disputes we carry on in our territory are the same in many other cities. The current system permeates our lives, exploits our territories, our bodies, and destroys the environment. (Naples Meeting Glocal Rejectionist CAF)

While the presence of opposing CAFs during both meetings supports Proposition 4, the results of Models 1 and 3 (see Table 4 and Table 5) show how single CAFs affect alliance formation. The models investigate the effect of each CAF on the propensity to form ties, using the Global Climate Justice CAF as the reference category. Moreover, since the network is directed, it is possible to evaluate whether framing attributes shape the nodes' propensities to send or receive ties.

In Model 1, the groups adopting global and local rejectionist CAFs show, on average, a higher propensity to send ties—that is, a higher level of activity—compared to Global Climate Justice adopters. However, the activity level is not matched by a similar level of popularity (i.e., receiving ties), as the negative receiver effect for the local rejectionist CAF and the non-significant effect for the global rejectionist CAF indicate. The mismatch between activity and popularity is similarly observed for groups adopting a lifestyle change CAF (see Table 4). It suggests that the CAFs divergent from the initial universalist CAF—those focused on a local level with a rejectionist orientation or adopting an individualized framing—were less likely to receive ties. These CAFs—either too localized or overly individual—were perceived as less compelling for forming alliances within the mobilisation. These differences, however, do not persist when accounting for the framing articulated during the meeting in Naples. The results of Model 4 show that only local rejectionist CAF groups display a positive

and significant activity level compared to the Global Climate Justice CAF. It suggests that, beyond the overall match effect, CAFs did not influence the FFF-LGs' activity and popularity levels.

5.4. Spatial and Temporal Effects

Spatial characterization is key to facilitating alliances among FFF-LGs within the same administrative region. This is confirmed by the consistently positive and significant region match effect estimates across all models. This finding aligns with the expectations laid out in Proposition 5: it highlights how FFF-LGs tend to form stronger connections with others mobilizing in the same administrative area, indicating coordination shaped by geographical proximity.

Lastly, Proposition 6 hypothesizes that the longevity of FFF-LGs influences their propensity to establish alliances. Across all models (see Table 4 and Table 5), LGs founded during the early phase of the mobilisation, on average, and compared to those founded in the middle period, receive more ties. The positive receiver effect indicates the presence of a popularity effect: receiving, on average, more ties, these LGs are seen as influential in coordination. This finding provides empirical support for the theoretical idea that group longevity is indeed a resource enabling groups to accumulate relational capital. This accumulated relational capital lets earlier FFF-LGs occupy a more prominent position in the network structure.

6. Discussion

The literature has widely recognized that the articulation of a shared framing is crucial for coalition building (Van Dyke & Amos, 2017; Van Dyke & McCammon, 2010). While shared CAFs foster unity, framing disputes can just as easily undermine cohesion and lead to fragmentation. Comparison with other climate mobilisations reinforces this interpretation. In the British case analysed by Saunders (2012), the radical-reformist divide weakened intra-coalitional relations, culminating in what the author terms a reformist drift: a gradual marginalization of radical demands in favour of a more moderate agenda, ultimately narrowing internal plurality and dissolving the coalition. A similar dynamic emerges in Marquardt's (2020) analysis of FFF in Germany, where the coexistence of moderate and radical positions—both in repertoires and future imaginaries—had a fragmenting effect. In that case, the radical faction opted for an autonomous trajectory, leading to a coalitional split rather than an internal transformation.

By contrast, the Italian case followed a different trajectory. Although opposing orientations—reformist and rejectionist, based on their stance toward political institutions—were present, neither fragmentation nor dissolution occurred. On the contrary, framing differences were negotiated to preserve a broad, active coalition capable of sustaining mass mobilisation.

Two factors help explain this outcome. First, the presence of alliances cutting across opposing CAFs served as connective tissue between orientations. Second, the shared identification of a minimal common goal—the continuation of the mobilisation itself—fostered a pragmatic alliance-building (Croteau & Hicks, 2003). However, rather than a purely instrumental compromise, the propensity to collaborate suggests the coexistence of two parallel processes of identification. These are the logic of selection and the logic of inclusion, each unfolding on its own terms within the coalition. The Italian case recalls the bridging effect of discursive homophily identified by Di Gregorio (2012), but it highlights the central role of meetings as

moments of negotiation. During meetings, framing negotiation mitigated the fragmenting effect of opposing and heterogeneous CAFs on alliance formation.

Initial evidence supports this interpretation, showing that alliances persisted in later phases of the mobilisation. Over the years, this has been expressed through the co-presence of both protest and institutional actions and the ongoing organisation of national assemblies (Zamponi et al., 2024). Moreover, the observed variation in tie propensities within and between reformist and rejectionist groupings echoes dynamics identified in the 1990s environmental networks. During mass mobilisations, collective actors with different environmental CAFs tend to overcome divergences to prevent fragmentation from jeopardizing the endurance of the mobilisation (Diani & Forno, 2007).

In this respect, the comparison with Saunders also highlights the role of meetings—such as national assemblies and climate camps—as foci-of-activity that do not always yield uniform outcomes. While in the UK climate camps fostered confrontation and rupture, in the Italian case, they played a mediating and coordinating role, contributing to the symbolic cohesion and organisational endurance. Together, these elements explain diverging coalition trajectories. While in the UK and German cases, opposing CAFs acted as a centrifugal force, in the Italian case, they were elaborated and negotiated as a resource, sustaining both the stability and plurality of the climate mobilisation.

A final point concerns continuities with broader trends in the Italian environmental milieu. The lifestyle issue, central in the early 2000s (Graziano & Forno, 2012), re-emerged at this wave's onset but faded as politicisation advanced. Other elements—such as the focus on large infrastructure projects, alliances with LULU movements, the use of blockades, and the anti-capitalist position of rejectionist FFF-LGs—show continuity with previous mobilisations (Andretta & Imperatore, 2023; della Porta & Piazza, 2008; Imperatore, 2023). The coalition-based character of the mobilisation (Wahlström et al., 2024a) may also reflect a spillover effect or influence of pre-existing organisations. Future research could explore FFF-LGs' trajectories across local contexts to assess whether pre-existing ties or perceived political opportunities, alongside evolving CAFs, have contributed to coalition endurance.

7. Conclusion

This article has examined the relationship between framing and alliance formation, a longstanding but contested topic in social movement studies (Staggenborg, 2010; Van Dyke & Amos, 2017). To advance this debate, it builds on a relational mechanism framework—homophily and foci-of-activity—and adopts a mixed-method design that combines qualitative frame analysis (Lindekilde, 2014) and social selection ERGMs (Robins & Daraganova, 2013).

The analysis shows how shared CAFs facilitate alliances among collective actors, confirming the relevance of framing homophily. At the same time, the Italian FFF coalition illustrates how framing heterogeneity—particularly the reformist-rejectionist divide rooted in differing orientations toward institutions—does not necessarily fragment social networks.

Rather, the coexistence of a logic of inclusion (more open, reformist) and a logic of selection (more bounded, rejectionist) shows that distinct patterns can coexist within the same network. Despite these differences,

the coalition remained unified throughout the mobilisation wave (Zamponi et al., 2024). This challenge accounts for portraying alliances under framing disputes as merely instrumental (Benford, 2022; Van Dyke & Amos, 2017). Instead, it highlights boundary negotiation behind the scenes of protest events—particularly in meetings, which activated the foci-of-activity mechanism by fostering trust and cooperation (Haug, 2013; Mische, 2011).

These insights underscore the inherently political nature of environmental networks: not neutral structures, but the outcomes of political processes through which grassroots actors negotiate their boundaries and orientations. By tracing how reformist and rejectionist orientations drive contrasting coalition logics, and how meetings facilitate (or fail to facilitate) their negotiation, this article reveals the political stakes embedded in network structures. It bridges relational network approaches with the political analysis of grassroots contention. In this sense, the Italian FFF case illustrates how environmental networks not only embody but also reproduce broader struggles over institutional engagement and systemic change.

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Supplementary Material

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References

- Andretta, M., & Imperatore, P. (2023). Le trasformazioni del movimento ambientalista in Italia tra istituzionalizzazione e conflitto. *Polis*, 37(1), 67–98. <https://doi.org/10.1424/106954>
- Asara, V. (2022). Environmental movements. In L. Pellizzoni, E. Leonardi, & V. Asara (Eds.), *Handbook of critical environmental politics* (1st ed., pp. 483–504). Edward Elgar Publishing. <https://doi.org/10.4337/9781839100673.00045>
- Benford, R. D. (1997). An insider's critique of the social movement framing perspective. *Sociological Inquiry*, 67(4), 409–430. <https://doi.org/10.1111/j.1475-682X.1997.tb00445.x>
- Benford, R. D. (2022). Frame disputes. In D. A. Snow, D. della Porta, B. Klandermans, & D. McAdam (Eds.), *The Wiley-Blackwell Encyclopedia of social and political movements* (2nd ed., pp. 1–3). Wiley. <https://doi.org/10.1002/9780470674871.wbespm092>
- Benford, R. D., & Snow, D. A. (2000). Framing processes and social movements: An overview and assessment. *Annual Review of Sociology*, 26(1), 611–639. <https://doi.org/10.1146/annurev.soc.26.1.611>

- Biancalana, C., & Ladini, R. (2024). *Emergenza lenta: La questione climatica in Italia tra politica, media e società* (1st ed.). Fondazione Feltrinelli. <https://fondazionefeltrinelli.it/scopri/emergenza-lenta>
- Borgatti, S. P., Johnson, J. C., Everett, M. G., & Agneessens, F. (2022). *Analyzing social networks using R*. Sage. <https://us.sagepub.com/en-us/nam/analyzing-social-networks-using-r/book271675>
- Borgatti, S. P., Mehra, A., Brass, D. J., & Labianca, G. (2009). Network analysis in the social sciences. *Science*, 323, 892–895. <https://doi.org/10.1126/science.1165821>
- Cardano, M. (2011). *La ricerca qualitativa*. Il Mulino. <https://www.mulino.it/isbn/9788815149800>
- Caruso, L., Giorgi, A., Mattoni, A., & Piazza, G. (2010). Prefazione. Introduzione. Modi e Tempi dell'Onda. In L. Caruso, A. Giorgi, A. Mattoni, & G. Piazza (Eds.), *Alla ricerca dell'onda: I nuovi conflitti nell'istruzione superiore* (1st ed., pp. 17–45). Franco Angeli. <https://www.francoangeli.it/Libro/Alla-ricerca-dell%27Onda.?Id=18425>
- Crossley, N. (2010a). *Towards relational sociology*. Routledge. <https://doi.org/10.4324/9780203887066>
- Crossley, N. (2010b). The social world of the network. Combining qualitative and quantitative elements in social network analysis. *Sociologica*, 4(1), 1–34. <https://www.rivisteweb.it/doi/10.2383/32049>
- Croteau, D., & Hicks, L. (2003). Coalition framing and the challenge of a consonant frame pyramid: The case of a collaborative response to homelessness. *Social Problems*, 50(2), 251–272. <https://doi.org/10.1525/sp.2003.50.2.251>
- de Moor, J., De Vydt, M., Uba, K., & Wahlström, M. (2021). New kids on the block: Taking stock of the recent cycle of climate activism. *Social Movement Studies*, 20(5), 619–625. <https://doi.org/10.1080/14742837.2020.1836617>
- della Porta, D., & Diani, M. (2004). *Movimenti senza protesta? L'ambientalismo in Italia*. Il Mulino. https://www.mulino.it/isbn/9788815099433?forcedLocale=it&fbrefresh=CAN_BE_ANYTHING
- della Porta, D., & Piazza, G. (2008). *Voices of the valley, voices of the straits: How protest creates communities*. Berghahn Books. <https://doi.org/10.3167/9781845455156>
- della Porta, D., Piazza, G., Bertuzzi, N., & Sorci, G. (2019). LULUs movements in multilevel struggles: A comparison of four movements in Italy. *Rivista Italiana di Politiche Pubbliche*, 14(3), 477–513. <https://doi.org/10.1483/95213>
- Della Seta, R. (2000). *La difesa dell'ambiente in Italia: Storia e cultural del movimento ecologista* (1st ed.). Franco Angeli. <https://www.francoangeli.it/Libro/La-difesa-dell%27ambiente-in-Italia?Id=8064>
- Di Gregorio, M. (2012). Networking in environmental movement organisation coalitions: Interest, values or discourse? *Environmental Politics*, 21(1), 1–25. <https://doi.org/10.1080/09644016.2011.643366>
- Diani, M. (1990). The network structure of the Italian ecology movement. *Social Science Information*, 29(1), 5–31. <https://doi.org/10.1177/053901890029001001>
- Diani, M. (1992). Analysing social movement networks. In M. Diani & R. Eyerman (Eds.), *Studying collective action* (1st ed., pp. 107–135). Sage.
- Diani, M. (1995). *Green networks. A structural analysis of the Italian environmental movement*. Edinburgh University Press.
- Diani, M. (2015). *The cement of civil society: Studying networks in localities*. Cambridge University Press. <https://doi.org/10.1017/CBO9781316163733>
- Diani, M., & Bison, I. (2004). Organisations, coalitions, and movements. *Theory and Society*, 33, 281–309. <https://doi.org/10.1023/B:RYSO.0000038610.00045.07>
- Diani, M., & Forno, F. (2007). Italy. In C. Rootes (Ed.), *Environmental protest in Western Europe* (1st ed., pp. 135–165). Oxford University Press. <https://doi.org/10.1093/0199252068.003.0006>
- Diani, M., & Mische, A. (2015). Network approaches and social movements. In D. della Porta, & M. Diani (Eds.),

- The Oxford handbook of social movements* (1st ed., pp. 306–325). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199678402.001.0001>
- Duxbury, S. W. (2018). Diagnosing multicollinearity in exponential random graph models. *Sociological Methods & Research*, 50(2), 491–530. <https://doi.org/10.1177/0049124118782543>
- Eggert, N., & Pilati, K. (2014). Networks and political engagement of migrant organisations in five European cities. *European Journal of Political Research*, 53(4), 858–875. <https://doi.org/10.1111/1475-6765.12057>
- Feld, S. L. (1981). The focused organization of social ties. *American Journal of Sociology*, 86(5), 1015–1035. <https://doi.org/10.1086/227352>
- Feld, S. L., & Grofman, B. (2011). Homophily and the focused organization of ties. In: P. Hedström, & P. Bearman (Eds.), *The Oxford Handbook of analytical sociology* (1st ed., pp. 521–543). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199215362.013.22>
- Forno, F. (2006). Eventi, cicli di protesta e conflitti tecnologici. *Quaderni di Sociologia*, 41, 43–65. <https://doi.org/10.4000/qds.1026>
- Fuhse, J. A., & Gondal, N. (2024). Networks from culture: Mechanisms of tie-formation follow institutionalized rules in social fields. *Social Networks*, 77, 43–54. <https://doi.org/10.1016/j.socnet.2021.12.005>
- Gerhards, J., & Rucht, D. (1992). Mesomobilisation: Organizing and framing in two protest campaigns in West Germany. *American Journal of Sociology*, 98(3), 555–596. <https://doi.org/10.1086/230049>
- Gobo, G. (2008). *Doing ethnography*. Sage. <https://doi.org/10.4135/9780857028976>
- Graziano, P. R., & Forno, F. (2012). Political consumerism and new forms of political participation: The Gruppi di Acquisto Solidale in Italy. *The ANNALS of the American Academy of Political and Social Science*, 644(1), 121–133. <https://doi.org/10.1177/0002716212454839>
- Hadden, J. (2015). *Networks in contention*. Cambridge University Press. <https://doi.org/10.1017/CBO9781316105542>
- Handcock, M. S., Hunter, D. R., Butts, C. T., Goodreau, S. M., Krivitsky, P. N., & Morris, M. (2025). *ergm: Fit, simulate and diagnose exponential-family models for networks*. The Statnet Project. <https://CRAN.R-project.org/package=ergm>
- Haug, C. (2013). Organizing spaces: Meeting arenas as a social movement infrastructure between organisation, network, and institution. *Organisation Studies*, 34(5/6), 705–732. <https://doi.org/10.1177/0170840613479232>
- Hollstein, B. (2023). Qualitative and mixed methods. In J. McLevey, J. Scott, & P. J. Carrington (Eds.), *Sage handbook of social network analysis* (2nd ed., pp. 562–574). Sage.
- Hunter, D. R., Handcock, M. S., Butts, C. T., Goodreau, S. M., & Morris, M. (2008). “ergm: A package to fit, simulate and diagnose exponential-family models for networks.” *Journal of Statistical Software*, 24(3), 1–29. <https://doi.org/10.18637/jss.v024.i03>
- Imperatore, P. (2023). *Territori in lotta. Capitalismo globale e giustizia ambientale nell'era della crisi climatica*. Meltemi. <https://www.meltemieditore.it/catalogo/territori-in-lotta>
- Koopmans, R. (2004). Protest in time and space: The evolution of waves of contention. In D. A. Snow, S. A. Soule, & H. Kriesi (Eds.), *The Blackwell Companion to social movements* (1st ed, pp. 19–46). Blackwell Publishing. <https://doi.org/10.1002/9780470999103>
- Koskinen, J., & Daraganova, G. (2013). Exponential random graph model fundamentals. In J. Koskinen, G. Daraganova, D. Lusher, & G. Robins (Eds.), *Exponential random graph models for social networks: Theory, methods and applications* (1st ed., pp. 46–76). Cambridge University Press. <https://doi.org/10.1017/CBO9780511894701.008>
- Koskinen, J., Daraganova, G., Lusher, D., & Robins, G. (Eds.). (2013). *Exponential random graph models for social*

- networks: Theory, methods and applications* (1st ed.). Cambridge University Press. <https://doi.org/10.1017/CBO9780511894701>
- Krause, R. W., & Huisman, M. (2023). Qualitative and mixed methods. In J. McLevey, J. Scott, & P. J. Carrington (Eds.), *The Sage handbook of social network analysis* (2nd ed., pp. 599–609). Sage. <https://us.sagepub.com/en-us/nam/the-sage-handbook-of-social-network-analysis/book277881>
- Krinsky, J., & Crossley, N. (2015). Social movements and social networks: Introduction. In N. Crossley & J. Krinsky (Eds.), *Social networks and social movements* (1st ed., pp. 1–21). Routledge.
- Krivitsky, P. N., Hunter, D. R., Morris, M., & Klumb, C. (2023). “ergm 4: New features for analyzing exponential-family random graph models.” *Journal of Statistical Software*, 105(6), 1–44. <https://www.jstatsoft.org/article/view/v105i06/4424>
- Laumann, E. O., Marsden, P. V., & Prensky, D. (1989). The boundaries specification problem in network analysis. In L. C. Freeman, D. R. White, & A. K. Romney (Eds.), *Research methods in social network analysis* (1st ed., pp. 61–87). George Mason University Press.
- Lindekilde, L. (2014). Discourse and frame analysis: In-depth analysis of qualitative data in social movement research. In D. della Porta (Ed.), *Methodological practices in social movement research* (1st ed., pp. 195–227). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780198719571.003.0009>
- Lo Piccolo, A., & Stagni, F. (2025). Relational outcomes: In search of a definition. *American Behavioral Scientist*. Advance online publication. <https://doi.org/10.1177/00027642251357702>
- Lusher, D., & Robins, G. (2013). Formation of social network structure. In J. Koskinen, G. Daraganova, D. Lusher, & G. Robins (Eds.), *Exponential random graph models for social networks: Theory, methods and applications* (1st ed., pp. 16–28). Cambridge University Press. <https://doi.org/10.1017/CBO9780511894701.004>
- Lusher, D., Wang, P., Brennecke, J., Brailly, J., Faye, M., & Gallagher, C. (2021). Advances in exponential random graph models. In R. Light & J. Moody (Eds.), *The Oxford handbook of social networks* (1st ed., pp. 234–253). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190251765.013.18>
- Marquardt, J. (2020). Fridays for Future’s disruptive potential: An inconvenient youth between moderate and radical ideas. *Frontiers in Communication*, 5(48), 1–18. <https://doi.org/10.3389/fcomm.2020.00048>
- McCammon, H. J., & Van Dyke, N. (2010). Applying qualitative comparative analysis to empirical studies of social movements coalition formation. In N. Van Dyke, & H. J. McCammon (Eds.), *Strategic alliances: Coalition building and social movements* (1st ed., pp. 292–315). University of Minnesota Press. <https://www.jstor.org/stable/10.5749/j.cttttdjf.17>
- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27(1), 415–444. <https://doi.org/10.1146/annurev.soc.27.1.415>
- Melucci, A. (1996). *Challenging codes: Collective action in the information age*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511520891>
- Minkoff, D., & McCarthy, J. (2005). Reinvigorating the study of organisational processes in social movements. *Mobilisation: An International Quarterly*, 10(2), 289–308. <https://doi.org/10.17813/mai.10.2.rp8h757h42752w76>
- Mische, A. (2008). *Partisan publics: Communication and contention across Brazilian youth activist networks*. Princeton University Press. <http://www.jstor.org/stable/j.ctt2jc8c4>
- Mische, A. (2011). Relational sociology, culture, and agency. In P. J. Carrington & J. Scott (Eds.), *The Sage handbook of social network analysis* (1st ed., pp. 80–97). Sage.
- Oliver, P., Marwell, G., & Teixeira, R. (1985). A theory of the critical mass. I. Interdependence, group heterogeneity, and the production of collective action. *American Journal of Sociology*, 91(3), 522–556. <https://doi.org/10.1086/228313>

- Parks, L. (2022). Framing environmental issues. In M. Grasso, & M. Giugni (Eds.), *The Routledge handbook of environmental movements* (1st ed., pp. 405–418). Routledge. <https://doi.org/10.4324/9780367855680>
- Robins, G., & Lusher, D. (2013). What are exponential random graph models? In J. Koskinen, G. Daraganova, D. Lusher, & G. Robins (Eds.), *Exponential random graph models for social networks: Theory, methods and applications* (1st ed., pp. 9–15). Cambridge University Press. <https://doi.org/10.1017/CBO9780511894701>
- Robins, G., & Daraganova, G. (2013). Social selection, dyadic covariates and geospatial effects. In J. Koskinen, G. Daraganova, D. Lusher, & G. Robins (Eds.), *Exponential random graph models for social networks: Theory, methods and applications* (1st ed., pp. 91–101). Cambridge University Press. <https://doi.org/10.1017/CBO9780511894701.010>
- Saunders, C. (2007). Using social network analysis to explore social movements: A relational approach. *Social Movement Studies*, 6(3), 227–243. <https://doi.org/10.1080/14742830701777769>
- Saunders, C. (2012). Reformism and radicalism in the climate camp in Britain: Benign coexistence, tensions and prospects for bridging. *Environmental Politics*, 21(5), 829–846. <https://doi.org/10.1080/09644016.2012.692937>
- Schlosberg, D. (2002). *Environmental justice and the new pluralism*. Oxford University Press.
- Staggenborg, S. (2010). Research on social movement coalitions. In N. Van Dyke, & H. J. McCammon (Eds.), *Strategic alliances: Coalition building and social movements* (1st ed., pp. 316–329). University of Minnesota Press. <https://www.jstor.org/stable/10.5749/j.cttttdjf.18>
- Svensson, A., & Wahlström, M. (2023). Climate change or what? Prognostic framing by Fridays for Future protesters. *Social Movement Studies*, 22(1), 1–22. <https://doi.org/10.1080/14742837.2021.1988913>
- Tomnyuk, V., Varavallo, G., Parisi, T., & Barbera, F. (2023). All shades of green: The anatomy of the Fridays for Future movement in Italy. *Sustainability*, 15(8), Article 13917. <https://doi.org/10.3390/su151813917>
- Uba, K. (in press). Fridays For Future: A new wave of global climate activism. In P. Almeida (Ed.), *The Oxford handbook of climate action*. Oxford Academic. <https://doi.org/10.1093/oxfordhb/9780197762097.013.0012>
- Van Dyke, N., & Amos, B. (2017). Social movement coalitions: Formation, longevity, and success. *Sociology Compass*, 11(7), 1–17. <https://doi.org/10.1111/soc4.12489>
- Van Dyke, N., & McCammon, H. J. (2010). Introduction: Social movement coalition formation. In N. Van Dyke, & H. J. McCammon (Eds.), *Strategic alliances: Coalition building and social movements* (1st ed., pp. xi–xxviii). University of Minnesota Press. <https://www.jstor.org/stable/10.5749/j.cttttdjf.4>
- Wahlström, M., Kocyba, P., De Vydt, M., de Moor, J., Adman, P., Balsiger, P., Buzogany, A., Della Porta, D., Doherty, B., Emilsson, K., Gaidyte, T., Giugni, M., Haunss, S., Holecz, V., Johansson, H., Kołczyńska, M., Lorenzini, J., Łukianow, M., Mikecz, D. . . . Zamponi, L. (2024a, September 25). *Surveys of participants in Fridays For Future climate protests on 15 March, 2019, in 13 European cities*. OSF. <https://doi.org/10.17605/OSF.IO/XCNZH>
- Wahlström, M., de Moor, J., Uba, K., Wennerhag, M., De Vydt, M. R. P., Almeida, P., Baukloh, A., Bertuzzi, N., Chironi, D., Churchill, B., Cisar, O., Collin, P., Nobel, T. C., Daniel, A., Davies, S., della Porta, D., Deutschman, A., Ellefsen, R., Emilsson, K. . . . Zamponi, L. (2024b, September 25). *Surveys of participants in Fridays For Future climate protests on 20-28 September, 2019, in 19 cities around the world*. OSF. <https://doi.org/10.17605/OSF.IO/ASRUW>
- Zamponi, L., Ferro, A., & Cugnata, G. (2024). Strikes, assemblies and blockades: The dynamics of repertoire change in grassroots climate action in Italy (2018–2023). *Italian Political Science*, 18(3), 257–293. <https://doi.org/10.69101/IPS.2023.18.3.5>

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Shifting Grounds of Collaboration in Changing Contexts: Evolving Environmental Networks in the Basque Country

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Abstract

Interorganizational collaboration is crucial for collective action and political activism, particularly in environmental advocacy. Social network analysis tools are increasingly used to study collaboration among civic and political actors outside traditional institutions. While the literature has examined multiple factors influencing collaboration, less attention has been paid to how their predictive power evolves over time in response to contextual political shifts. This article aims to fill this gap by exploring the impact of rapid political changes on collaborative relationships in collective action. Using data on interorganizational collaboration within the environmental collective action field in the Basque Country (Spain) between 2007 and 2017, we analyze how large-scale transformative events and cycles of contention moderate the influence of various predictors of collaborative ties. More specifically, we use statistical network analyses to examine the relative impact of seven determinants of event co-attendance across six yearly observations. Our findings indicate that during the last years of violent conflict, shared identification with Basque nationalism facilitated collaboration, while disagreements over ETA's armed struggle hindered it. However, in the post-conflict phase, ideological factors lost relevance, suggesting a shift from a model of “militant confrontation” to one of “pragmatic cooperation.” Nonetheless, pragmatic considerations did not completely replace ideological commitments as the main drivers of collaboration. Instead of a straightforward shift, this transition is characterized by the blurring of previous boundaries, not by the establishment of clearly defined new structuring factors. As a result, the collaboration network has become more pluralistic but also less predictable.

Keywords

collective action fields; cycles of contention; environmental activism; interorganizational collaboration; polarization; political context; social boundaries; social movement coalitions; social network analysis; transformative events

1. Introduction

Collaborative networks among organizations have long been recognized not only as key features of collective action processes but also as constitutive elements of social movements (Diani, 1992; Tilly & Tarrow, 2015). Interorganizational collaboration is a vital pillar of collective action and political advocacy, significantly influencing the endurance and eventual political success of these efforts. Unsurprisingly, coalition building has drawn increasing attention within the subfields of contentious politics and social movement studies (e.g., McCammon & Moon, 2015; Van Dyke & McCammon, 2010). Mapping patterns of interorganizational ties allows analysts to understand how diverse actors align, prioritize issues, and navigate ideological or strategic tensions.

Environmental movements have been a particularly fertile terrain for examining these dynamics. Whether the focus is on offline interaction (Di Gregorio, 2012; Diani, 1995a) or online communication networks (Ackland & O'Neil, 2011; Lusher & Ackland, 2011; Simpson, 2015), environmental collective action exemplifies the challenge of sustaining alliances across lines of ideological, organizational, and tactical divides. Addressing public issues not easily tied to specific social groups or interests, organizations face the challenge of mobilizing broad and heterogeneous constituencies and must construct and diffuse worldviews that transcend dominant societal cleavages—whether class-based, nationalist, or religious. Their trajectories, moreover, depend not only on activists' strategic choices but on shifting contextual conditions. Adopting this perspective, this article examines how transformations in the “contextual structure” (Rucht, 1996) interact with identity, interest, and interpersonal linkages to shape collaboration patterns in environmental activism. In doing so, we move beyond purely *dispositional* or *structural* explanations (Desmond, 2014) and consider the dynamic interplay between perceived organizational (in)compatibility and fluctuating contexts, contributing to recent calls to integrate network perspectives and temporality (Crossley & Diani, 2018). To this end, we present a new analytical framework that synthesizes insights from prior research on social movement coalitions and apply it to a dynamic empirical setting.

Empirically, we investigate how sudden changes in the political landscape alter the grounds on which collective actors promoting environmental demands collaborate with one another, building on earlier applications of network analytic techniques to environmentalism (Di Gregorio, 2012; Diani, 1995a; Lusher & Ackland, 2011; Saunders, 2013; Simpson, 2015). Our case is a longitudinal network study of interorganizational collaboration in the environmental collective action field (ECAF) in the Basque Country (Spain). We employ Quadratic Assignment Procedure (QAP) regression models to assess the relative salience of various determinants of co-attendance at environmental collective action events across six yearly observations from 2007 to 2017. This period encompasses two pivotal contextual changes: a downturn in the cycle of environmental contention with demobilization starting in 2009, and the end of a 40-year ethno-national armed conflict in 2011. Essentially, we observe a transition from a model characterized by “militant confrontation” to one defined by “pragmatic cooperation” (Ibarra & de la Peña, 2004). Over time, the weight of shared ideology-based identities diminished, while pragmatic and strategic interests took center stage.

These findings show that collaborative logics are contingent on broader sociopolitical shifts and that relational patterns evolve alongside political changes, albeit not always predictably. Rather than responding uniformly to shifting conditions, collaboration logics are reweighted over time as macro-political

transformations interact with organizational identities, issue agendas, and prior ties. We advance an interactive perspective on collective action networks, showing how different grounds for collaboration—ideological, pragmatic, interpersonal—gain or lose salience across changing contexts. In the Basque case, we find both continuity and transformation: enduring patterns of pragmatic cooperation persisted even as ideological boundaries were reconfigured after the end of the armed conflict. These results contribute to broader debates on the resilience and adaptability of (environmental) political networks, highlighting how political shifts recalibrate the grounds on which collaboration is built.

2. What Explains Collaboration Between Activist Groups?

In recent decades, a new area of research has focused on how and when collective actors establish different forms of collaboration or “coalitions” between them in pursuit of their demands. Viewing coalitions as instances where distinct activist groups agree to cooperate towards a shared goal (McCammon & Moon, 2015, p. 326), this developing subfield has identified multiple factors that facilitate or hinder collaboration among collective action organizations. To organize our literature review, we distinguish between relational (or dyadic) factors—i.e., properties of the relationship between two actors or entities—that act as facilitators or barriers towards collaboration between specific pairs of groups, and external contextual conditions that can either promote or hinder certain types of political collaboration at a given time and place.

2.1. Dyadic Incentives and Disincentives for Interorganizational Collaboration

The first strand of research examines the broad spectrum of factors that influence organizational decisions to collaborate with one another. Existing literature on social movement coalition-making (for reviews, see Brooker & Meyer, 2018; McCammon & Moon, 2015; Van Dyke & Amos, 2017; Van Dyke & McCammon, 2010) has identified various factors thought to facilitate or hinder collaboration between specific pairs of collective actors. These can be classified into three groups: (a) identity-based congruence; (b) pragmatic and instrumental incentives; and (c) interpersonal relationships. Although presented separately for clarity, these categories are, in practice, interrelated and often influence one another in complex ways.

Identity-based congruence refers to the degree of similarity between collective actors’ socio-political identities, understood as “broader representations of actors’ position in relation to other actors and to broader representations of social life than those associated with issue agendas” (Diani & Pilati, 2011, p. 266). These typically “relate more or less explicitly to broader societal cleavages and systems of meaning” (Diani, 1995a, p. 9). When organizational identities are congruent, solidarity and attribution of similarity are more likely to emerge between collective actors, increasing the likelihood of joint collective action. Conversely, dissimilarity between identities can feed animosity and prejudice, hampering collective action coordination (Saunders, 2008). A wide range of organizational identities can be relevant as solidarity-generating bonds influencing coalition formation, including membership in a specific social category (Tajfel, 1978), ideological identities (Diani & Pilati, 2011; Diani et al., 2018), or shared values and discourse (Di Gregorio, 2012). For instance, in the case of environmentalism, Saunders (2007b, 2013, pp. 31–35) distinguishes between four main ideological strands (conservationism, reformism, political ecology, and radical ecology) that generate collective (sub)identities and shape interorganizational relationships.

Pragmatic and instrumental incentives refer to perceived organizational similarities and differences that actors regard as potentially beneficial or detrimental to achieving their goals. For example, groups pursuing similar objectives often have a strong incentive to collaborate, even without identity-based bonds (Diani et al., 2010, p. 220). These pragmatic alliances can be viewed as “strategic transactions” (Tilly, 2005), based on a rational cost-benefit calculus aimed at maximizing the impact of collective action, usually in the short term. However, establishing and maintaining collaboration between groups is potentially “a costly business, requiring time and other material resources as well as the capability to come to terms with potential partners’ orientations, interests and even foes” (Diani, 1995a, pp. 101–102). Accordingly, it cannot be taken for granted, even when sharing common programmatic goals and demands. These investments and potential costs may be overcome by the presence of strong group solidarities grounded in a shared collective identity (see Diani, 1995a, p. 102, 2015) or by pragmatic structural facilitators (such as similar organizational structures or styles of organizing, or geographic proximity) that help reduce coordination burdens even in the absence of deep solidarity.

Finally, *interpersonal relationships* can also play a crucial role in facilitating or hindering collaboration between organizations. Interpersonal affinity between members triggers specific trust mechanisms able to sustain cooperation (Diani, 2023), while interpersonal antagonism and rivalry, especially among leaders (e.g., Tejerina et al., 1995, p. 134), can sometimes impede it. In addition, some activists hold multiple organizational affiliations, enabling them to act as brokers or bridges between groups (e.g., Obach, 2004; Reese et al., 2010; Rose, 2000). These shared members can act as conduits for information exchange, trust-building, and coordination between organizations, shaping the broader patterns of interorganizational cooperation.

2.2. Relational Facilitators and Barriers in Context: An Analytical Framework to Understand How Contextual Conditions Influence Interorganizational Collaboration

Beyond dyadic factors that can facilitate or hinder collaboration, the literature on social movement coalitions widely agrees that “the broader political context can have an important influence on whether activist groups form coalitions” (McCammon & Moon, 2015, p. 329). Yet this assumption is often not paired with a clear specification of what specific contextual factors matter and how.

But let us take a step back and first ask: what is “context”? Building on Rucht’s (1996) notion of “contextual structure,” context can be defined as the set of conditions that lie beyond the immediate control and influence of collective actors but that shape various aspects of mobilization. Rucht distinguished three key macro-categories that can facilitate or constrain interorganizational ties: political-institutional, socio-economic, and cultural. The first category largely aligns with the widely used concept of “political opportunity structure” (POS), typically operationalized through variables such as the openness of political procedures to non-institutional actors, the stability of elite alignments, the presence of allies and opponents within the political establishment, and the capacity and propensity of authorities to repress dissent (McAdam, 1996). This institutional political dimension has received the bulk of the attention, also in studies of environmental mobilization (de Moor & Wahlström, 2022). The socio-economic context refers to structural societal features—such as inequality, demographic composition, and occupational structure—that influence mobilization and collaboration. Finally, the cultural context considers factors such as the strength of different values and cleavages at a given time and place (Diani, 1995a, 2015) or the historical legacies that shape informal political practices both within and outside institutions (Fishman, 2019).

Many studies have examined the role of abrupt contextual changes in shaping interorganizational collaboration, but most limit their analyses to assessing whether collaboration increases or decreases overall within a given field (e.g., Obach, 2010; Staggenborg, 1986) or how a contextual shift deepens or alleviates an existing divide (e.g., Van Dyke, 2003). Rather than merely asking how contextual changes—such as new opportunities or threats—affect collaboration levels in general, we argue for a more nuanced approach: examining how contextual change shifts the relative weight of distinct collaborative logics and alters the relative salience of different dyadic facilitators and barriers associated with them. In this light, collaborative ties should be understood as “consecrations of contingency” (Martin & Gregg, 2015, p. 52), products of both stable organizational traits and volatile conjunctural conditions that amplify or diminish their relevance. Accordingly, the challenge becomes to understand why “sometimes, differences may be emphasized and turned into an effective barrier to intergroup co-operation; [while] at other times, their power in this respect can be rather low” (Diani, 1995a, p. 14). To address this, we present a new analytical framework aimed at synthesizing and reconciling various insights from existing research on the determinants of social movement coalitions, which is illustrated in Figure 1.

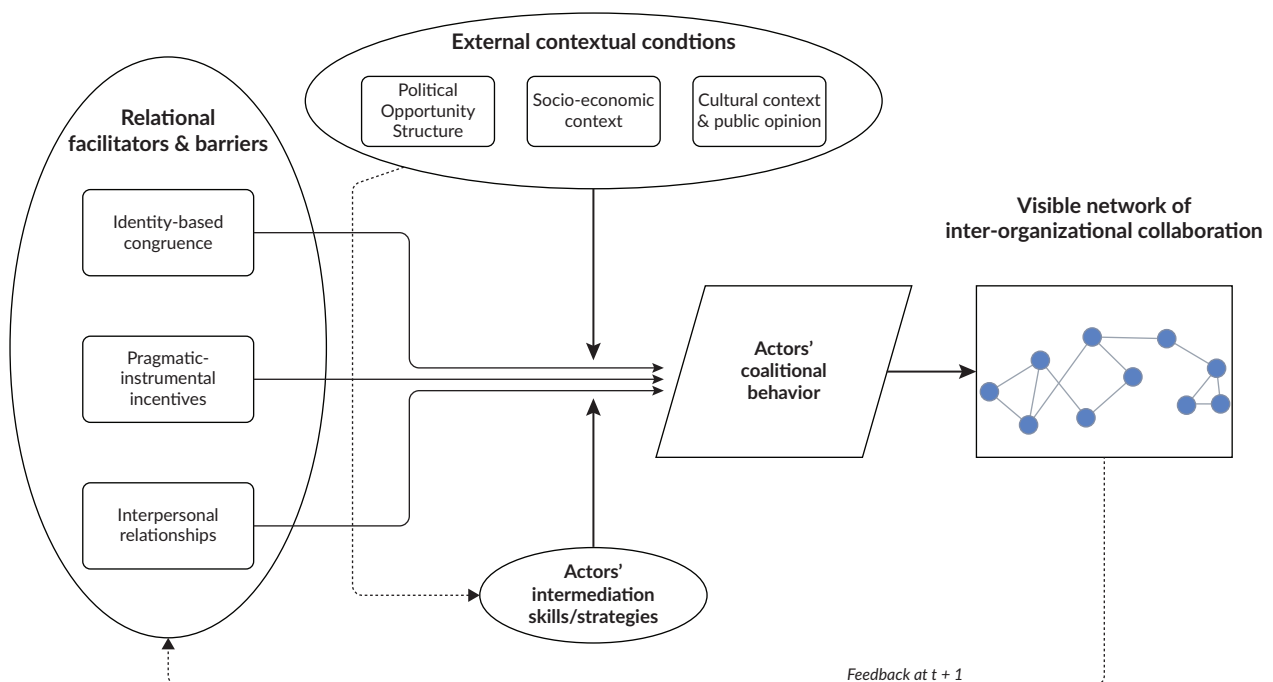


Figure 1. Analytical framework for the dynamic study of interorganizational collaborative networks.

On the right-hand side, the reader can find what the main *explanandum* is: the visible civic network made up of interorganizational collaborations within a field. The specific configuration of this network is considered to be the result of the discrete decisions—yet not completely independent from one another—of each of the organizations that form part of the network (Diani, 1995a, p. 7). These decisions are influenced by two types of factors. First, the presence or absence of certain organizational traits and personal relationships encourages or hinders collaboration between specific pairs of actors. We categorize these influences into three main types, each reflecting different, sometimes conflicting, logics of collaboration: identity-based solidarities, pragmatic-instrumental interests, and interpersonal relationships. However, as emphasized above, collaboration decisions are also deeply shaped by context. Timing and setting can amplify certain facilitators and barriers over others, making previously unlikely potential collaborations much more feasible,

and vice versa. Additionally, external contextual conditions also affect collaborative behaviors in an indirect way, by influencing at the micro-level how individual activists interact on a daily basis (Mische, 2003, 2008).

Finally, it is crucial to recognize that while the factors that facilitate or hinder collaboration tend to remain relatively stable, the organizational traits and interpersonal relationships that act as facilitators or barriers can also evolve. This is represented by the dashed line at the bottom of our diagram. For instance, the crystallization of collaborative interactions into consolidated relationships of alliances or coalitions is likely to foster (or solidify) shared perspectives, develop new strategies, and forge stronger interpersonal bonds. These evolving relationships, in turn, can significantly influence coalition decisions in the future.

3. Case Study: The Environmental Collective Action Field in the Basque Country

To examine how contextual transformations moderate patterns of interorganizational collaboration, we analyze the evolution of event co-attendance networks within the ECAF in the Basque Country (Spain) over 11 years, between 2007 and 2017. In line with previous studies (e.g., Barcena & Ibarra, 2001; Casquete, 1996), we use the term “Basque Country” to refer exclusively to the four territories of the “Southern Basque Country” within Spanish borders (Araba, Biscay, Gipuzkoa, and Navarre), even though the most encompassing use of the term (*Euskal Herria*) also includes the three northern provinces located in France that are not considered within the scope of this study.

Drawing on Diani and Mische’s (2015, p. 307) definition of collective action fields, we define the ECAF as a localized arena encompassing diverse actors engaged in various forms of collective action who share a broad mutual orientation toward environmental protection and sustainability. These actors, while not always cooperating, share general orientations and sometimes engage in joint action. The notion of ECAF thus provides a more comprehensive lens than traditional notions such as “environmental movement” (Rootes, 1999, 2004) or “environmental social movement industry” (Rucht, 1989). While the latter terms restrict the analysis to environmental social movement organizations (ESMOs)—i.e., organizations whose core objective and activities center on environmental demands—the ECAF as a “social movement exchange field” (Zietsma et al., 2017) also includes, when regularly involved in environmental collective action (Diani, 2022), members of allied movements and other types of collective actors, including highly institutionalized entities such as political parties and trade unions. Social network analysis concepts and tools have proven especially suitable for representing and analyzing various types of interorganizational collective action fields (e.g., Diani & Pilati, 2011; Hoffmann et al., 2025; Oncini & Ciordia, 2024).

The Basque Country offers a particularly compelling case for our study for three main reasons. First, environmental activism has historically played a central role in the region’s contentious politics since the Spanish democratic transition (1975–1978). The anti-nuclear struggle, particularly opposition to the Lemoiz nuclear power plant, dominated mobilization in the late 1970s and early 1980s (Barcena & Ibarra, 2001; Barcena et al., 2003). Since then, Basque environmentalism has diversified significantly in terms of issues while maintaining high levels of mobilization (Barcena & Ajangiz, 2011; Ciordia, 2020a; Martínez Palacios & Barcena, 2012). Some scholars even argue that the Basque Country experiences a much higher per capita volume of socio-environmental conflicts than the rest of Spain and many other European regions (Martínez Palacios & Barcena, 2013, pp. 16–19). Second, the Basque ECAF reflects the broader pattern of ideological polarization and sectarianism that has historically shaped collective action in the region. Environmental

contention has been particularly affected by the ethnonational violent conflict (Alonso et al., 2014, p. 19), with divisions over Basque nationalism and ETA's (*Euskadi ta Askatasuna*, or Basque Country and Freedom) armed struggle deeply influencing collaboration dynamics (Barcena & Ibarra, 2001; López Romo, 2008; Tejerina et al., 1995).

Finally, the Basque Country underwent two distinct, though temporally overlapping, contextual transformations during the period under study, as summarized in Figure 2. These transformations provide a crucial empirical setting to investigate how changes in the broader political context influence patterns of interorganizational collaboration within collective action fields.

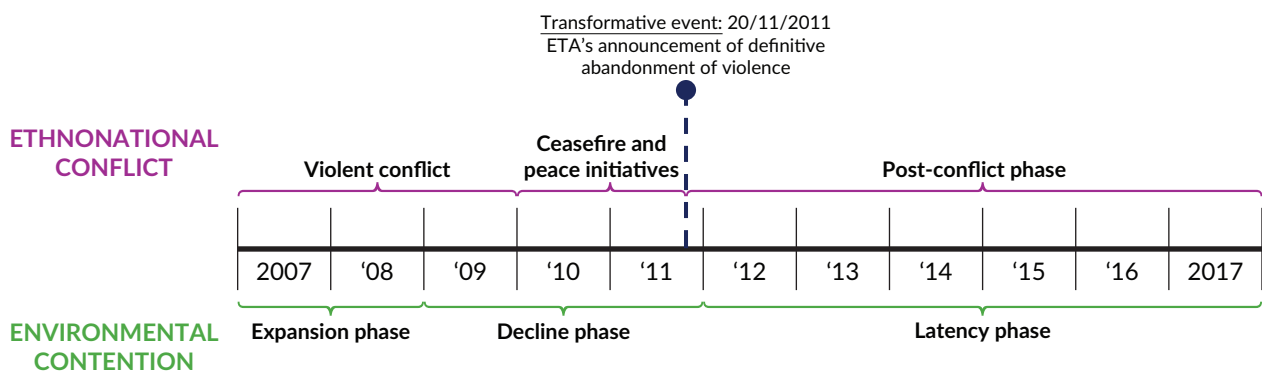


Figure 2. Timeline of main contextual changes during the period of study.

The first major transformation was the end of the long-standing violent conflict (1968–2011) between the Spanish state and the separatist militant organization ETA. ETA's unilateral announcement of its abandonment of violence on October 20, 2011, is widely considered a pivotal moment in Basque institutional and extra-institutional politics, representing a “critical” (Staggenborg, 1993) or “transformative event” (McAdam & Sewell, 2001; Sewell, 1996) that significantly reshaped collective action dynamics in the post-conflict period (Letamendia, 2019). Recent research suggests that ideological divisions within Basque social movements have become less rigid, with more conciliatory discourses emerging and new spaces for convergence being created (Iraola et al., 2023). Similarly, a prior study on ideological divisions within the Basque ECAF found that “traditional incentives (Basque nationalism) and disincentives (disagreement over ETA's armed struggle) for interorganizational collaboration” faded in the years immediately following ETA's disarmament (Ciordia, 2021, p. 229). However, these earlier analyses focused exclusively on identity-related predictors, leaving other types of predictors unexplored.

The second key transformation concerns the fluctuating dynamics of environmental contention in the Basque Country between 2007 and 2017. The period begins with the peak of the anti-high-speed train (HST) campaign, a wave of protest fueled by opposition to the large-scale infrastructure project to build a new high-speed railway line connecting Madrid with the major Basque cities and France through the mountainous Basque countryside. While the anti-HST campaign had existed since the early 1990s, the actual commencement of construction in 2006 triggered a massive wave of protests, reaching its apex in 2008. However, this period also saw increased state repression and internal tensions within the movement, which were significantly exacerbated when ETA incorporated opposition to the HST into its agenda, culminating in the assassination of businessman Inaxio Uria in December 2008 (Barcena & Larrinaga, 2010).

This event caused widespread disaffection among activists and contributed to a gradual demobilization of the anti-HST campaign beginning in early 2009. Importantly, this turning point in the environmental cycle of contention preceded ETA's final ceasefire in October 2011.

By 2012, a combination of declining grassroots mobilization and the reduced prioritization of the project from the Basque and Spanish governments due to the public debt crisis had pushed the conflict to the margins of the Basque political agenda. The Basque ECAF entered a period of limited mobilization or latency that continued throughout the decade. Yet despite this decline in large-scale environmental contention, this latency period was marked by a diversification of environmental issues and actors. As the anti-HST struggle lost momentum, previously overshadowed environmental conflicts—such as waste incineration, climate change mitigation, renewable energy policies, and the closure of the Garoña nuclear plant—resurfaced as prominent concerns. Additionally, a major new environmental conflict emerged around hydraulic fracturing (fracking) for shale gas extraction, dominating the Basque environmental agenda between 2012 and 2015 (see Orbegozo Terradillos et al., 2020). During this time, new, smaller environmental organizations appeared, and non-environmental actors—including political parties, trade unions, and civic organizations focused on other issues—became increasingly involved (see Ciordia, 2020a). As a result, although public mobilization remained relatively low, the Basque ECAF became more heterogeneous, with a broader range of actors actively engaging in environmental collective action.

3.1. Research Questions and Hypotheses

As the context in which Basque environmentalism operated throughout the 2007–2017 timeframe was shaped by major changes in two contextual dimensions that could influence how political actors make collaborative decisions, we ask the following two research questions:

RQ1. How did the weight of different types of relational drivers of collaboration evolve across phases of the cycle of contention?

RQ2. How did the weight of different types of relational drivers of collaboration evolve across phases of the region's ethnonational conflict?

As previous studies on social movements' coalitions have examined similar questions (e.g., Cinalli, 2003; Diani, 2015, Chapter 6; Saunders, 2007a), we can build on their theoretical propositions and empirical findings to formulate case-specific expectations.

3.1.1. Drivers of Collaboration at Different Phases of a Cycle of Contention

Moments of conflict expansion play a crucial role in redefining social boundaries between collective actors, increasing or decreasing their relevance through mechanisms of boundary activation or deactivation (Tilly, 2004). It has been shown that peaks of contention serve as "relational catalysts" capable of fostering wider interorganizational collaboration (Steinhilper & Hoffmann, 2024). This happens through a process of network "amplification," where previously disconnected actors come together (Diani & Mische, 2015, p. 319), often overcoming existing ideological differences (e.g., Saunders, 2007b) but also through the expansion of previous identity boundaries (Wang et al., 2018).

For example, reactions to sudden threats, generalized repression, or temporal resource constraints can foster ad-hoc transversal coalitions by momentarily elevating the value of shared interests and goals while simultaneously backgrounding ideological disagreements (e.g., McCammon & Campbell, 2002; Meyer & Corrigan-Brown, 2005; Van Dyke, 2003) or social identity differences (e.g., Okamoto, 2010). Conversely, while political openings are generally less likely than threats to foster broad-based coalitions (McCammon & Van Dyke, 2010; Poloni-Staudinger, 2009), favorable circumstances, such as unusual openings of the institutional system to the movement's demands (Staggenborg, 1986, p. 382) or a sudden influx of resources available to collective actors (McCarthy & Zald, 1977)—common during the growing phase of a cycle of contention (Diani, 1995a, p. 15; Saunders, 2007a)—can also spur cross-cutting collaboration. Consequently, we anticipate that:

H1. Identity-based congruence had the weakest influence on collaboration at the peak of the cycle of contention (2007) and grew stronger in subsequent periods of demobilization (2009–2011) and latency (2013–2017).

H2. Pragmatic-instrumental incentives had the strongest influence on collaboration at the peak of the cycle of contention (2007) and weakened during subsequent periods of demobilization (2009–2011) and latency (2013–2017).

Conversely, during periods of relative inactivity or latency in between more visible contention waves, collective actors continue forming relationships and coordinating action, laying groundwork for future more visible mobilizations. Expanding upon the classic observations of Melucci (1989) and Taylor (1989) on the key role of submerged interpersonal networks during phases of *latency* or *abeyance*, we expect interpersonal connections to gain prominence as facilitators of coordinated efforts in low-mobilization contexts (e.g., Rupp & Taylor, 1987; Valiente, 2015). Following this reasoning, we anticipate that:

H3. Interpersonal boundaries had the strongest influence on collaboration during the latency phase (2013–2017) compared to the earlier peak (2007) and demobilization (2009–2011) phases.

3.1.2. Drivers of Collaboration Before and After the End of the Violent Ethnonational Conflict

So far, we have approached our questions by observing how cycles of contention, considered as relational junctures, can become a contextual factor capable of reshaping the boundaries between actors within the ECAF. Similarly, we argue that the relative strength of identity-based boundaries between organizations is shaped by how strongly certain ideological divides are politicized and contested within the broader society. In deeply divided societies—"in which a fault line that runs through society causes political polarization and establishes a force field" (Guelke, 2012, p. vi)—organizational identities tend to align with overarching sociopolitical camps. As a result, membership in civic or political organizations often mirrors societal divisions, even when actors mobilize on issues seemingly unrelated to the societal fault line. These cleavages, when reflected in collective action fields, establish what Tilly (2004) calls "social boundaries." When these are well-established, actors on each side interact more frequently and densely with one another than across the divide, while also constructing shared narratives and logics of action specific to their own side. This fosters clustering patterns along Simmelian "concentric circles" (Diani, 2000), contributing to the consolidation of distinct and often antagonistic political subcultures.

Crucially, the salience of these divides is not static. The degree to which a society is polarized along any given cleavage can shift over time. While such changes tend to be rooted in long-term, incremental processes and therefore often unfold gradually—sometimes imperceptibly for activists and observers—they can also occur abruptly over short periods. These sudden shifts can be triggered by large-scale transformative events, understood as a “relatively rare subclass of happenings that significantly transform structures” (Sewell, 2005, p. 100), reshaping political opportunity structures and disrupting established interaction patterns. In the realm of collective action, such “critical events” (Staggenborg, 1993) may influence a wide range of organizational opportunities and strategies, including coalitional behavior. They create “moments of heightened contingency that tip movements towards cohesion or fragmentation” (Gunzelmann, 2024, p. 6), potentially leading to diverging alliance-building paths (e.g., Portos & Carvalho, 2022).

In this sense, changes in overarching conflict structures, such as the end of armed struggle in a formerly polarized society, can shift the calculus of collaboration. For instance, in highly polarized contexts where certain ideological cleavages are paramount, collective actors tend to adopt rigid stances to preserve internal coherence, resisting engagement with ideologically distant others (Cinalli, 2003; Diani, 1995a; Diani et al., 2010). This results in them prioritizing the preservation of their core beliefs over pragmatic alliance-building (Diani, 1995b, p. 363). In these contexts, groups become rigidly anchored to their positions, making ideological disagreements hard to tolerate (Taraktas, 2022), hindering the formation of strategic alliances and fostering segmentation along ideological lines. In contrast, in less polarized contexts, collective actors tend to be less bound by ideological orthodoxy. Political identities loosen, and willingness to compromise increases, enabling cross-cleavage collaboration (Diani, 1995b). In such settings, ideological disagreement becomes negotiable, and collaboration in pursuit of shared objectives becomes more feasible (Taraktas, 2022). Based on these dynamics, we anticipate that:

H4. Ideological boundaries associated with the contentious issue of Basque national self-determination and the armed struggle had a stronger influence on collaboration before ETA’s abandonment of violence in 2011 and weakened in the post-conflict phase.

Applying the same logic to pragmatic-instrumental ties, we expect collective action collaboration to be more pragmatic in less polarized contexts than in highly polarized ones (Diani, 1995b; Taraktas, 2022). Therefore:

H5. Pragmatic-instrumental boundaries had a weaker influence on collaboration before ETA’s abandonment of violence in 2011 and became stronger in the post-conflict phase.

Moving to the role of interpersonal relationships, it is also essential to recognize how activists’ involvement in multiple organizations or existing friendships might facilitate the emergence of trust between different groups, potentially helping to overcome ideological barriers. For instance, Diani (2023, pp. 529–531), comparing collective action fields in South African and British cities, found that interpersonal trust mattered more for interorganizational alliances in polities where cleavages were still salient, as in South Africa, than in cities where cleavages were largely pacified, as in the UK. Interpersonal relationships, thus, may play a compensatory role where polarization is high, offering informal communication and trust channels that would otherwise be blocked at the organizational level. Accordingly, we anticipate that:

H6. Interpersonal boundaries had the strongest influence on collaboration when ideological conflict was at its peak, before ETA's rejection of armed struggle in 2011, and weakened in the post-conflict phase.

4. Data and Methods

For this study, retrospective data on event co-participation were collected indirectly and unobtrusively (see Ciordia & Perego, 2024), using an original newspaper-based dataset covering 419 environmental collective action events in the Basque Country across six alternate years between 2007 and 2017. Collective action events are defined as nonroutine public physical gatherings held outside of institutional political channels to promote causes or demands on behalf of broader publics (Sampson et al., 2005, pp. 682–683). This definition includes not only conventional protest forms but also under-researched civic and hybrid events (e.g., community festivals, teach-ins, etc.). The selection criterion centers on physical collective action events with a public-sphere projection—i.e., those aimed at engaging broader publics beyond internal organizational life—and focuses on issues related to environmental protection. This includes both protest events that articulate explicit claims or grievances, as well as civic or hybrid events with less overtly contentious aims but still requiring collective decisions to appear together in public. While the forms included vary greatly in visibility and contentiousness, we treat them as public expressions of symbolic alignment and coordination (Diani & Mische, 2015), making co-attendance a meaningful expression of interorganizational collaboration (Diani, 1995a, p. 99, 2015, pp. 107–141). In highly polarized contexts like the Basque Country, even participation in non-contentious public events can reflect strategic relational positioning along salient societal cleavages. We acknowledge that this operationalization excludes less visible or informal forms of coordination—such as joint grant applications, co-signed statements without public events, or online-only campaigns—which fall outside the scope of this analysis. Still, this approach provides a robust and comparative lens for capturing visible collaboration dynamics over time. For more details on this operational definition and its implications, see Appendix 1 in the Supplementary File.

The dataset draws on four local newspapers as sources and covers six alternate years between 2007 and 2017. The start date coincides with the onset of ETA's final campaign of violence, while the endpoint captures a consolidated post-violence phase. The alternate-year sampling balances analytic resolution with feasibility, reducing the number of articles to screen and code while still tracking meaningful change over time. Despite their well-documented limitations, newspaper sources remain the most widely used and systematically accessible source for protest event analysis (Hutter, 2014; Koopmans & Rucht, 2002). Prior research on media biases shows that local news sources offer a strong comparative advantage in sub-state regions, particularly when these are geographically distant from the city of edition of the state-wide newspapers, in this case Madrid (e.g., Barranco & Wisler, 1999, pp. 307–308; Fillieule & Jiménez, 2003, pp. 265–268; Hocke, 1999, pp. 149–152). Moreover, in comparison with state-wide sources, local newspapers can be expected to report a much higher share of all events actually occurring, including many of small size and dealing with low-profile issues (Daphi et al., 2024). To enhance coverage and mitigate selection biases, data collection relied on four ideologically diverse local newspapers—*El Correo*, *El Diario Vasco*, *Diario de Navarra*, and *Gara*—which together offer strong territorial coverage across the Basque provinces and span a range of political perspectives (see Appendix 1 in the Supplementary File for details). Systematic queries were built around a curated list of eleven prominent ESMOs, identified through previous literature, expert interviews, and online searches. The queries returned 2,848 hits, which were screened by

the first author (after developing and validating the screening protocol, including intercoder reliability testing and procedures for handling the limited number of Euskara-only articles; see Appendix 1 in the Supplementary File). The screening yielded 812 relevant newspaper articles reporting on environmental collective action events. Further details on the timeline, source selection, media bias, article retrieval procedures, and screening procedures are provided in Appendix 1 in the Supplementary File.

The 812 articles were downloaded as text files and analyzed using the Discourse Network Analyzer (DNA) software (Leifeld, 2017), a program that supports qualitative content analysis and the export of output as structured relational data. DNA enables coders to retrieve the original text excerpts linked to each coded entry, enhancing transparency and auditability. Coding was conducted by the first author, except for 38 events reported exclusively in Euskara, which were reviewed by a native speaker with expertise in protest event analysis, who confirmed the accuracy of initial codes and identified only two minor omissions (see Ciordia, 2020b, pp. 86–88). All coding followed a detailed protocol and codebook (Appendix 2 in the Supplementary File), and original DNA files are available upon request. In total, 419 unique environmental collective action events were identified across the six years examined. Each event was assigned a unique ID and coded across 13 variables covering six dimensions: date, location, issue, size, form, and target, along with the names of all organizations mentioned as participants in press coverage.

Leveraging this dataset, six yearly collaborative civic networks were constructed in three steps. The first step involved defining the network boundary, that is, deciding which collective actors should be considered members of the Basque ECAF during a given period. While hundreds of organizations participated in at least one environmental event each year, the analysis focused on those that repeatedly engaged in environmental collective action, defined as those mentioned in at least two events within a given year. This criterion yielded a total of 70 organizations identified as members of the Basque ECAF in at least one of the six years examined, with network sizes ranging from 21 to 32 nodes, depending on the year. Second, for each year, we constructed one-mode co-affiliation matrices reflecting the number of events co-attended by each pair of active organizations. Third, raw tie values were normalized using the Jaccard coefficient, which expresses co-attendance as a proportion of all multi-organizational events involving at least one member of the dyad (Borgatti & Halgin, 2011, p. 421). The resulting networks are weighted, with tie strength reflecting frequency-adjusted collaboration intensity. Table 1 reports key network metrics, while sociograms for each year are provided in Appendix 3 in the Supplementary File.

To identify which dyadic factors shaped the structure of collaboration in different years, we used QAP linear regression models, estimating co-attendance intensity between all organizational pairs given a multiplicity of dyadic predictors. Analyses were conducted using UCINET 6 (Borgatti et al., 2002), applying the Double-Dekker Semi-Partialling procedure (Dekker et al., 2007) with 10,000 random permutations. We included seven explanatory networks as potential predictors, representing different kinds of theoretically relevant interorganizational linkages derived from three types of information: ideological profiles, organizational characteristics, and interpersonal ties. Four networks capture dyadic (dis)similarities in four relevant ideological dimensions: (a) *Basque nationalist orientation*, which differentiates organizations that are signified in support Euskal Herria's self-determination from those that are ambiguous or neutral on the national cleavage; (b) *public stance towards ETA's violence*, distinguishing actors that were publicly critical of armed struggle from those perceived as lenient or supportive (thus operationalized as a dissimilarity network); (c) *far left-wing orientation*, identifying groups that position themselves to the left of social

democracy and share strong anti-capitalist stances; and (d) *environmentalist orientation*, a field-specific ideological cleavage distinguishing conservationists, reformists, and political ecologists based on their framing of environmental issues and their broader societal implications. Each of these networks tests whether ideological affinity—or divergence in the case of ETA-related positions—shapes patterns of interorganizational collaboration. In addition to identity-based congruence, two networks capture pragmatic-instrumental incentives for collaboration: (e) *overlapping issue agendas*, which measures the extent to which organizations prioritize the same environmental causes in their mobilization efforts, and (f) *organizational model similarity*, derived from classification into three ideal-types—communitarian-egalitarian, structured-voluntary, and professionalized—based on formalization, and reliance on paid vs. voluntary labor. Finally, (g) *interpersonal ties* are captured through overlapping memberships, where activists belonging to multiple organizations create latent connections that may facilitate collaboration. For further explanation and operational details, see Appendix 5 in the Supplementary File.

Table 1. Descriptive statistics of event co-attendance networks.

	2007	2009 [^]	2011	2013	2015	2017
Total events	116	79	60	54	58	51
Events with 2 or more orgs	47	41	33	32	41	34
Network composition						
Nodes	28	20	21	23	32	30
Environmental organizations	13	9	11	13	13	11
Political parties	6	7	3	5	6	3
Trade unions	7	4	6	5	9	10
Other civic organizations	2	3	1	0	4	6
Network structural properties						
Average degree	11.214	12.000	10.286	8.261	15.313	17.333
Average distance	1.598	1.374	1.510	1.684	1.542	1.430
Diameter	3	3	3	3	3	3
Density	0.415	0.632	0.514	0.375	0.494	0.598
Centralization	0.55	0.351	0.426	0.385	0.402	0.357
Closure	0.661	0.843	0.781	0.681	0.707	0.803
Edge values: range	0–1	0–1	0–0.75	0–1	0–1	0–1
Edge values: mean	0.096	0.171	0.127	0.102	0.111	0.162
Edge values: std. deviation	0.171	0.217	0.167	0.178	0.156	0.182

Notes: In the 2009[^] network, one outlier event (30+ organizations) was excluded to avoid skewing density and clustering. Full results, including all 80 events, are in Appendix 4 in the Supplementary File.

In addition, three control variables were included to account for structural constraints that might bias observed collaboration patterns. These are: (a) *block attendance by political parties and trade unions*, which captures the tendency of political parties to co-attend with other parties and of trade unions with other unions, due to competitive dynamics within these highly institutionalized arenas; (b) *geographic disconnection*, which captures dyads composed of organizations with non-overlapping territorial scopes—such as local groups based exclusively in different Basque provinces—who are unlikely to co-attend the same event; and (c) *second-order node membership*, accounting for a couple of instances of structurally precluded ties between

umbrella coalitions and their constituent organizations due to the applied coding rules (the so-called Basque Trade Union Majority and the short-lived electoral platform *Irabazi*). By incorporating these three controls, we ensure that observed collaboration patterns are not artifacts of structural constraints but rather reflect meaningful interorganizational dynamics. Full operational definitions, attribute codings, and yearly descriptive statistics of these controls are detailed in Appendix 5 in the Supplementary File.

5. Results

Table 2 presents the results of the QAP regression analyses of the event co-attendance matrices for the six alternate years in the dataset. Figure 3 complements these results by displaying the share of explained variance (R^2) accounted for by each predictor over time. Dashed lines show the R^2 for individual predictors, while solid lines show their aggregated contribution by group.

Table 2. QAP regressions of event co-attendance across six alternate years.

	2007	2009 [^]	2011	2013	2015	2017
Intercept	.011	.061	.089	.021	.072	.128
Identity-based congruence						
Shared Basque nationalist orientation	.017	.111**	.080*	.037	.008	.050
Different public positions towards ETA	-.034*	-.115***	.067**	.007	-.016	.023
Similar left-right orientation	.033	-.003	-.040	-.050**	.028	-.023
Similar environmentalist orientation	-.016	-.030	-.056*	-.038*	.016	-.057*
Pragmatic-instrumental incentives						
Overlapping issue agenda	.085**	.258**	.224***	.153***	.066*	.190***
Similar organizational model	.076**	.079*	.027	.086**	-.012	.005
Interpersonal relationships						
Shared active members	.060*	-.048	-.022	.056**	.021	-.003
Controls						
Block attendance by political parties and trade unions	.187***	.186***	.134**	.284***	.233***	.184***
Geographic disconnection	-.089**	-.129*	-.089**	-.086**	-.076***	-.106**
Specific second-order nodes and members	-.384***	—	-.268***	—	-.365***	—
N (dyads)	378	190	210	253	496	435
R^2	.194	.297	.312	.302	.239	.190

Notes: Values of collaborative ties normalized using Jaccard similarity measures. Unstandardized regression coefficients. Significance levels: * $p < .1$; ** $p < .05$; *** $p < .01$ (one-tailed tests).

5.1. Identity-Based Congruence

Figure 3(a) shows the unique explained variance of ideological boundaries considered distant from environmental issues: shared Basque nationalist orientation and divergent stances on ETA's violence. During the demobilization phase (2009–2011), these factors strongly influenced collaboration, especially in 2009, when they jointly explained nearly 7% of variance. In contrast, their influence was negligible during the

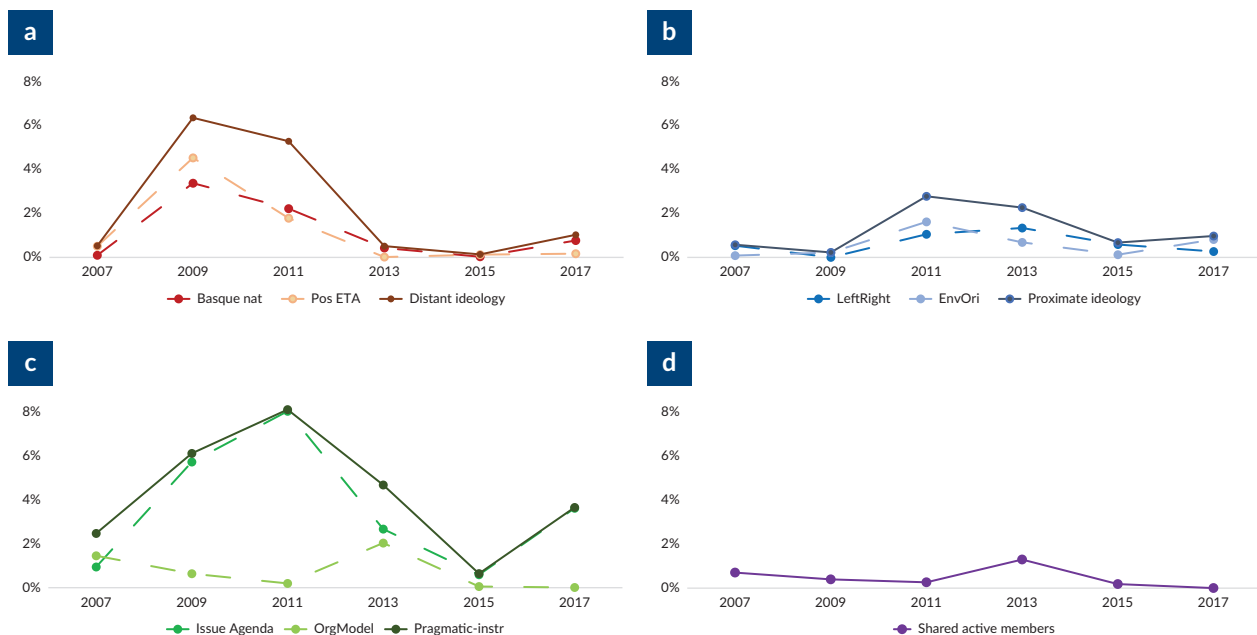


Figure 3. Explanatory variance (R^2 values) of each predictor over time: (a) Identity-based congruence: Distant ideology; (b) Identity-based congruence: Proximate ideology; (c) Pragmatic-instrumental incentives; and (d) Interpersonal relationships.

high-mobilization period of 2007 and disappeared entirely post-conflict. Regression coefficients in Table 2 reinforce this interpretation and add further nuance. The coefficient for shared Basque nationalist orientation rises sharply in 2009 (0.111, $p < .05$) and remains significant in 2011. Simultaneously, opposing stances on ETA had the expected negative effect on collaboration in 2007 (-0.034 , $p < 0.10$) and especially in 2009 (-0.115 , $p < 0.01$). Notably, the effect reversed in 2011, turning into a significant positive association (0.067, $p < .01$) in 2011, when a ceasefire was in place and informal peace initiatives were underway. This indicates that radical Basque nationalist organizations traditionally lenient towards ETA became more integrated in this collective action field, a pattern already observed in two previous de-escalation phases in other collective action fields (Fernández Sobrado & Antolín Iria, 2000, p. 162; Letamendia, 2011, pp. 165–167).

In contrast, Figure 3(b) shows that similarity on more proximate ideological dimensions—left-right and environmentalist orientation—played a minimal role. Table 2 report no consistent significant effects, except for a small negative effect of left-right similarity in 2013 (-0.050^{**} , $p < .05$) and environmentalist similarity in both 2011 (-0.056 , $p < .10$) and 2013 (-0.038 , $p < .10$). These findings suggest that cross-ideological collaboration was common, and at times more likely than within-group collaboration. One plausible explanation is that the Basque environmental field was already ideologically skewed—particularly dominated by far-left actors and political ecologists—leaving little room for variation in these two ideological dimensions to exert any effects.

Taken together, the results support H1, which anticipated weaker identity-based effects at the cycle's peak (2007) and stronger effects during the demobilization phase (2009–2011), especially for distant ideological cleavages. They also confirm H4, which expected a declining influence of nationalist and violence-related identities in the less polarized post-conflict period after 2011, as both factors became non-significant predictors of collaborations in the post-conflict phase.

5.2. Pragmatic–Instrumental Incentives

Figure 3(c) shows that pragmatic–instrumental incentives had the most robust and consistent influence on collaboration. Table 2 supports this, showing highly significant coefficients for overlapping issue agendas in every year, peaking during demobilization in 2009 and 2011 (0.258 and 0.224, respectively, both $p < .01$). In contrast, similar organizational models had weaker, less stable effects, statistically significant in 2007, 2009, and 2013 but never explaining more than 2% of the variance. This contrast suggests that while organizational compatibility may help, shared issue priorities were the principal pragmatic driver of collaboration across the period.

These findings contradict H2, which expected pragmatic aspects and programmatic alignment to matter most during the peak of contention (2007). Instead, they were stronger during demobilization (2009–2011), particularly for programmatic overlap. They also challenge H5, which anticipated an increased weight of pragmatic-instrumental logics in the post-conflict period. Although overlapping issue agendas remained the most consistent predictor during those years—at times the only significant one (2015)—their explanatory power declined compared to earlier years. Overall, these results caution against interpretations of pragmatic collaboration as a response to shifting political opportunities alone. Despite contextual changes and slight fluctuations, actors in the environmental field consistently forged alliances based on substantive issue compatibility, reinforcing the idea that environmental collective action remains grounded in programmatic interests (Borbáth & Hutter, 2020) and tends to persist over time on these grounds, even amidst high political and social volatility (Diani, 2015, Chapter 6).

5.3. Interpersonal Relationships

Figure 3(d) tracks the influence of interpersonal linkages, proxied by overlapping memberships. Their effect was marginal and inconsistent: positively associated with collaboration only in 2007 (0.060, $p < .10$) and 2013 (0.056, $p < .05$), and never explaining more than 1.5% of the variance. These results fail to support H3, which expected interpersonal ties to become more influential during the latency phase of environmental mobilization (2013–2017), when mobilization declined and identity cleavages weakened. They also fail to support the contrasting H6, which anticipated their importance to peak in the years before ETA's abandonment of armed struggle (2007–2011). In short, overlapping memberships proved a poor predictor of interorganizational collaboration across the period. This may reflect a context in which ideological, organizational, or programmatic criteria outweighed personal familiarity, or, alternatively, that more informal or ad hoc interpersonal channels of coordination were simply not captured by this particular indicator.

5.4. Summary of Results

In sum, these results show a shifting interplay of collaboration drivers. The influence of divisive identity cleavages diminished sharply after 2011, while programmatic alignment remained a consistent—though also fluctuating in predictive power—basis for collaboration. Interpersonal relationships and internal structural similarities played only a secondary role. These findings refine earlier work (Ciordia, 2021; Iraola et al., 2023) by showing how distinct dimensions of (dis)similarity evolve and interact differently with mobilization phases and shifts in the context structure. Most importantly, they underscore the value of a multidimensional, relational, and diachronic approach to understanding alliance dynamics in environmental contentious politics.

The findings illustrate how collective action in contentious settings cannot be explained by a single logic, but rather emerges from an unstable balance between organizational identities and issue interests.

6. Discussion and Conclusions

This study offers a diachronic perspective on interorganizational collaboration, foregrounding the moderating role of the broader political context on various drivers and barriers of collaboration. By tracing event co-attendance networks within the Basque ECAF from 2007 to 2017, we shed light on how shifting phases of the mobilization cycle and wider societal polarization reweight the influence of different dyadic predictors of interorganizational collaboration. In doing so, the study offers a new angle for understanding environmental collective action networks—one that moves beyond systemic and dispositional perspectives to propose a more interactive account of how organizational (dis)similarities gain or lose salience over time in complex and non-linear ways.

The clearest transformation concerns the deactivation of long-standing ideological boundaries following ETA's abandonment of violence in 2011. Until then, stances on Basque self-determination and political violence shaped patterns of interaction within the field, with Basque nationalist alignment fostering collaboration and divergent positions inhibiting it—even during high-mobilization years like 2007. This echoes Diani's (1995a) findings on 1970s Italian environmentalism, where strong left-right polarization constrained broad alliances despite rising contention. Yet the Basque case also shows that peak mobilization moments can soften ideological boundaries, enabling limited cross-cutting collaboration even in deeply polarized contexts. Still, the transformative event of 2011 marked a much deeper shift: ideological determinants of collaboration waned, allowing for broader, more heterogeneous partnerships—similar to patterns observed in post-conflict Northern Ireland (Cinalli, 2002, 2003). This shift is also congruent with recent comparative policy network studies (Gronow et al., 2020; Kammerer et al., 2021; Satoh et al., 2025), which show that belief alignment plays a diminished role in more consensual governance contexts.

Conversely, the failure to confirm hypotheses concerning pragmatic-instrumental boundaries (H2 and 5) and interpersonal relationships (H3 and 6) raises important questions. First, our findings caution against overly reactive models of collective action driven primarily by short-term incentives. Despite contextual turbulence, organizations continued to form ties based on shared issue agendas. Although the predictive power of issue alignment fluctuated—from 8% of tie formation in 2011 to less than 1% in 2015—its consistent significance underscores a core continuity in coalition logic. Second, our data also suggests a qualification to the argument that declining mobilization (i.e., 2009 and 2011 observations) pushes organizations toward ideological radicalization and sectarianism, hoping that a more distinct ideological profile would help recruit new members from a shrinking constituency. This point has been famously formulated in reference to the radicalization of new leftist groups in Italy during the late 1970s demobilization phase (della Porta & Tarrow, 1986), but should not be automatically extended to any type of collective action (incidentally, this was never the proponents' intention). Organizations without a radical culture, like most environmental groups, are not likely to react to a contraction in their mobilizing capacity by radicalizing but may instead double down on pragmatic collaboration, as our results suggest. Rather than being epiphenomenal to protest cycles, instrumental collaboration appears to rest on more stable alignments of issue agendas, reinforcing recent claims that protest politics is shaped by stable "mobilization networks dominated by organized actors" (Borbáth & Hutter, 2024), where collaboration is underpinned by long-term

alignments and previous collaboration history (e.g., Diani, 2015, Chapter 6) rather than shifting incentives alone. Still, the precise basis of this sustained collaboration in the later post-conflict period remains an open question, but one possibility is that the concurrent anti-austerity cycle initiated by the 15M movement (Portos, 2021) helped forge new alignments around redistributive or social justice themes. These results highlight the need to complement opportunity-based models with more fine-grained micro-level (e.g., Beamish & Luebbbers, 2009; Mische, 2008) and perception-oriented accounts (e.g., de Moor & Wahlström, 2019; Saunders, 2009; Saunders et al., 2025).

Our results also speak to the resilience of the interorganizational collaborative networks within the Basque ECAF: despite a radical transformation of the broader sociopolitical context after 2011, the topology and density of collaborative networks remained remarkably stable (see Table 1) and the field continued to perform its core function (Ingold et al., 2022)—sustaining pro-environmental collective action—even as traditional ideological drivers waned and even issue agreement lost some explanatory power. One plausible interpretation is that the field transitioned from a “deep core advocacy coalition” logic (Weible et al., 2025), in which collaboration is rooted in macro-level non-environmental political identities (nationalist and ETA stances), toward more flexible and issue-specific coalitions structured around shared specific environmental objectives. Furthermore, it is also worth noting that the post-2011 period was also marked by some relatively eco-friendly policy outcomes in the Basque region, especially in the Basque Autonomous Community (Conversi & Ezeizabarrena, 2019), including the non-extension of the Garoña nuclear plant’s license (2015), the refusal of fracking (2015–2016), and a recent bill on the energy transition and the climate emergency (2024). While we refrain from drawing direct causal links between collaboration and policy outcomes, the shift toward more flexible, cross-cutting coalitions may have facilitated favorable conditions for such decisions, consistent with evidence that broad, diverse coalitions can enhance efficacy and policy influence (e.g., Almeida, 2008; Banaszak, 1996; Jones et al., 2001). In the Basque case, coalition-building across ideological divides may have helped the movement shed prior associations with radicalism or abertzale exclusivity (Barcena & Ajangiz, 2011), gaining legitimacy in the eyes of both the public and decision-makers. This hypothesis on the potential political benefits of broader coalitions warrants further investigation.

While we provide a novel framework and empirical demonstration of the contextual modulation of coalitional drivers, several limitations remain, and the approach can be further developed and extended. First, our focus on public, visible collective action leaves other forms of collaboration—such as joint projects or online campaigns—outside our analysis. Including these would offer a fuller picture of frontstage and backstage network dynamics. Second, we could not incorporate tactical (dis)similarity as a potential collaboration driver, due to both data limitations and limited tactical heterogeneity within the Basque ECAF (Ciordia, 2020a). Yet tactical disagreement can be a key obstacle to collaboration (della Porta & Tarrow, 1986; Hadden, 2015; Wang & Soule, 2012), making this an important aspect to be incorporated in future studies. Third, methodologically, our data allowed only cross-sectional comparisons of six discrete yearly observations. With access to continuous protest event data and more processual hypotheses on tie creation, persistence, and dissolution, future work could employ dynamic network models better suited to unpack the specific relational processes at play. Promising techniques include stochastic actor-oriented models (SAOMs; Snijders, 1996; Snijders et al., 2010), temporal exponential random graph models (TERGMs; Cranmer & Desmarais, 2011; Krivitsky & Handcock, 2014), relational event models (REMs; Butts, 2008; Lerner & Lomi, 2023), or event sequence analysis (ESA; Spekink & Boons, 2016). Fourth, future research could

disaggregate collaborative patterns by the specific policy issues around which collective action occurs. While we aimed to map the broader collaborative structure of the ECAF—rather than examine issue-specific coalitions—different issues likely vary in their capacity to bridge ideological divides. While certainly interesting and in line with recent calls for problem-centered approaches towards environmental and climate movements (de Moor, 2025), this objective falls outside of the scope of this study. Exploring these dynamics would require a different analytical strategy, potentially adopting a multimodal network approach that accounts for how actors relate not just to each other, but to particular event characteristics, such as demands, frames, or degree of contentiousness (Knoke et al., 2021). Such work would offer a promising path to extend our framework by incorporating issue-specific heterogeneity within a collective action field. Finally, to enhance the generalizability of our findings on contextual modulation of collaboration patterns, future comparative research could examine environmental collective action fields across national or subnational cases with varying conflict trajectories and institutional configurations, thereby clarifying the conditions under which ideological, pragmatic, or interpersonal drivers gain prominence and when they fade.

In conclusion, this study underscores the importance of considering time and context when analyzing interorganizational collaboration. The Basque case illustrates how political change can recalibrate not only field-level opportunities for cooperation but also the social boundaries that determine who collaborates, under what terms, and for how long. While our findings resonate with long-standing theories that emphasize political opportunity structures (McAdam et al., 2001), they also highlight the evolving nature of relational mechanisms and their interaction with macro-level shifts. This more contextualized and less deterministic account of environmental collective action networks provides important insights not only for political sociologists and political scientists but also for activists and practitioners. Fostering collaboration may require different strategies depending on the prevailing political climate. Ultimately, while shared identities and goals remain important, the choice to cooperate is shaped by an ever-shifting terrain—demanding strategic adaptability from the actors navigating it.

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Conflict of Interests

The authors declare no conflict of interests.

Data Availability

The data are available from the authors upon request.

LLMs Disclosure

The first author used ChatGPT for grammar and style improvements. All suggestions were carefully checked to ensure that the substance of the text remained unchanged. The authors have edited the text as needed and take full responsibility for the content of the publication.

Supplementary Material

Supplementary material for this article is available online in the format provided by the authors (unedited).

References

- Ackland, R., & O'Neil, M. (2011). Online collective identity: The case of the environmental movement. *Social Networks*, 33(3), 177–190. <https://doi.org/10.1016/j.socnet.2011.03.001>
- Almeida, P. (2008). The sequencing of success: Organizing templates and neoliberal policy outcomes. *Mobilization: An International Quarterly*, 13(2), 165–187. <https://doi.org/10.17813/mai.13.2.cl74r52765281005>
- Alonso, C., Barcena, I., & Gorostidi, I. (2014). Repression and criminalization of the ecologist movement in the Basque Country: The case of the high speed train project. *Oñati Social-Legal Series*, 4(1), 13–34.
- Banaszak, L. A. (1996). *Why movements succeed or fail: Opportunity, culture, and the struggle for woman suffrage*. Princeton University Press.
- Barcena, I., & Ajangiz, R. (2011). Basque social movements. In P. Ibarra & X. Irujo Ametzaga (Eds.), *Basque political systems* (pp. 219–234). University of Nevada Press.
- Barcena, I., & Ibarra, P. (2001). The ecologist movement in the Basque Country. In K. Eder & M. Kousis (Eds.), *Environmental politics in Southern Europe: Actors, institutions and discourses in a Europeanizing society* (pp. 175–196). Kluwer Academic. https://doi.org/10.1007/978-94-010-0896-9_8
- Barcena, I., Ibarra, P., Guarrotxena, E., & Torre, J. (2003). The Basque Country. In C. Rootes (Ed.), *Environmental protest in Western Europe* (pp. 200–215). Oxford University Press.
- Barcena, I., & Larrinaga, J. (2010). Luces y sombras en la lucha contra el TAV en Euskal Herria. In P. Ibarra & E. Grau (Eds.), *Anuario de movimientos sociales 2010* (pp. 223–232). Fundación Betiko.
- Barranco, J., & Wisler, D. (1999). Validity and systematicity of newspaper data in event analysis. *European Sociological Review*, 15(3), 301–322. <https://doi.org/10.1093/oxfordjournals.esr.a018265>
- Beamish, T. D., & Luebbbers, A. J. (2009). Alliance building across social movements: Bridging difference in a peace and justice coalition. *Social Problems*, 56(4), 647–676. <https://doi.org/10.1525/sp.2009.56.4.647>
- Borbáth, E., & Hutter, S. (2020). Protesting parties in Europe: A comparative analysis. *Party Politics*, 27(5), 896–908. <https://doi.org/10.1177/1354068820908023>
- Borbáth, E., & Hutter, S. (2024). Environmental protests in Europe. *Journal of European Public Policy*, 32(8), 1932–1957. <https://doi.org/10.1080/13501763.2024.2390701>
- Borgatti, S. P., Everett, M. G., & Freeman, L. C. (2002). *Ucinet 6 for Windows: Software for social network analysis*. Analytic Technologies.
- Borgatti, S. P., & Halgin, D. S. (2011). Analyzing affiliation networks. In J. Scott & P. Carrington (Eds.), *The Sage handbook of social network analysis* (pp. 417–433). Sage.
- Brooker, M. E., & Meyer, D. S. (2018). Coalitions and the organization of collective action. In D. A. Snow, S. A. Soule, H. Kriesi, & H. McCammon (Eds.), *The Wiley Blackwell companion to social movements* (2nd ed., pp. 252–268). Wiley Blackwell.
- Butts, C. T. (2008). A relational event framework for social action. *Sociological Methodology*, 38(1), 155–200. <https://doi.org/10.1111/j.1467-9531.2008.00203.x>

- Casquete, J. (1996). The sociopolitical context of mobilization: The case of the antimilitary movement in the Basque Country. *Mobilization: An International Quarterly*, 1(2), 203–212. <https://doi.org/10.17813/mai.2.2.h261467624182737>
- Cinalli, M. (2002). Environmental campaigns and socio-political cleavages in divided societies. *Environmental Politics*, 11(1), 163–171. <https://doi.org/10.1080/714000594>
- Cinalli, M. (2003). Socio-politically polarized contexts, urban mobilization and the environmental movement: A comparative study of two campaigns of protest in Northern Ireland. *International Journal of Urban and Regional Research*, 27(1), 158–177. <https://doi.org/10.1111/1468-2427.00437>
- Ciordia, A. (2020a). La evolución de la acción colectiva ecologista en Euskal Herria de 1988 a 2017. In A. Álvarez-Benavides, F. Fernández-Trujillo Moares, A. Sribman Mittelman, & A. E. Castillo Patton (Eds.), *Acción colectiva, movilización y resistencias en el siglo XXI. Vol. 2: Genealogías* (pp. 69–89). Betiko.
- Ciordia, A. (2020b). *Less divided after ETA? Green networks in the Basque Country between 2007 and 2017* [Unpublished PhD thesis]. University of Trento. <http://hdl.handle.net/11572/277816>
- Ciordia, A. (2021). Less divided after ETA? The evolution of ideological cleavages in the Basque environmental field, 2007–2017. *Mobilization: An International Quarterly*, 26(2), 217–236. <https://doi.org/10.17813/1086-671X-26-2-217>
- Ciordia, A., & Perego, A. (2024). Taking a detour to travel farther afield: Reconstructing collaborative collective action networks through documentary traces of events. *Partecipazione e Conflitto*, 17(3), Article 3. <https://doi.org/10.1285/i20356609v17i3p739>
- Conversi, D., & Ezeizabarrena, X. (2019). Autonomous communities and environmental law: The Basque case. In O. Akbulut & E. Aktoprak (Eds.), *Minority self-government in Europe and the Middle East: From theory to practice* (pp. 106–130). Brill.
- Cranmer, S. J., & Desmarais, B. A. (2011). Inferential network analysis with exponential random graph models. *Political Analysis*, 19(1), 66–86.
- Crossley, N., & Diani, M. (2018). Networks and fields. In D. A. Snow, S. A. Soule, H. Kriesi, & H. J. McCammon (Eds.), *The Wiley Blackwell companion to social movements* (2nd ed., pp. 151–166). Wiley.
- Daphi, P., Dollbaum, J. M., Haunss, S., & Meier, L. (2024). Local protest event analysis: Providing a more comprehensive picture? *West European Politics*, 48(2), 449–463. <https://doi.org/10.1080/01402382.2024.2363709>
- de Moor, J. (2025). Towards a problem-centered approach to social movements: The case of European climate activism. *European Societies*. Advance online publication. https://doi.org/10.1162/euso_a_00042
- de Moor, J., & Wahlström, M. (2019). Narrating political opportunities: Explaining strategic adaptation in the climate movement. *Theory and Society*, 48(3), 419–451. <https://doi.org/10.1007/s11186-019-09347-3>
- de Moor, J., & Wahlström, M. (2022). Environmental movements and their political context. In M. Grasso & M. Giugni (Eds.), *The Routledge handbook of environmental movements* (pp. 263–277). Routledge.
- Dekker, D., Krackhardt, D., & Snijders, T. A. B. (2007). Sensitivity of MRQAP tests to collinearity and autocorrelation conditions. *Psychometrika*, 72(4), 563–581. <https://doi.org/10.1007/s11336-007-9016-1>
- della Porta, D., & Tarrow, S. (1986). Unwanted children: Political violence and the cycle of protest in Italy, 1966–1973. *European Journal of Political Research*, 14(5/6), 607–632. <https://doi.org/10.1111/j.1475-6765.1986.tb00852.x>
- Desmond, M. (2014). Relational ethnography. *Theory and Society*, 43(5), 547–579. <https://doi.org/10.1007/s11186-014-9232-5>
- Di Gregorio, M. (2012). Networking in environmental movement organisation coalitions: Interest, values or discourse? *Environmental Politics*, 21(1), 1–25. <https://doi.org/10.1080/09644016.2011.643366>

- Diani, M. (1992). The concept of social movement. *The Sociological Review*, 40(1), 1–25. <https://doi.org/10.1111/j.1467-954X.1992.tb02943.x>
- Diani, M. (1995a). *Green networks: A structural analysis of the Italian environmental movement*. Edinburgh University Press.
- Diani, M. (1995b). Le reti di movimento: Una prospettiva di analisi. *Rassegna Italiana di Sociologia*, 36(3), 341–372.
- Diani, M. (2000). Simmel to Rokkan and beyond: Towards a network theory of (new) social movements. *European Journal of Social Theory*, 3(4), 387–406. <https://doi.org/10.1177/1368431002224868>
- Diani, M. (2015). *The cement of civil society*. Cambridge University Press.
- Diani, M. (2022). From environmental (movement) organizations to the organizing of environmental collective action. In M. Grasso & M. Giugni (Eds.), *The Routledge Handbook of environmental movements* (pp. 293–309). Routledge.
- Diani, M. (2023). The relational preconditions of trust in collective action fields. *International Journal of Comparative Sociology*, 65(4), 517–536. <https://doi.org/10.1177/00207152231220602>
- Diani, M., & Mische, A. (2015). Network approaches and social movements. In D. della Porta & M. Diani (Eds.), *The Oxford handbook of social movements* (pp. 306–324). Oxford University Press.
- Diani, M., & Pilati, K. (2011). Interests, identities, and relations: Drawing boundaries in civic organizational fields. *Mobilization: An International Quarterly*, 16(3), 265–282. <https://doi.org/10.17813/mai.16.3.k301j7n67p472m17>
- Diani, M., Ernstson, H., & Jasny, L. (2018). “Right to the city” and the structure of civic organizational fields: Evidence from Cape Town. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 29, 637–652. <https://doi.org/10.1007/s11266-018-9958-1>
- Diani, M., Lindsay, I., & Purdue, D. (2010). Sustained interactions? Social movements and coalitions in local settings. In N. Van Dyke & H. J. McCammon (Eds.), *Strategic alliances: Coalition building in social movements* (pp. 219–238). University of Minnesota Press.
- Fernández Sobrado, J. M., & Antolín Iria, J. E. (2000). Estructura organizativa de los nuevos movimientos sociales en el País Vasco: Claves para su comprensión. *Política y Sociedad*, 35, 153–164.
- Fillieule, O., & Jiménez, M. (2003). The methodology of protest event analysis and the media politics of reporting environmental protest events. In C. Rootes (Ed.), *Environmental protest in Western Europe* (pp. 258–279). Oxford University Press.
- Fishman, R. M. (2019). *Democratic practice: Origins of the Iberian divide in political inclusion*. Oxford University Press.
- Gronow, A., Wagner, P., & Ylä-Anttila, T. (2020). Explaining collaboration in consensual and conflictual governance networks. *Public Administration*, 98(3), 730–745. <https://doi.org/10.1111/padm.12641>
- Guelke, A. (2012). *Politics in deeply divided societies*. Polity.
- Gunzelmann, H. J. (2024). How critical junctures shape secessionist movement cohesion: Strategies, framing processes, and interorganizational relations before and after the 2017 referendum in Catalonia. *Journal of Peace Research*, 62(4), 961–975. <https://doi.org/10.1177/00223433241258368>
- Hadden, J. (2015). *Networks in contention*. Cambridge University Press.
- Hocke, P. (1999). Determining the selection bias in local and national newspaper reports. In D. Rucht, R. Koopmans, & F. Neidhardt (Eds.), *Acts of dissent* (pp. 131–163). Rowman & Littlefield.
- Hoffmann, M., Steinhilper, E., & Bauer, K. (2025). Fields of contention as a prism: Toward a nuanced role of parties and civil society actors in protest interactions. *Social Movement Studies*, 24(1), 39–58. <https://doi.org/10.1080/14742837.2022.2158074>

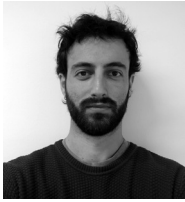
- Hutter, S. (2014). Protest event analysis and its offspring. In D. della Porta (Ed.), *Methodological practices in social movement research* (pp. 335–367). Oxford University Press.
- Ibarra, P., & de la Peña, A. (2004). *De la confrontación militante a la cooperación pragmática: Nuevas formas de acción colectiva en Euskadi*. Catarata.
- Ingold, K., Christopoulos, D., & Fischer, M. (2022). Resilience in political networks. In E. Lazega, T. A. B. Snijders, & R. Wittek (Eds.), *A research agenda for social networks and social resilience* (pp. 115–130). Edward Elgar Publishing.
- Iraola, I., Bergantiños, N., Epelde, M., Sagastizabal, M., & Zabalo, J. (2023). Is the national question a problem for social movements? Activist discourses from the Basque Country. *Ethnopolitics*, 24(3), 241–259. <https://doi.org/10.1080/17449057.2023.2246190>
- Jones, A. W., Hutchinson, R. N., Van Dyke, N., Gates, L., & Companion, M. (2001). Coalition form and mobilization effectiveness in local social movements. *Sociological Spectrum*, 21(2), 207–231. <https://doi.org/10.1080/02732170121587>
- Kammerer, M., Wagner, P. M., Gronow, A., Ylä-Anttila, T., Fisher, D. R., & Sun-Jin, Y. (2021). What explains collaboration in high and low conflict contexts? Comparing climate change policy networks in four countries. *Policy Studies Journal*, 49(4), 1065–1086. <https://doi.org/10.1111/psj.12422>
- Knoke, D., Diani, M., Hollway, J., & Christopoulos, D. (2021). *Multimodal political networks*. Cambridge University Press.
- Koopmans, R., & Rucht, D. (2002). Protest event analysis. In B. Klandermans & S. Staggenborg (Eds.), *Methods of social movement research* (pp. 231–259). University of Minnesota Press.
- Krivitsky, P. N., & Handcock, M. S. (2014). A separable model for dynamic networks. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 76(1), 29–46. <https://doi.org/10.1111/rssb.12014>
- Leifeld, P. (2017). *dna: Discourse Network Analyzer (DNA)*, v2.0. <https://github.com/leifeld/dna/releases?page=2> (Original work published 2013)
- Lerner, J., & Lomi, A. (2023). Relational hyperevent models for polyadic interaction networks. *Journal of the Royal Statistical Society Series A: Statistics in Society*, 186(3), 577–600. <https://doi.org/10.1093/jrsssa/qnac012>
- Letamendia, A. (2011). Represión legal y vínculos organizacionales. El caso del conflicto vasco. In P. Ibarra & M. Cortina (Eds.), *Recuperando la radicalidad* (pp. 149–169). Hacer.
- Letamendia, A. (2019). *Las transformaciones de la movilización social en Euskal Herria: Del posfranquismo a la década de 2010*. Fundación Betiko.
- López Romo, R. (2008, September 17–19). *Tiñendo la patria de verde y violeta. Las relaciones del nacionalismo vasco radical con los movimientos antinuclear y feminista en la Transición*. IX Congreso de la Asociación de Historia Contemporánea, Universidad de Murcia, Spain. https://www.arovite.com/documentos/2008_Lopez.pdf
- Lusher, D., & Ackland, R. (2011). A relational hyperlink analysis of an online social movement. *Journal of Social Structure*, 12(5), 1–45. <https://doi.org/10.21307/joss-2019-034>
- Martin, J. L., & Gregg, F. (2015). Was Bourdieu a field theorist? In M. Hilgers & E. Mangez (Eds.), *Bourdieu's theory of social fields* (pp. 39–61). Routledge.
- Martínez Palacios, J., & Barcena, I. (2012). Conflictos socioambientales, democracia y ciudadanía ecológica. Un análisis comparado entre las Comunidades Autónomas de Cataluña y el País Vasco. *Revista Española de Ciencia Política*, 28, 31–54.
- Martínez Palacios, J., & Barcena, I. (2013). Environmental conflicts and injustices. Fragility and resistance in Basque socio-environmental conflicts. *Partecipazione e Conflitto*, 6(1), 14–39. <https://doi.org/10.3280/PACO2013-001002>

- McAdam, D. (1996). Conceptual origins, current problems, future directions. In D. McAdam, J. D. McCarthy, & M. N. Zald (Eds.), *Comparative perspectives on social movements* (pp. 23–40). Cambridge University Press.
- McAdam, D., & Sewell, W. H. (2001). It's about time: Temporality in the study of social movements and revolutions. In R. Aminzade (Ed.), *Silence and voice in the study of contentious politics* (pp. 89–125). Cambridge University Press.
- McAdam, D., Tarrow, S., & Tilly, C. (2001). *Dynamics of contention*. Cambridge University Press.
- McCammon, H., & Campbell, K. (2002). Allies on the road to victory: Coalition formation between the suffragists and the Woman's Christian Temperance Union. *Mobilization: An International Quarterly*, 7(3), 231–251. <https://doi.org/10.17813/mai.7.3.p61v81l7914865qv>
- McCammon, H. J., & Moon, M. (2015). Social movement coalitions. In D. della Porta & M. Diani (Eds.), *The Oxford handbook of social movements* (pp. 326–339). Oxford University Press.
- McCammon, H. J., & Van Dyke, N. (2010). Applying qualitative comparative analysis to empirical studies on social movement coalition formation. In N. Van Dyke & H. J. McCammon (Eds.), *Strategic alliances: Coalition building and social movements* (pp. 292–315). University of Minnesota Press.
- McCarthy, J. D., & Zald, M. N. (1977). Resource mobilization and social movements: A partial theory. *American Journal of Sociology*, 82(6), 1212–1241. <https://doi.org/10.1086/226464>
- Melucci, A. (1989). *Nomads of the present: Social movements and individual needs in contemporary society*. Hutchinson Radius.
- Meyer, D., & Corrigall-Brown, C. (2005). Coalitions and political context: U.S. movements against wars in Iraq. *Mobilization: An International Quarterly*, 10(3), 327–344. <https://doi.org/10.17813/mai.10.3.f8u6t4u2708kw442>
- Mische, A. (2003). Cross-talk in movements: Reconceiving the culture-network link. In M. Diani & D. McAdam (Eds.), *Social movements and networks* (pp. 258–280). Oxford University Press.
- Mische, A. (2008). *Partisan publics: Communication and contention across Brazilian youth activist networks*. Princeton University Press.
- Obach, B. K. (2004). *Labor and the environmental movement: The quest for common ground*. MIT Press.
- Obach, B. K. (2010). Political opportunity and social movement coalitions: The role of policy segmentation and nonprofit tax law. In N. Van Dyke & H. J. McCammon (Eds.), *Strategic alliances: Coalition building and social movements* (pp. 197–218). University of Minnesota Press.
- Okamoto, D. G. (2010). Organizing across ethnic boundaries in the post-civil rights era: Asian American panethnic coalitions. In N. Van Dyke & H. J. McCammon (Eds.), *Strategic alliances: Coalition building and social movements* (pp. 143–169). University of Minnesota Press.
- Oncini, F., & Ciordia, A. (2024). Strategic action fields through digital network data: An examination of charitable food provision in Greater Manchester. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 35, 338–351. <https://doi.org/10.1007/s11266-023-00598-4>
- Orbegozo Terradillos, J., Castro, I. A., & Zarrabeitia Bilbao, E. (2020). El movimiento antifracking en tierras vascas: Relato, movilización y disputa de la evidencia científica. *Revista de Paz y Conflictos*, 13(1), 203–232.
- Poloni-Staudinger, L. (2009). Why cooperate? Cooperation among environmental groups in the United Kingdom, France, and Germany. *Mobilization: An International Quarterly*, 14(3), 375–396. <https://doi.org/10.17813/mai.14.3.56415g86g5h07044>
- Portos, M. (2021). *Grievances and public protests: Political mobilisation in Spain in the age of austerity*. Palgrave Macmillan. <https://doi.org/10.1007/978-3-030-53405-9>
- Portos, M., & Carvalho, T. (2022). Alliance building and eventful protests: Comparing Spanish and Portuguese trajectories under the Great Recession. *Social Movement Studies*, 21(1/2), 42–61. <https://doi.org/10.1080/14742837.2019.1681957>

- Reese, E., Petit, C., & Meyer, D. S. (2010). Sudden mobilization: Movement crossovers, threats, and the surprising rise of the U.S. antiwar movement. In N. Van Dyke & H. J. McCammon (Eds.), *Strategic alliances: Coalition building and social movements* (pp. 266–291). University of Minnesota Press.
- Rootes, C. (1999). Environmental movements: From the local to global. In C. Rootes (Ed.), *Environmental movements: Local, national and global* (pp. 1–12). Frank Cass.
- Rootes, C. (2004). Environmental movements. In D. A. Snow, S. A. Soule, & H. Kriesi (Eds.), *The Blackwell companion to social movements* (pp. 608–640). Blackwell.
- Rose, F. (2000). *Coalitions across the class divide: Lessons from the labor, peace, and environmental movements*. Cornell University Press.
- Rucht, D. (1989). Environmental movement organizations in West Germany and France: Structure and interorganizational relations. *International Social Movement Research*, 2, 61–94.
- Rucht, D. (1996). The impact of national contexts on social movement structures: A cross-movement and cross-national comparison. In D. McAdam, J. D. McCarthy, & M. N. Zald (Eds.), *Comparative perspectives on social movements* (pp. 185–204). Cambridge University Press.
- Rupp, L. J., & Taylor, V. A. (1987). *Survival in the doldrums: The American women's rights movement, 1945 to the 1960s*. Oxford University Press.
- Sampson, R. J., McAdam, D., MacIndoe, H., & Weffer-Elizondo, S. (2005). Civil society reconsidered: The durable nature and community structure of collective civic action. *American Journal of Sociology*, 111(3), 673–714. <https://doi.org/10.1086/497351>
- Satoh, K., Gronow, A., Ylä-Anttila, T., Delicado, A., Schmidt, L., Swarnakar, P., Wagner, P. M., & Yun, S.-J. (2025). Coalition opportunity structures and advocacy coordination in consensus and majoritarian democracies. *Policy Studies Journal*. Advance online publication. <https://doi.org/10.1111/psj.70067>
- Saunders, C. (2007a). Comparing environmental movement networks in periods of latency and visibility. *Graduate Journal of Social Science*, 4(1), 109–139.
- Saunders, C. (2007b). Using social network analysis to explore social movements: A relational approach. *Social Movement Studies*, 6(3), 227–243. <https://doi.org/10.1080/14742830701777769>
- Saunders, C. (2008). Double-edged swords? Collective identity and solidarity in the environment movement. *The British Journal of Sociology*, 59(2), 227–253. <https://doi.org/10.1111/j.1468-4446.2008.00191.x>
- Saunders, C. (2009). It's not just structural: Social movements are not homogenous responses to structural features, but networks shaped by organisational strategies and status. *Sociological Research Online*, 14(1), 26–41. <https://doi.org/10.5153/sro.1856>
- Saunders, C. (2013). *Environmental networks and social movement theory*. Bloomsbury.
- Saunders, C., Nadel, S., & Walley, B. (2025). It's not just structural: Political context and London's environmental networks twenty-one years later. *Politics and Governance*, 13, Article 10137. <https://doi.org/10.17645/pol.g.10137>
- Sewell, W. H. (1996). Historical events as transformations of structures: Inventing revolution at the Bastille. *Theory and Society*, 25(6), 841–881. <https://doi.org/10.1007/BF00159818>
- Sewell, W. H. (2005). *Logics of history: Social theory and social transformation*. University of Chicago Press.
- Simpson, C. R. (2015). Multiplexity and strategic alliances: The relational embeddedness of coalitions in social movement organisational fields. *Social Networks*, 42, 42–59. <https://doi.org/10.1016/j.socnet.2015.02.007>
- Snijders, T. A. B. (1996). Stochastic actor-oriented models for network change. *The Journal of Mathematical Sociology*, 21(1/2), 149–172. <https://doi.org/10.1080/0022250X.1996.9990178>
- Snijders, T. A. B., van de Bunt, G. G., & Steglich, C. E. G. (2010). Introduction to stochastic actor-based models for network dynamics. *Social Networks*, 32(1), 44–60. <https://doi.org/10.1016/j.socnet.2009.02.004>

- Spekkink, W. A. H., & Boons, F. A. A. (2016). The emergence of collaborations. *Journal of Public Administration Research and Theory*, 26(4), 613–630. <https://doi.org/10.1093/jopart/muv030>
- Staggenborg, S. (1986). Coalition work in the pro-choice movement: Organizational and environmental opportunities and obstacles. *Social Problems*, 33(5), 374–390. <https://doi.org/10.2307/800657>
- Staggenborg, S. (1993). Critical events and the mobilization of the pro-choice movement. *Research in Political Sociology*, 6(1), 319–345.
- Steinhilper, E., & Hoffmann, M. (2024). Relational sediments in the backwash of protest waves: Exploring network consequences of collective action. *Mobilization: An International Quarterly*, 29(2), 167–183. <https://doi.org/10.17813/1086-671X-29-2-167>
- Tajfel, H. (Ed.). (1978). *Differentiation between social groups: Studies in the social psychology of intergroup relations*. Academic Press.
- Taraktas, B. (2022). Tolerable disagreements: Collective action capacity & shape of coalitions. *Social Networks*, 68, 15–30. <https://doi.org/10.1016/j.socnet.2021.04.002>
- Taylor, V. (1989). Social movement continuity: The women's movement in abeyance. *American Sociological Review*, 54(5), 761–775. <https://doi.org/10.2307/2117752>
- Tejerina, B., Fernández Sobrado, J. M., & Aierdi Urraza, X. (1995). *Sociedad civil, protesta y movimientos sociales en el País Vasco: Los límites de la teoría de la movilización de recursos*. Servicio Central de Publicaciones del Gobierno Vasco.
- Tilly, C. (2004). Social boundary mechanisms. *Philosophy of the Social Sciences*, 34(2), 211–236. <https://doi.org/10.1177/0048393103262551>
- Tilly, C. (2005). *Identities, boundaries and social ties*. Routledge.
- Tilly, C., & Tarrow, S. G. (2015). *Contentious politics* (2nd ed.). Oxford University Press.
- Valiente, C. (2015). Social movements in abeyance in non-democracies: The women's movement in Franco's Spain. In P. G. Coy (Ed.), *Research in social movements, conflicts and change* (Vol. 38, pp. 259–290). Emerald Group Publishing Limited. <https://doi.org/10.1108/S0163-786X20150000038009>
- Van Dyke, N. (2003). Crossing movement boundaries: Factors that facilitate coalition protest by American college students, 1930–1990. *Social Problems*, 50(2), 226–250. <https://doi.org/10.1525/sp.2003.50.2.226>
- Van Dyke, N., & Amos, B. (2017). Social movement coalitions: Formation, longevity, and success. *Sociology Compass*, 11(7), Article e12489. <https://doi.org/10.1111/soc4.12489>
- Van Dyke, N., & McCammon, H. J. (Eds.). (2010). *Strategic alliances: Coalition building and social movements*. University of Minnesota Press.
- Wang, D. J., & Soule, S. A. (2012). Social movement organizational collaboration: Networks of learning and the diffusion of protest tactics, 1960–1995. *American Journal of Sociology*, 117(6), 1674–1722. <https://doi.org/10.1086/664685>
- Wang, D., Piazza, A., & Soule, S. A. (2018). Boundary-spanning in social movements: Antecedents and outcomes. *Annual Review of Sociology*, 44(1), 167–187. <https://doi.org/10.1146/annurev-soc-073117-041258>
- Weible, C. M., Crawford, A. M., Fullerton, A. H., Gabehart, K. M., Imhoff, K. E., & Mariani, G. (2025). Deep core advocacy coalitions. *Policy and Society*, 44(2), 184–199. <https://doi.org/10.1093/polsoc/puaf003>
- Zietsma, C., Groenewegen, P., Logue, D. M., & Hinings, C. R. (2017). Field or fields? Building the scaffolding for cumulation of research on institutional fields. *Academy of Management Annals*, 11(1), 391–450. <https://doi.org/10.5465/annals.2014.0052>

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Forests in the Spotlight: Discourse Coalitions and Storylines Shaping the EU Nature Restoration Regulation

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Abstract

The adoption of the proposal for an EU Nature Restoration Regulation (EU-NRR) in 2022 sparked controversial debates across environmental policy domains. The intensity of debate during the ordinary legislative procedure was evident in the numerous amendments and close voting outcomes within the EU legislative institutions. Although the multi-level and multi-sectoral nature of the EU environmental policy arena provides numerous opportunities and venues for political networks to influence policy processes and their outcomes, the coalition dynamics and discursive power of environmental networks remain under-researched. These dynamics are particularly evident in environmental politics, where a variety of state and non-state actors, shaped by different interests and power structures, attempt to influence political processes based on their interpretations of reality. Drawing on the discourse coalition framework and the coalition magnet concept, this study examines how coalition formation and discursive power influence policy-making processes and their outcomes. Using discourse network analysis (DNA), we analyze the policy debate around the EU-NRR to: (a) identify supporting and opposing discourse coalitions, (b) uncover forest-related storylines, and (c) assess the influence of discourse coalitions and their storylines on the policy-making process and its outcome. In doing so, we place particular emphasis on forest ecosystems, which have historically played a minor role in EU policies. Based on an analysis of 328 public statements and a process tracing of key policy outputs, this study highlights how coalition formation and discursive power dynamics within political networks play a critical role in shaping environmental policy-making. Furthermore, it provides valuable insights into the development of the EU-NRR—the EU’s first directly applicable and legally binding forest-related policy instrument.

Keywords

discourse; discourse coalitions; EU Nature Restoration Regulation; forest restoration; storylines

1. Introduction

The restoration of natural ecosystems has gained global importance. With the adoption of the EU Green Deal in 2019, the European Commission (EC) outlined ambitious goals to make Europe the first carbon-neutral continent by 2050. In this context, the preservation and restoration of ecosystems was established as an important policy priority. Mainly targeting agricultural, forest, and water ecosystems, the EC put forward a legislative proposal for an EU Nature Restoration Regulation (EU-NRR) in June 2022 (EC, 2022b). This proposal aimed to foster the continuous, long-term recovery of biodiversity, achieve overarching climate goals, and meet the EU's international commitments, including those under the Convention on Biological Diversity. In so doing, the EC attempted to move beyond voluntary biodiversity protection commitments that have yielded unsatisfactory results in the past, and to improve the conservation status of different ecosystem types and species protected within and outside the Natura 2000 network of protected areas established under the EU Habitats Directive (Council Directive of 21 May 1992, 1992). Additionally, it aimed to close the continuous regulatory gap for forests at the EU level by establishing legally binding restoration targets for forest ecosystems (EC, 2022a).

Following the adoption of this legislative proposal, it underwent an “unprecedented rollercoaster” (Cliquet et al., 2024, p. 2) in the history of EU environmental policy-making and received both substantial approval as well as significant political opposition (Hering et al., 2023; Tosun, 2023). Although the political negotiations occurred during a period of widespread unrest in agricultural and environmental policy, both at the EU and national levels, culminating in heated farmer protests across the EU in 2023 and 2024 (Finger et al., 2024), and despite strong opposition from influential actors as well as multiple last-minute attempts to derail the legislative process, a qualified majority was ultimately reached in the Council in June 2024. This outcome ran counter to broader political trends, in which EU environmental policy was being dismantled.

We interpret the adoption of the EU-NRR as a significant shift in EU environmental policy, particularly given its provisions for forest ecosystems. Historically, forestry matters in the EU have been governed at the national level. To date, several EU member states (EU-MS) have largely resisted greater EU involvement due to concerns about subsidiarity and the absence of a formal legal competence for forest policy (Edwards & Kleinschmit, 2013; Roux et al., 2025; Winkel & Sotirov, 2016). Over time, an increasing number of forest-related policies have emerged at the EU level from areas of shared competence (Gordeeva et al., 2025; Winkel et al., 2013, as cited in Pülzl et al., 2013). Recent notable examples include the EU Biodiversity Strategy for 2030 (EC, 2020), which calls for the strict protection of primary and old-growth forests within the EU, and the EU Deforestation Regulation (Regulation of the European Parliament and of the Council of 31 May 2023, 2023), aimed at reducing the EU's contribution to global deforestation and forest degradation (Berning & Sotirov, 2023). Collectively, these policy developments are often interpreted as the *de facto* establishment of an EU forest policy (Sotirov et al., 2021), a development that has encountered growing opposition from forestry stakeholders and forest-rich EU-MS (Dahm, 2021; Vanttinen, 2022).

This raises the crucial question of how the adoption of the EU-NRR, a significant shift in EU forest and environmental policy, came about, despite strong opposition and the EU's lack of formal legislative competence in forest policy. To answer this question, this study (a) identifies the supporting and opposing coalitions that formed during the policy-making process, (b) examines the main arguments and storylines promoted by these policy stakeholders and their coalitions, and (c) assesses how coalitions and their storylines influenced the policy-making process and its outcome, particularly concerning forest ecosystems. We employ a policy network lens as an analytical approach, conceiving of policy-making as a bargaining process between state and non-state actors (Brockhaus & Di Gregorio, 2014; Leifeld, 2011), including political parties, interest groups, and NGOs (Schaub & Metz, 2020). We situate this study within the literature on the politics of environmental networks, which has provided intriguing insights into the influence of coalition formation, power dynamics, as well as collaboration and conflict between policy actors on the policy process (Ingold, 2011; Ingold & Leifeld, 2016; Schaub & Braunbeck, 2020; Wagner et al., 2023; Weible & Sabatier, 2005).

EU environmental policy processes offer multiple venues for participation and influence by various state and non-state actors (Mahoney, 2004; Marks et al., 1996). In the case of the EU-NRR, the political pressure and the strong influence of various actors received widespread public and media attention (Karjalainen, 2023; Mayr, 2023; Taylor, 2023). However, there is limited scientific understanding of how actors involved in the debate shaped the policy process and its outcome. One example is provided by Cliquet et al. (2024), who analyze the development of the main policy outputs leading up to the text agreed upon in the trilogue negotiations. Hering et al. (2023) provide additional insights, attributing the highly contested nature of the process to the significant regulatory power of the bill. Further analyses of EU environmental policy processes (Sotirov et al., 2021) and trade-related policies (Berning & Sotirov, 2024; Sotirov et al., 2017) observed similarly intense debates and coalition struggles. However, in the field of EU forest-related environmental policy, empirical studies examining the influence of discourse and coalition formation on policy and practice remain limited, with De Koning et al. (2014) providing a notable contribution. Moreover, while further analyses of forest-related discourse emphasize the need to direct the focus to the politics and the institutionalization of discourse (Winkel et al., 2011), as well as the interplay between local and global factors (Edwards et al., 2022; Leipold, 2014), Leipold et al. (2019) found a lack of quantitative approaches to discourse analysis in the field of forest policy.

Discourse, hereafter defined as ensembles of ideas and concepts that are produced and transformed in a particular set of practices and through which meaning is given to physical and social phenomena (Hajer, 1993), can play a crucial role in political and policy processes (Hajer, 2002; Leifeld, 2017; Leifeld & Haunss, 2012; Schmidt, 2008; Schmidt & Radaelli, 2004). It can constrain and precondition the set of feasible political actions, thereby shaping policy outcomes (Hajer, 1997; Hajer & Versteeg, 2005; Leifeld, 2017; Schmidt & Radaelli, 2004), including processes of both policy stasis and change (Leipold et al., 2019). Moreover, discourse can play a crucial role in shaping political agendas and influencing public opinion, which, in turn, affects political decision-making and policy implementation (Leifeld, 2017).

Numerous studies have explored the influence of discourse and network formation in political processes (Fisher et al., 2013; Ghinoi & Steiner, 2020; Kuenzler et al., 2025; Nagel & Bravo-Laguna, 2022; Schaub, 2021; Schaub & Braunbeck, 2020; Shanahan et al., 2011). These network approaches to discourse and narrative analysis have mainly explored the diversity of policy positions among actors, their relationships,

and how their interactions influence political outcomes (Schaub & Metz, 2020). By integrating discourse and network analysis with process tracing of policy documents and broader political developments, this study aims to advance the limited understanding of how coalition formation, discourse, and the interplay of power and ideas shape policy-making processes and outcomes in the EU environmental policy arena, particularly in the increasingly polarized area of forest and environmental policy.

The policy-making process of the EU-NRR, characterized by intense debates, narrow votes, and significant public and political attention, provides a compelling case for examining the influence of discourse, coalition formation, and the exercise of discursive power in environmental politics. This is mainly due to the pronounced importance of discourse in highly polarized and politicized decision-making contexts (Leifeld & Haunss, 2012). Against this backdrop, the present study goes beyond analyzing discourse and coalition formation to also evaluate their potential impact on policy-making processes and their outcomes. Furthermore, the study contributes to the limited body of literature on EU forest and environmental discourse by incorporating a quantitative approach to analyzing discourse and coalition formation.

We begin by outlining our conceptual framework and theoretical underpinnings. After explaining our research strategy, we present our empirical findings on discourse coalitions, forest-related storylines, and the legislative process of the EU-NRR. We conclude by discussing our empirical findings and offering final remarks.

2. Conceptual Framework and Theoretical Underpinnings

2.1. Discourse Coalitions and Storylines

This study builds on argumentative discourse analysis and Hajer's discourse coalition framework (Hajer, 1993, 2006). Both highlight the critical role of ideas and power in shaping discourse, coalition formation, and policy-making processes. Argumentative discourse analysis aims to reveal the underlying meanings of statements by systematically analyzing their argumentative contributions in policy debates. It pays particular attention to shared and contested positions and justifications (Billig, 1996; Hajer, 2002), providing insights on how different policy actors position themselves within the discursive space. According to Hajer (1997), discursive spaces typically consist of multiple discourse coalitions vying for discursive hegemony. Discourse coalitions are groups of actors united by a shared social construct. To influence policy processes, they employ shared arguments to contest opposing positions, seeking to influence policy-making in line with their interests and ideas.

Hajer interprets politics as a "process in which different actors from various backgrounds form specific coalitions around particular storylines" (Hajer, 2006, p. 71) that give meaning to specific physical or social phenomena. Storylines act as the medium through which actors attempt to impose their view of reality, advocate for specific social positions and practices, and challenge alternative social arrangements (Hajer, 2006). Storylines play a crucial role in environmental political processes. They can simplify the discursive complexity of environmental issues, add a ritualistic character and permanence to policy debates, and enhance actors' understanding and discursive competence (Hajer, 1997). Beyond argumentative persuasion, coalitions also leverage manipulation and power dynamics to shape political and policy processes in line with their ideas and interests (Hajer, 1993).

The success of a discourse coalition in shaping politics according to its interests and ideas can be evaluated using several criteria (Hajer, 1993; Leifeld & Haunss, 2012). First, successful discourse coalitions are adept at integrating a variety of arguments into broad yet consistent storylines. Second, members of successful coalitions exhibit strong ideational alignment, remain united against competing coalitions, and attract broad public support. Third, successful coalitions dominate the discursive space, and this dominance is reflected in institutional practices (Hajer, 1993).

A discourse becomes hegemonic when two conditions are met (Hajer, 1997). First, the discourse reaches saturation. That is, it begins to dominate how meaning is assigned to specific phenomena. Second, it becomes institutionalized, with theoretical concepts and ideas being translated into institutional practices, such as concrete policies and organizational structures. Policy change is primarily driven by the ability of actor coalitions to persuade officeholders who share their views and possess political leverage and decision-making authority to support them (Boin et al., 2009; Sotirov & Winkel, 2016).

2.2. Coalition Magnets

Since Hajer leaves the circumstances under which social constructs form and how they provide ideational cohesion for coalitions largely open (Wallaschek, 2020), this study further draws on the coalition magnet concept (Béland & Cox, 2016). Incorporating the coalition magnet approach into Hajer's discourse coalition framework has proven helpful in addressing criticisms about the ambiguous treatment of agency and the role of ideas in ideational research (Wallaschek, 2020). Moreover, it has offered valuable empirical insights into coalition formation in financial crisis management (Kiess et al., 2017) and international health policy (Khayatadeh-Mahani et al., 2019).

The coalition magnet approach acknowledges the critical role of compelling ideas in coalition formation, emphasizing the importance of power in understanding the political effects of ideas. Compelling ideas are typically characterized by high valence and ambiguity. They can attract a broad range of constituencies and actor groups, thereby reinforcing coalition formation. Their vagueness and interpretive flexibility allow various stakeholders to align the ideas with their interests, thereby accommodating heterogeneous preferences and fostering broad social consensus. Accordingly, coalition magnets are defined as ideas that appeal to a variety of actors and groups, and are used strategically by policy entrepreneurs to frame interests, mobilize support, and build coalitions to achieve political goals (Béland & Cox, 2016).

For an idea to function as a coalition magnet, three conditions must be met (Béland & Cox, 2016). First, policy entrepreneurs must strategically deploy the idea as they search for new language to frame policy problems. Second, key decision-makers must adopt and promote the idea, thereby granting it legitimacy. Third, the idea must activate a policy preference among actors who were previously less engaged with the issue. Ideas that lend themselves to multiple interpretations and carry a strong positive and emotional resonance are particularly valuable to policy entrepreneurs seeking to build broad coalitions. Such ideas can help shift power dynamics and tip the balance in favor of their preferred policy outcome (Béland & Cox, 2016).

3. Methods and Material

3.1. Discourse Network Analysis

This study employs DNA (Leifeld, 2017), which conceptualizes political discourse as a network phenomenon, highlighting the interdependence of arguments presented in policy debates. It combines qualitative content analysis of text data with social network analysis, offering new insights into the dynamic development of policy debates (Nagel & Bravo-Laguna, 2022). DNA enables the identification of structures within policy debates, including actor coalitions, brokerage, and polarization, based on shared and contested storylines. We used the Discourse Network Analyzer software (version 3.0) to analyze written and verbal statements made by policy actors involved in the policy debate surrounding the EU-NRR and to transform these statements into network matrices, connecting actors through storylines (Leifeld, 2017).

As there is a diversity of policy actors involved in environmental policy-making (Hajer, 1997; Jordan & Lenschow, 2010), we covered a wide range of organizations. We conducted an in-depth analysis of (a) written statements submitted during a public consultation between June and August 2022, following the adoption of the legislative proposal ($n = 209$), (b) written statements from the main parliamentary groups, along with their contributions during public parliamentary debates between 2022 and 2024 ($n = 71$), and (c) oral statements made by representatives of national ministries during two Environment Council meetings held in March and June 2024 ($n = 48$). Statements written in languages other than English or German were translated into English using the DeepL Translate Pro AI software. We downloaded oral statements from the Council meetings in their official English translations and transcribed them prior to coding.

Despite widespread media coverage and its significance in the policy debate, this study primarily focuses on statements made by policy actors within established policy forums. We do so for two reasons. First, the study focuses on how state and non-state actors strategically construct and articulate policy positions through original statements, particularly those who are directly involved in, affected by, and actively shaping policy-making processes and their outcomes. Second, since we consider policy actors to be key agents who shape, negotiate, and implement policy, concentrating on their statements enables a more direct assessment of coalition formation, the impact of these coalitions on outcomes of policy processes, and their exercise of power.

Throughout the study, we deliberately use the terms “discourse networks” and “policy networks.” This is justified by the fact that we studied the impact of shared and contested storylines (i.e., the discourse network) on the formation of actor coalitions in established policy forums (i.e., the policy network). Furthermore, we situate this study at a macro-analytical level, covering the entire policy-making process of the EU-NRR, including the influence of collaboration and conflict among actors on the outcome of the process, rather than just the policy debate itself. Lastly, insights from existing literature on coalition formation in the EU’s forest and environmental policy domain have identified similar network structures (see e.g., Begemann et al., 2025; Berning & Sotirov, 2024; Sotirov et al., 2021), suggesting the identification of a policy network in the present study that extends beyond verbal interaction.

We applied a DNA coding scheme proposed by Leifeld (2017). Because of their expected greater and more sustained influence on political and policy processes (Eijk, 2018; Sabatier & Weible, 2014), we focused on

organizations as the primary actors. We identified the key forest-related storylines promoted by different organizations and their respective stances to uncover the network structures within the policy debate, shaped by both consensual and conflictual storylines. Consistent with Hajer's discourse coalition framework, the identified storylines comprise shared and contested narratives, problem definitions, ideas, and metaphors related to forest ecosystem restoration.

We employed an iterative inductive-deductive coding approach to identify central storylines in the policy debate. Prior to coding the whole dataset, we used a sample of 10 statements—five expected to support the bill and five expected to oppose it. Based on this sample, an intercoder reliability test was conducted with the second author of this study, revealing a high level of agreement on the coding criteria. The first author subsequently coded the remaining statements. Assigning a timestamp to each statement enabled a more detailed analysis of coalition formation throughout the policy-making process.

Statement codes were exported to the Visone visualization software, enabling both visual and quantitative analyses of network structures (Leifeld, 2017). To identify and analyze the formation of supporting and opposing coalitions, we plotted and analyzed average normalized one-mode actor congruence networks (Leifeld, 2013, 2017). In these networks, nodes (i.e., actors) are connected by edges (i.e., lines) if they share a common position. We applied two different algorithms to perform network cluster analysis. First, we used the non-hierarchical Louvain algorithm (Blondel et al., 2008) to assess the network's modularity. This algorithm facilitates the evaluation of network strengths and the identification of clusters within the network structures by grouping nodes into clusters when connections are stronger internally than externally. Additionally, we employed the Backbone algorithm to identify network structures based on the embeddedness of nodes within networks.

To evaluate the cohesiveness of actor coalitions and identify central actors and storylines, we calculated various network statistics, including network modularity, cluster-specific network densities, and standardized degree centralities. Centrality in policy debates can serve as a proxy for an actor's influence on policy processes. It measures the number of actors with whom an actor shares at least one storyline and takes on a value between 0 and 1. A value of 1 indicates maximum centrality, meaning all other actors replicate an actor's storyline. A value of 0 indicates that an actor's storyline is not replicated by other actors, suggesting a less influential role in the policy debate. Moreover, we continuously adjusted edge weights (i.e., strengths of edges) by applying edge weight filters both to the actor and concept network graphs. This approach allowed for more robust analyses of network structures, including the identification of clusters (Leifeld, 2017).

To assess the storylines advanced by different actors during the policy debate, we plotted and analyzed average normalized one-mode concept congruence networks. Here, storylines are connected by edges when they were addressed together by at least one organization (Leifeld, 2013, 2017). Influential storylines were identified based on their centrality in the network and how frequently they were raised in the debate. We further analyzed two-mode subnetworks of the 10 most central actors per supporting and opposing coalition, as determined by the standardized degree centrality (Leifeld, 2013, 2017). The two-mode network, which showcases actors' links with storylines, enabled a more focused analysis of the main storylines employed by the most dominant actors during the policy-making process.

3.2. Process Tracing

To assess the influence of coalition formation and storylines, we traced the broader development of the policy-making process and its main policy outputs. Process tracing enables descriptive and causal inferences about the temporal sequences of events (Collier, 2011) and can provide critical insights into how high-valence and ambiguous ideas shape power dynamics and policy outcomes (Béland & Cox, 2016). The included documents were identified from the official legislative procedure file (COD, 2022/0195). They comprised the Commission proposal (EC, 2022b), opinion papers from the responsible Environment, Public Health and Food Safety Committee (COM ENVI) and the associated Committees on Agriculture and Rural Development (COM AGRI) and Fisheries (COM PECH) as well as from the European Economic and Social Committee and the European Committee of the Regions, parliamentary texts adopted in committee and plenary votes (European Parliament [EP], 2023a, 2024), the agreed text from the trilogue negotiations (EP, 2023b), and the final legislative text (Regulation of the European Parliament and of the Council of 24 June 2024, 2024). The results section focuses on the findings from the main policy outputs, beginning with the legislative proposal, continuing through the text adopted by the EP, and following the trilogue negotiations up to the final legal text.

The explanation of outcome process tracing (Wagemann et al., 2020) focused on both the general legal provisions relevant to forest ecosystems and those explicitly targeting them. We examined how these provisions evolved throughout the policy-making process via text amendments and assessed how the storylines advanced by policy actors and their coalitions are reflected in these changes. The focus on forest-related provisions and amendments addressed all ecosystem types covered by the bill, including overarching restoration goals and targets, implementation, reporting and monitoring periods, derogation clauses, and the use of specific language in the legal text, among others. We opted not to focus solely on forest-specific provisions for two reasons. First, a narrow focus on these provisions was expected to limit the scope for assessing the influence of discourse coalitions and their storylines on the policy-making process. Second, many general provisions (such as reporting requirements) are either directly or indirectly related to forest ecosystems.

The DNA findings were then compared with the process tracing results to draw causal inferences about the relationship between discursive power, coalition formation, changes in policy outputs, and the outcome of the policy-making process.

4. Results

4.1. Discourse Coalitions

The voices of a total of 109 organizations are represented in the analyzed policy debate (see Table A2 in the Supplementary File). The organization types and their percentage shares are shown in Figure 1. Among the most represented organizations were governmental bodies, including national environmental ministries represented in the Council, as well as other national ministries and implementing agencies representing various policy areas (e.g., economy, climate, and agriculture), forest and landowners and their associations, and environmental NGOs (ENGOS).

A noteworthy observation is that several individuals and organizations that participated in public consultation simultaneously represented forestry and agricultural interests. While individual forest and landowners were later grouped under forest and landowner associations in the network graphs, we initially coded them separately to demonstrate their significant role in public consultation. Moreover, the partly identical wording in the statements made during the public consultation revealed that many actors initially categorized as “individuals” were, in fact, directly affiliated with organized groups.

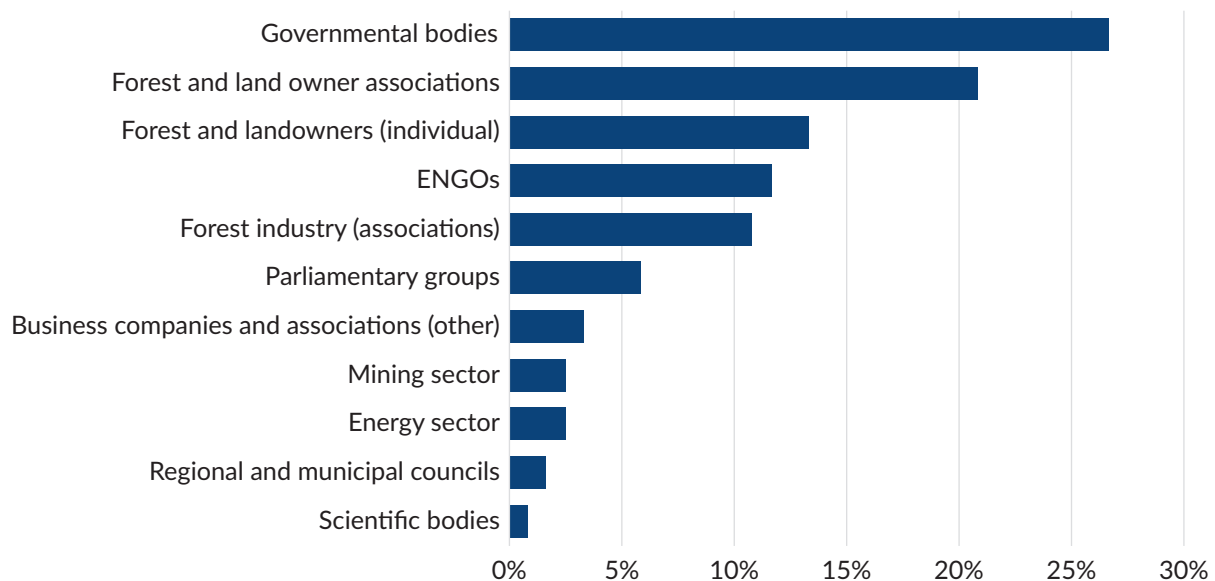


Figure 1. Percentage distribution of organization types participating in the forest-related policy debate.

Figure 2 shows the one-mode actor congruence networks for the periods (a) 2022–2023 and (b) 2022–2024. The cluster analysis and network visualization revealed two overarching discourse coalitions. These two coalitions were consistently confirmed as the edge weights between the nodes were increased progressively (see Figure A5 in the Supplementary File).

The supporting coalition, represented by the cluster on the right-hand side of Figure 2, primarily consists of center-left parliamentary groups (i.e., the Socialists and Democrats [S&D] and the Greens/European Free Alliance [Greens/EFA]), ENGOS and environmental agencies, and the majority of national ministries responsible for environmental policy in the Council. Many of these ministries, particularly those from influential EU-MS, such as Germany and France, joined the supporting coalition by issuing statements in the Council at a later stage of the analyzed policy debate. Members of the supporting coalition largely advocated for ambitious restoration targets and provisions, including for forest ecosystems.

The opposing coalition, represented by the cluster on the left-hand side of Figure 2, consists of center-right parliamentary groups, including the European People’s Party (EPP) and the European Conservatives and Reformists (ECR). It also includes forest and landowner associations, industry representatives from primary sectors such as agriculture, forestry, and mining, as well as a minority of national ministries, particularly from forest-rich and agriculturally oriented EU-MS. These actors frequently criticized the proposal for its perceived unrealistic objectives, its insufficient consideration of landowners’ and industry needs, and the strong influence of the EC in forest policy and management.

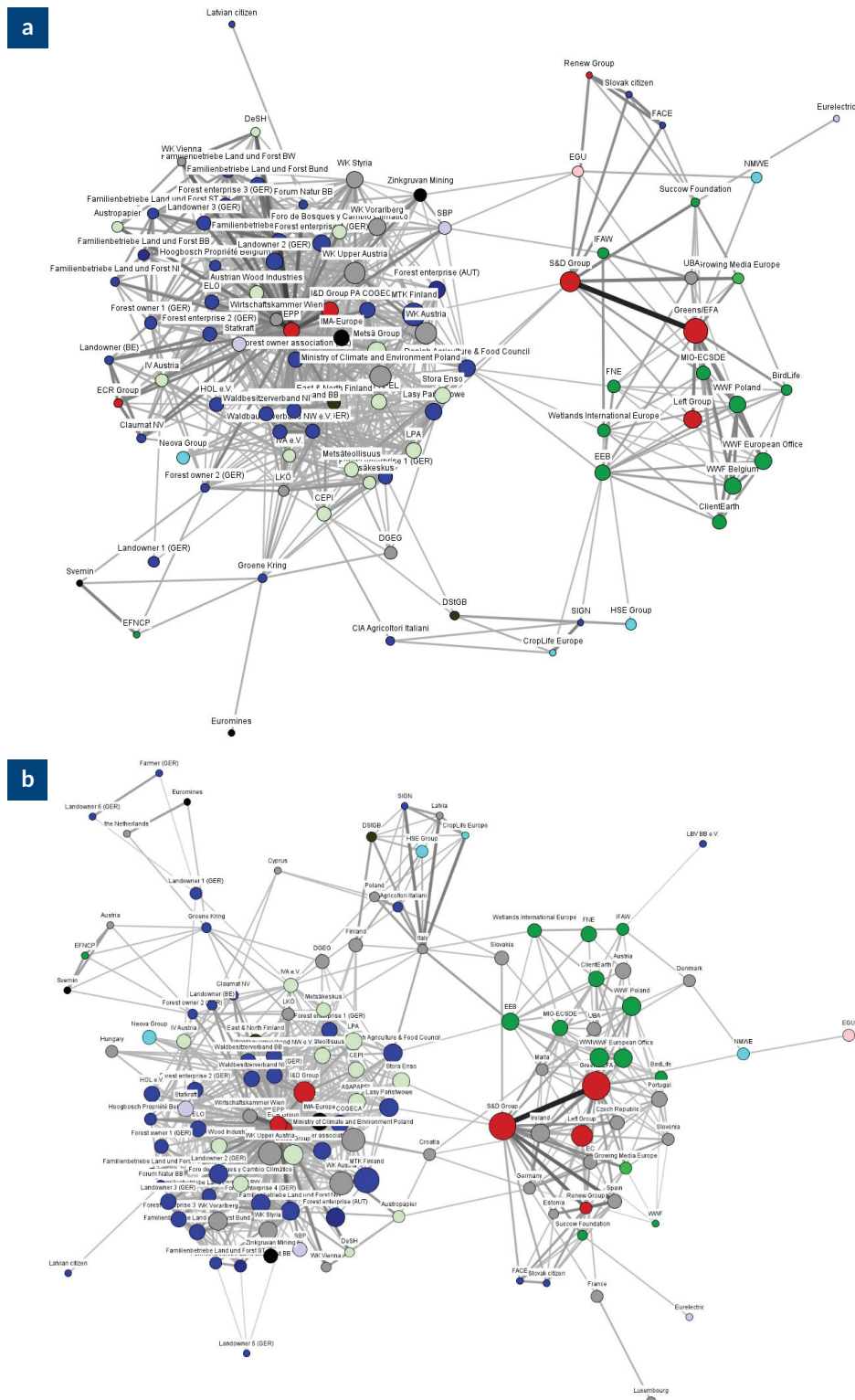


Figure 2. Backbone normalized one-mode actor congruence networks: (a) 2022-2023; (b) 2022-2024. A large node size indicates a high statement frequency during the debate. Thicker and darker lines (edges) between nodes indicate higher edge weights between nodes. Notes: Different node colors represent different organization types: grey = governmental bodies; blue = forest and landowner associations; dark green = NGOs; mint green = forest industry (associations); turquoise = business companies and associations (other); red = parliamentary groups; pink = scientific bodies; black = mining sector; pale violet = energy sector; the full names of all the actors are in Table A1 in the Supplementary File.

The cluster analysis revealed that the opposing coalition not only outnumbered the supporting coalition in terms of member organizations but also exhibited a higher network density, indicating a more substantial level of cohesiveness among its member organizations during the policy debate. At the same time, most of the governmental bodies that participated in the policy debate are part of the supporting coalition (see also Table A2 in the Supplementary File), especially those holding decision-making power in the legislative process. Additionally, the S&D and the Greens/EFA, who were among the most strongly represented parliamentary groups, behind the EPP, during the 2019–2024 constitutive session, played an active role in the analyzed policy debate, as reflected by the high number of statements issued.

4.2. Forest-Specific and Forest-Related Storylines

The statement analysis revealed 14 central storylines (Table 1). Of these, seven were found to exhibit relatively little or no disagreement (consensual), while the remaining seven were characterized by significant disagreement across coalitions (conflictual). Six of the storylines directly addressed forest ecosystems, while the remaining eight were more indirectly related. They addressed issues such as perceived ambiguities in the legislative proposal and concerns about insufficient funding for forest ecosystem restoration.

Table 1 illustrates the centrality of storylines in the debate and the frequency with which policy actors supported or opposed them. Approximately three-quarters of the statements reflected a supportive stance, while the remaining quarter expressed opposition. However, it is important to note that whether a statement was coded as supportive or opposing depended on the specific formulation of each storyline—specifically whether it was framed positively or negatively.

Additional information on the identified storylines, including exemplary statements from members of the supporting and opposing coalitions, can be found in Table A3 of the Supplementary File.

Table 1. Central storylines of the policy debate, including their standardized degree centrality and the absolute and percentage frequency with which policy actors expressed agreement and disagreement throughout the analyzed debate.

Level of disagreement	Storylines	Description	Degree centrality (std)	Agreement		Disagreement		Total	
				Σ	%	Σ	%	Σ	%
Low	State of European forests	European forests and their biodiversity are in a bad state and in need of restoration.	0.08	29	5.5	3	0.6	32	6.1
	Restoration financing	The financing of (forest) restoration measures is largely unclear.	0.20	36	6.8			36	6.8
	Global crises	Strengthening domestic production and the national primary sector is required in the face of multiple global crises.	0.21	18	3.4			18	3.4
	Leakage	Restoration of forest ecosystems will lead to the outsourcing of biomass production, thereby relocating climate and biodiversity impacts to non-EU countries.	0.26	18	3.4	5	1.0	23	4.4
	Legal ambiguity	The definitions (e.g., good condition, favorable reference areas) and the specific wording in the legislative proposal are largely unclear.	0.27	23	4.4	1	0.2	24	4.6
	Bureaucratization	The legislative initiative places a significant administrative burden on forest and landowners, as well as on ministries and implementing agencies.	0.27	23	4.4	1	0.2	24	4.6
	Expropriation	The regulation poses a risk to land ownership and encourages the expropriation of land.	0.28	13	2.5	2	0.4	15	2.9

Table 1. (Cont.) Central storylines of the policy debate, including their standardized degree centrality and the absolute and percentage frequency with which policy actors expressed agreement and disagreement throughout the analyzed debate.

Level of disagreement	Storylines	Description	Degree centrality (std)	Agreement		Disagreement		Total	
				Σ	%	Σ	%	Σ	%
High	Restoration site	Restoration measures (including in forest ecosystems) should be implemented in existing Natura 2000 sites.	0.24	9	1.7	3	0.6	12	2.3
	Forest restoration cost-benefit	The costs of forest restoration outweigh the benefits. Opportunity costs and losses are not accounted for in cost-benefit assessments.	0.27	21	4.0	8	1.5	29	5.5
	Subsidiarity	Setting legally binding forest ecosystem restoration indicators directly goes beyond the EU's competence.	0.31	36	6.8	21	4.0	57	10.8
	Feasibility	The regulation sets unrealistic and unachievable restoration goals. The restoration baselines are based on insufficient evidence.	0.35	32	6.1	24	4.6	56	10.6
	Local participation and inclusion	The legislative proposal and policy-making process do not sufficiently include local expertise and necessities (top-down approach).	0.35	41	7.8	21	4.0	62	11.8
	Forest disturbances	Forest restoration will increase the risk of climate disturbances, undermining climate adaptation and biodiversity restoration goals.	0.38	26	4.9	23	4.4	49	9.3
	Production restriction	Forest restoration will impose production restrictions and encourage the setting aside of forests, which will threaten forestry and rural economies.	0.41	68	12.9	21	4.0	89	16.9
Sum				393	74.7	133	25.3	526	100

The most central storylines were identified through standardized degree centrality. These storylines were primarily advanced by members of the opposing coalition and included mainly conflictual storylines, such as the production restriction, forest disturbance, local participation and inclusion, and feasibility storylines. Figure 3 shows the average normalized one-mode concept congruence network. Edge weights of 0.25 or less were filtered out to determine the underlying network structure. Notably, more conflictual storylines (black nodes) are voiced more frequently and in combination, particularly by the opposing coalition. This dominance is further reflected in the higher network density of conflictual storylines (0.81), compared to consensual storylines (green nodes, 0.38). Consensual storylines appear to have played a less central role in the analyzed debate, which highlights the high degree of polarization.

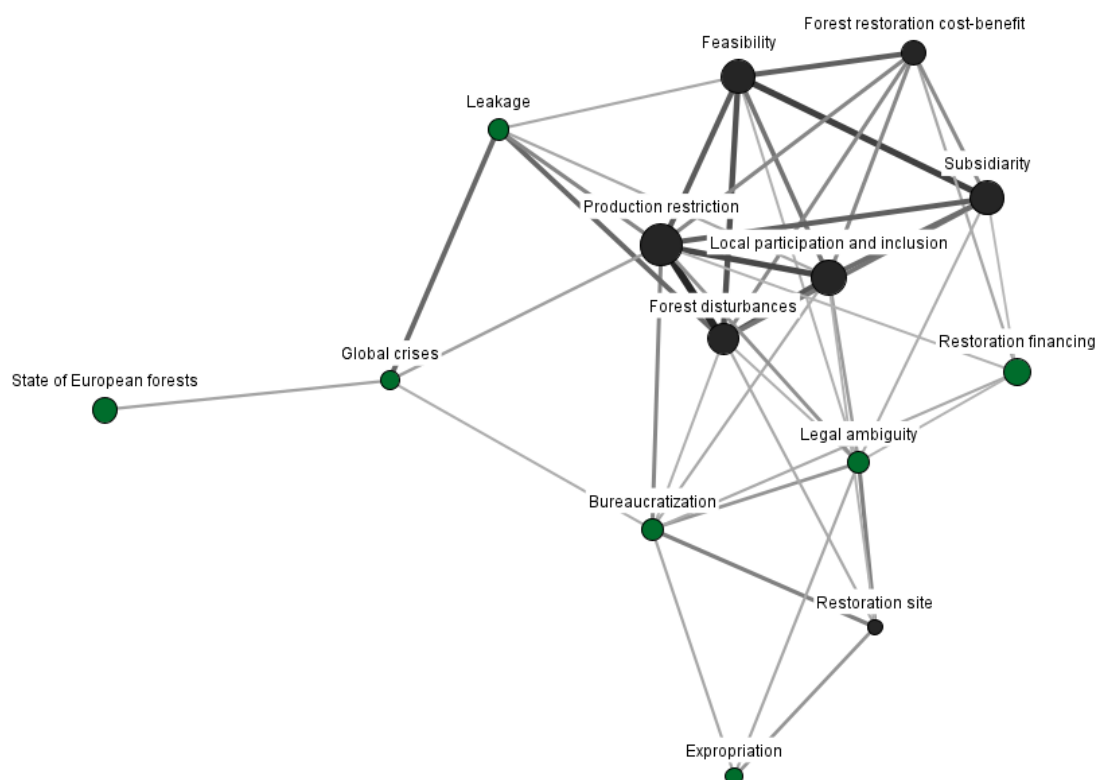


Figure 3. Average normalized one-mode concept congruence network (filtered edge weights ≤ 0.25). The larger the node size, the more frequently the storyline was referenced during the policy debate. Thicker and darker edges indicate higher edge weights, meaning that organizations mentioned the respective storylines together or in the same context. Notes: Green nodes = more consensual storylines; black nodes = more conflictual storylines.

Figure 4 shows the two-mode subtract network. It provides further insights into the storylines promoted by the 10 most central actors from the supporting and opposing coalitions, respectively. While certain storylines, such as those concerning restoration finance and legal ambiguity, elicited broad consensus across coalitions, other issues proved highly polarizing. In particular, there were strongly opposing views on whether forest restoration provisions impose production restrictions and whether they help mitigate or instead exacerbate forest disturbances.

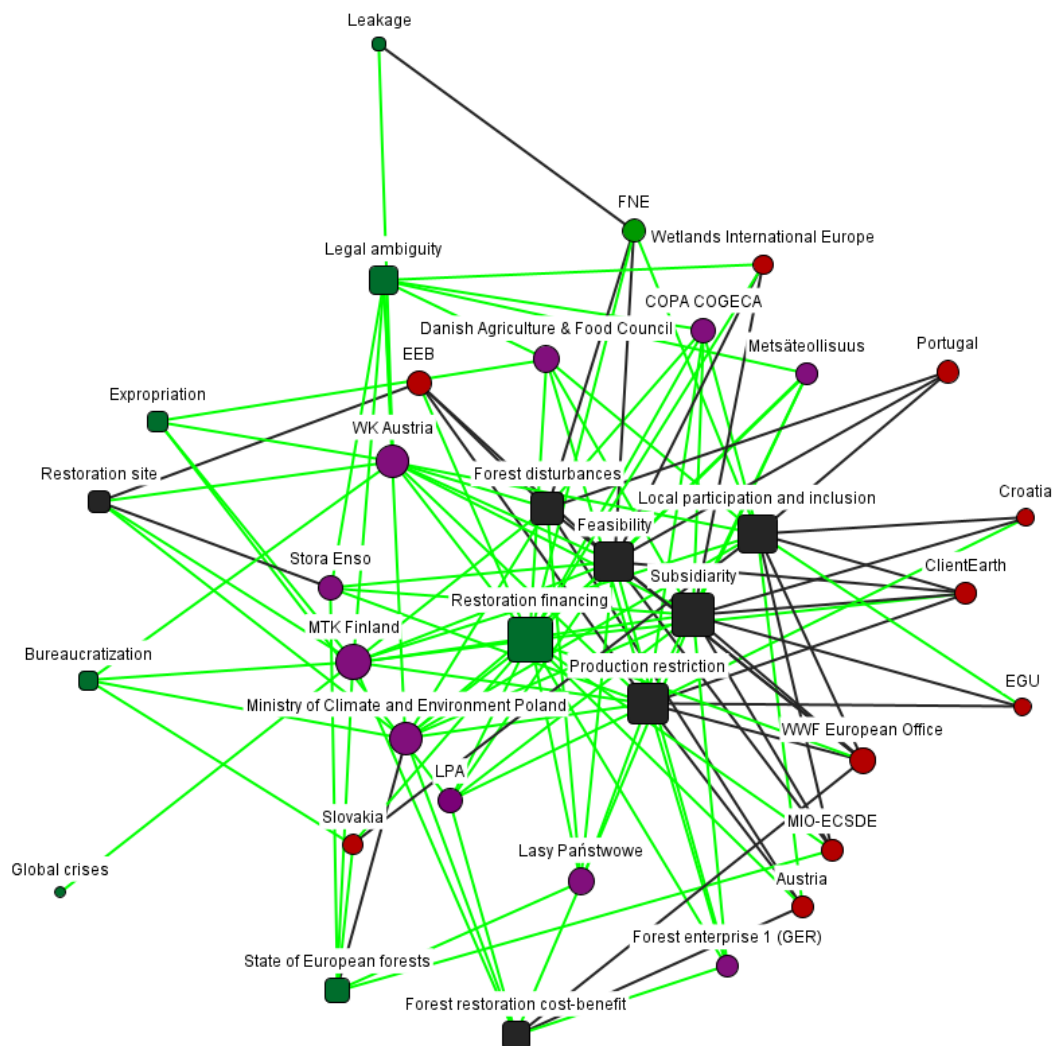


Figure 4. Two-mode subtract network. Notes: Purple nodes = the 10 most central organizations from the opposing coalition; red nodes = the 10 most central organizations from the supporting coalition; black squared nodes = more conflictual storylines; green squared nodes = more consensual storylines; green edges = agreement; black edges = disagreement; the full names of all the actors are in Table A1 in the Supplementary File.

In what follows, we will present qualitative insights into the four most conflictual forest-specific storylines, which were the ones most frequently addressed in the statements and that exhibited high degree centralities (see Table 1 and Figure 3).

4.2.1. Production Restriction Storyline

A dominant narrative in the policy debate centered on the perceived impact of restrictions of forestry production, particularly concerns over increasing management limitations and forest set-asides supposedly mandated by the EU-NRR. This debate was often linked to the role of forests in mitigating climate change, specifically the question of whether climate goals can be better achieved through forest conservation or wood-based carbon storage. The opposing coalition advanced the narrative that the bill would threaten forestry and rural economies, a concern prominently expressed by EPP Chairman Manfred Weber.

He repeatedly argued that “the main instrument the law proposes is to reduce productive land, including forest land...an idea that already exists in the Common Agricultural Policy, called set-aside” (Weber, 2023).

This storyline was widely echoed by forest owners and industry associations, who criticized the bill for emphasizing the carbon storage potential of standing forests while overlooking the carbon storage capacity in wood products. The debate over whether forest ecosystem restoration would result in production restrictions was frequently linked to the restoration site storyline. Due to concerns over additional management restrictions outside protected areas, the opposing coalition strongly advocated for focusing restoration efforts within designated Natura 2000 sites. In contrast, the supporting coalition welcomed the extension of forest ecosystem provisions beyond the habitat types covered by the EU Habitats Directive. These divergent views shaped policy amendments. While the original proposal included areas beyond Natura 2000, EP limited the scope of the text in response to concerns raised by the opposing coalition. However, the final text again extended coverage beyond the network.

4.2.2. Forest Disturbance Storyline

The debate on forest ecosystem restoration was characterized by strongly opposing views on the relationship between forest restoration and natural disturbances. Opponents of the bill repeatedly painted a bleak picture of the future of forest ecosystems should the bill be adopted:

Forests are currently burning across Europe. Huge areas are releasing enormous amounts of carbon dioxide and remaining wastelands [sic]. The EU-NRR runs the risk of making it more difficult for forests to adapt to climate change by further restricting use and increasing the proportion of deadwood, and creating structures that further promote forest fires. (German agriculture and forestry enterprise, 2022, translated from German)

Supporters of the bill, on the other hand, emphasized that “improved nature also helps rural areas...cope with extreme weather events, safeguarding against wind, droughts, and floods” (S&D, 2023). Concerns raised by the opposing coalition regarding deadwood indicators led to their temporary removal from the forest ecosystems article in the parliamentary text, following amendments proposed by the EPP.

4.2.3. Subsidiarity Storyline

Diverging views on the EU's competence for forest policy have sparked contentious debates across coalitions. For instance, the Central Union of Agricultural Producers and Forest Owners in Finland (MTK Finland) pointed to a growing trend of expanding the EC's authority relative to other EU institutions and EU-MS. Moreover, several organizations criticized the provision in Chapter V of the legislative proposal, which grants the EC the power to adopt delegated acts, particularly the authority to amend the annexes, including those related to forest ecosystem indicators.

The direct establishment of forest ecosystem indicators faced widespread criticism from various groups, including a Czech forest owner association, which called for the removal of all forest ecosystem indicators, and MTK Finland, which urged the EC to fully respect EU-MS' national competence for forest policy, pointing out the limited applicability of a fixed set of forest ecosystem restoration indicators across

European bioregions. On the other hand, some supporters of the bill even raised concerns that too much freedom given to EU-MS in national implementation could lead to ineffective action at the national level. They argued in favor of establishing forest ecosystem restoration indicators at the EU level to ensure consistency and avoid disparities across EU-MS.

Despite disagreements among policy actors regarding the EC's competence in forestry matters, which led to the temporary removal of the article on forest ecosystems during negotiations, the provision remained in the final legal text, albeit in a weakened form.

4.2.4. Forest Restoration Cost-Benefit Storyline

The economic impacts of forest restoration and restoration measures more broadly were another controversial point in the policy debate. This topic was closely linked to the broader discussion on restoration financing, where both the opposing and supporting coalition raised concerns about funding bottlenecks for forest restoration. While the EC highlighted the potentially high returns on restoration investment in its impact assessment (EC, 2022a), opponents contested these estimates. They criticized the reliance on EU-wide average values and the failure to account for the opportunity costs of restoration.

These concerns were particularly prominent among forest owners and industry associations from forest-rich and agriculturally oriented EU-MS. For example, the silviculture association of North Rhine-Westphalia in Germany argued that the cost-benefit calculations for forest ecosystems failed to account for the role of forest owners and managers, as well as the broader range of ecosystem services provided by forests. Similarly, MTK Finland emphasized the notably higher costs of ecosystem restoration in Finland, primarily due to the large proportion of potentially restorable former peatlands and the associated loss of forestry production potential. These concerns were frequently echoed by national ministries, including Finland's environment minister, Kai Mykkänen, who justified Finland's rejection of the bill by pointing to the country's exorbitant restoration costs.

4.3. Key Developments of the Legislative Process

4.3.1. Commission Proposal

To meet nature restoration and climate mitigation goals, Article 4 of the EC's EU-NRR proposal requires EU-MS to restore at least 30% of listed habitat types by 2030, 60% by 2040, and 90% by 2050. These targets complement existing EU environmental policies, such as the Habitats and Birds Directives (Council Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009, 2009), by introducing clear restoration goals and deadlines both within and beyond Natura 2000 sites. The proposal promotes a landscape-scale restoration approach across diverse ecosystems, including marine, agricultural, and forest ecosystems, and obliges EU-MS to develop national restoration plans that quantify restoration areas. In addition, it mandates the monitoring of restoration indicators and requires annual electronic reporting from the date of the regulation's entry into force, followed by updates every three years.

The preamble emphasizes the crucial role of forest ecosystems in protecting biodiversity, mitigating and adapting to climate change, and providing wood and non-wood ecosystem services. Article 10 of the

proposal is the key provision addressing forest ecosystems. It requires EU-MS to implement restoration measures aimed at improving forest conditions by ensuring increasing national trends across seven forest ecosystem restoration indicators. These include (a) standing deadwood, (b) lying deadwood, (c) the share of forests with uneven-aged structure, (d) forest connectivity, (e) the common forest bird index, and (f) the stock of organic carbon.

4.3.2. Parliamentary Amendments and Plenary Vote

Votes in the Council and, of particular noteworthiness, in the EP in June and July 2023 resulted in numerous changes to the legal text, weakening the thrust of the bill (Cliquet et al., 2024). Many of these changes directly impact the provisions on forest ecosystems and reflect storylines advanced by the opposing coalition (e.g., the forest disturbance and restoration site storylines). Although rejection requests from COM AGRI and COM PECH were turned down in the COM ENVI and plenary votes, forest ecosystem and peatland restoration targets were temporarily removed from the legal text as part of approximately 2,500 text amendments. This was mainly due to subsidiarity concerns regarding the EU's authority over forestry, as, for example, raised by the European Economic and Social Committee, which also called for greater consideration of increasing natural disturbances in Europe and a better balance between the preservation and exploitation of forest resources.

While forest ecosystems were reintroduced following the EP's plenary vote, forest-specific provisions underwent far-reaching amendments. At the request of the EPP, forest-specific references were removed, and Renew Europe proposed that forest restoration obligations be met using a reduced set of mandatory indicators—namely, (a) standing deadwood, (b) lying deadwood, and (c) the common forest bird index. Additionally, a list of optional indicators was suggested, which includes (d) the share of forests with uneven-aged structure, (e) forest connectivity, (f) the share of forests dominated by native tree species, (g) tree species diversity, and (h) the stock of organic carbon. Subsequent amendments proposed by the EPP led to the removal of both standing and lying deadwood indicators from the bill, primarily because of forest disturbance concerns raised by the opposing coalition. Further modifications in response to concerns related to climate change impacts included the addition of a third paragraph to Article 10, outlining exemptions to forest restoration obligations in cases of large-scale disruptions, such as natural disturbances, and climate change-related habitat transformations.

The narrow votes and the substantial weakening of the legal text following the parliamentary votes triggered widespread concern and mobilization among the general public, scientists, major corporations, and business associations. Backed by ENGOs, the “RestoreNature” campaign mobilized over one million messages and signatures from the broader public, urging EU decision-makers to ensure the final adoption of the bill (ClientEarth, 2023; “European Parliament seals the deal,” 2024). Additionally, approximately 6,000 scientists expressed concerns about the ongoing discussions surrounding the EU Green Deal and, in particular, the EU-NRR as a flagship policy (Pe'er et al., 2023). They highlighted the lack of evidence supporting specific claims and refuted the arguments put forward by the bill's opponents. Throughout the legislative process, the supporting coalition gained additional support from major corporations and business associations, including Nestlé, Coca-Cola, and IKEA, all of whom demonstrated exceptional engagement with the issue. In joint letters, issued in June 2023 and May 2024 (Our Nature, Our Business, 2024), they urged all MEPs and the EU-MS to adopt the bill.

The EP adopted additional, more general amendments that weakened the proposal further. These amendments reflected several storylines advanced by the opposing coalition, including those concerning global crises, feasibility, production restrictions, and cost-benefit considerations for restoration, and largely aimed to secure greater flexibility to protect economic interests (Cliquet et al., 2024). They include (a) the weakening of key restoration provisions—for example, changing “shall put in place” to “shall aim to put in place” in Article 4 §1—(b) limiting the scope of restoration to Natura 2000 sites currently in poor condition, (c) weakening the non-deterioration clause for restored areas, and (d) the removal of restoration provisions for agricultural ecosystems and peatlands from the text.

In addition to weakening the regulatory provisions for forest ecosystems, Amendment 80, proposed by shadow rapporteur César Luena on behalf of the S&D, incorporated the EU Biodiversity Strategy’s commitment to planting three billion trees by 2030 into the legal text, thus giving the commitment legal status.

While Mick Wallace, the shadow rapporteur for the Left Group, welcomed the survival of the bill following the parliamentary vote, he lamented that the text passed by EP had been “absolutely gutted,” remaining only “a shell of the Commission’s proposal” (Wallace, 2023, as cited in Giese, 2023).

4.3.3. Trilogue Agreement

The trilogue agreement reached in November 2023 reversed several amendments made by EP (Cliquet et al., 2024). Provisions on agricultural ecosystems and forest-specific recitals were reintroduced into the text, and the scope of terrestrial restoration was again expanded beyond Natura 2000 sites, as advocated by the supporting coalition. As to forest ecosystems, standing and lying deadwood were reintroduced to the text. In response to widespread concerns from the opposing coalition about the interaction between forest disturbances and restoration, additional clauses were added to Article 10, requiring EU-MS to carefully assess forest fire risks before implementing forest restoration measures.

Although the trilogue agreement aligns more closely with the legislative proposal, it comprises various concessions to the opposing coalition, particularly the farming sector, as reflected in the key provisions of the final legislative text. These include (a) the addition of food security enhancement as a standalone legal objective, (b) an exemption for the re-programming of the Common Agricultural Policy and Common Fisheries Policy or other related funding programs under the 2021–2027 Multiannual Financial Framework for restoration measures, and (c) the introduction of a new article on temporal suspensions—the so-called “emergency brake.” This last provision grants the EC the authority to temporarily suspend the agricultural ecosystem provisions in the event of an emergency that significantly affects land availability or food security.

While MEP Christine Schneider, the EPP’s shadow rapporteur, highlighted notable improvements to the initial proposal that better addressed agricultural concerns, César Luena (S&D) emphasized the preservation of the bill’s original objectives and the strengthening of provisions for forest ecosystems.

4.3.4. Final Adoption

Despite the EPP’s last-minute decision to withdraw its support for the negotiated text, the EP gave its final approval in February 2024. However, the Council’s failure to reach a qualified majority at its March 2024

meeting sparked significant concern among EU-MS representatives. Several national ministers pleaded for the bill's final adoption, warning that failure to do so would raise fundamental questions about the credibility of the EU's political system and the integrity of the ordinary legislative procedure. As then Minister of the Environment Eamon Ryan (Ireland) famously stated:

And if we're to say here as a Council, we've changed our mind, we entered into negotiations, we agreed with the Parliament, the Commission, but now we think differently, how would any future trial of negotiations have any real confidence? How could any parliamentarian say, I'll compromise here, I'll take a risk, I'll expose myself because I'll get a deal, and then we'll have a deal done? If we don't agree to what we've already negotiated, we undermine the entire European legislative process. (Ryan, 2024)

Several EU-MS representatives also questioned whether the EU could fulfil its intended pioneering role in international environmental policy if the Council failed to adopt the negotiated law:

During the Czech presidency, we negotiated in biodiversity COP conference a very good deal, something that the European Union may take forward [sic]. What are we going to do now? What are we going to do in autumn in this conference if we have no law on nature restoration? What are we going to say? What happens to our trustworthiness if we're talking about 2040 goals, about our future, about climate goals, about water protection? We are no longer trustworthy, we are only talking. (Hladík, 2024)

Efforts to persuade opposing EU-MS to reconsider their rejection gained momentum with a joint letter from environment ministers in May 2024 (Ministers for the Environment, Climate and Communications, 2024). Eamon Ryan, who emerged as a key policy entrepreneur of the bill, led the letter that was signed by ministers from 11 EU-MS, including influential countries like France, Spain, and Germany. It urged all EU-MS to finalize the process and adopt the bill at the Council meeting in June 2024. These efforts proved successful, with both Slovakia and Austria shifting their positions. Notably, Austria's former Environment Minister Leonore Gewessler voted against her government's official stance, which ultimately helped secure a qualified majority.

The final legal text, adopted by the Council on June 17, 2024, closely aligns with the outcome of the trilogue agreement. Despite their temporary removal during the legislative process, forest ecosystems remain a key focus under Article 12. While the common forest bird index remains the only mandatory forest ecosystem indicator, seven additional indicators are listed under Paragraph 3. EU-MS must demonstrate a nationally increasing trend for at least six of these indicators, measured from the regulation's entry into force through the end of 2030, and every six years thereafter.

5. Discussion

We can compare and analyze our findings through two key strands of policy and forest science studies. The first focuses on how discourse, coalition formation, and the exercise of discursive power can influence policy-making processes and their outcomes, including processes of policy change. Second, we discuss our findings in the context of existing literature on EU forest and environmental policy-making processes. Although the importance of discourse in policy-making is increasingly recognized in political science,

research explicitly addressing the forest policy subsystem at the EU level remains limited. This is surprising given the high polarization of forest environmental discourse at the EU level (De Koning et al., 2014) and the particularly critical role of discourse in highly polarized and politicized decision-making processes (Leifeld & Haunss, 2012).

While policy-making processes are often shaped by competing discourse coalitions argumentatively vying for control over outcomes (Hajer, 1997), dominant coalitions are expected to have the most significant influence on the outcome of the policy-making process (Schaub & Metz, 2020). Successful discourse coalitions are characterized by showing strong ideational congruence, unity against opposing coalitions, and broad support (Hajer, 1993). In this context, the literature on policy networks suggests that the structure of networks can significantly impact the policy-making process and its outcome. Policy change is less likely to occur when a unitary coalition structure dominated by a single, homogeneous coalition persists. Conversely, when discursive hegemony is challenged by the emergence of a competing coalition, resulting in a polarized network, and the challenger succeeds in discursively dominating the policy process, policy change becomes more likely. Such change is more likely to endure if the newly formed coalition successfully establishes discursive hegemony (Ingold & Gschwend, 2014; Schaub & Braunbeck, 2020).

Our empirical observations only partially corroborate the theoretical considerations outlined above. While our analysis reveals a strongly polarized policy network as a precursor to policy change, evaluating the success of discourse coalitions in influencing the policy-making process requires a more detailed assessment. Notably, the opposing coalition significantly influenced the process and its outcome (Cliquet et al., 2024). Their rejection and skepticism towards forest restoration provisions were packed into a broad set of storylines that dominated the analyzed debate. These storylines skillfully simplified the complexity of the restoration idea, giving the debate a ritualistic character. For example, the bureaucratization and expropriation storylines were frequently echoed by numerous non-state actors during the public consultation, and they continue to dominate ongoing forest and environmental policy debates. The dominance of the opposing coalition is further reflected by the greater number of aligned actors whose interests and ideas strongly influenced the analyzed policy debate and are evident in the numerous text amendments throughout the negotiation process. Nevertheless, the opposing coalitions' attempts to undermine or obstruct the legislative process ultimately failed, not least because of the lack of political leverage and decision-making authority, allowing the supporting coalition to prevail in the policy-making process.

Following a tumultuous policy-making process, the restoration discourse gained dominance in the EU environmental policy domain and was ultimately institutionalized with the adoption of the EU-NRR. This outcome was largely driven by the strong advocacy of major parliamentary groups, particularly the Greens/EFA and the S&D, as well as various influential EU-MS represented in the Council. Throughout the policy-making process, they skillfully harnessed the emotional appeal and ambiguity of the restoration idea to attract and mobilize a broad constituency from inside and outside the analyzed policy network, including from the scientific community, the private sector, and the general public. The ambiguity of forest restoration (Stanturf et al., 2014) appears to have prompted starkly contrasting viewpoints among discourse coalitions, such as regarding the relationship between forest restoration and climate disturbances, and have further contributed to implementation conflicts on the ground (O'Brien et al., 2025). However, this very ambiguity seems to have offered enough interpretive flexibility and strong ideational cohesion to bring together a

range of actors and align their diverse interests around the forest restoration idea. This expanded engagement reshaped power dynamics within the policy network, ultimately tipping the balance in favor of the supporting coalition's preferred outcome (Béland & Cox, 2016).

We argue that the remarkable mobilization and the outcome of the policy-making process were primarily facilitated by the forest restoration idea's role as a strong coalition magnet (Béland & Cox, 2016). While the forest ecosystem restoration movement originated primarily at the international level (Shelton et al., 2024), it has recently gained significant momentum within the EU. In the context of European forests, however, the necessity to diversify forest structures and improve and conserve key biodiversity indicators, such as deadwood and forest bird populations, has long been recognized. Influential state (for instance parliamentary groups) and non-state actors (such as ENGOs) strategically adopted and advanced the internationally established restoration idea to address long-standing policy challenges, particularly climate change and biodiversity loss, as well as the vital role of forest ecosystems in this context. Over time, key decision-makers, including various MEPs and national ministers in the Council, emerged as strong promoters of the bill. They consistently emphasized the urgency of restoring natural ecosystems to combat biodiversity loss and support climate change mitigation, thereby granting the restoration idea substantial legitimacy. Moreover, they skillfully elevated the debate by challenging the credibility of both the ordinary legislative procedure and EU institutions, while also calling into question the EU's self-proclaimed role as global environmental leader if the bill were to fail.

Despite the influential role of the opposing coalition, which successfully incorporated far-reaching text amendments that led to a general weakening of the legislative proposal (Cliquet et al., 2024), the adoption of the EU-NRR marks a substantial change in EU environmental policy, particularly in the realm of forest policy. The institutional framework for forest policy at the EU level has historically been shaped through forest-related policy areas. They include the field of environmental policy, in particular through the EU Birds and Habitats Directives, which remain rather vague in terms of specific forest management obligations (De Koning et al., 2014; Sotirov et al., 2021), and agricultural policy, as a financing instrument for forestry measures at the EU level (Fleckenstein, 2024). By formulating directly applicable and legally binding indicators and targets for forest ecosystem restoration in the EU-NRR, the EC is, for the first time, exerting direct influence over forest policy and management in the EU-MS. As a regulation, the EU-NRR does not require legal transposition into national legislation, allowing for direct applicability across EU-MS. This aligns with observations that the EC is effectively creating a *de facto* forest policy through related areas of shared competence, particularly environmental policy (Gordeeva et al., 2025; Sotirov et al., 2021).

Insights from the policy-making process and its outcome become even more striking when compared to earlier policy-making processes in the EU forest environmental policy domain. In their analysis of the coalitional politics of the EU Habitats Directive, Sotirov et al. (2021) found that its final adoption in 1992 was possible, among other reasons, by the poorly organized forest sector interest groups at the EU level at that time. Notably, several forest-rich EU-MS, including Finland and Sweden, which typically oppose EU legislative initiatives related to forests (Begemann et al., 2025; Sotirov et al., 2017; Winkel & Sotirov, 2016), were absent during the adoption, only having joined the EU in 1995. Moreover, at that time, the EP, whose internal vote significantly weakened the draft EU-NRR legislation (Cliquet et al., 2024), only held an advisory role in the policy-making process, as it was not granted legislative power until the introduction of the co-decision procedure in the Maastricht Treaty in 1993 (Sotirov et al., 2021).

Although political discourse and the associated storylines played a key role in shaping the EU-NRR, we argue that they should not be considered the sole factors influencing policy-making and policy change processes (Schmidt & Radaelli, 2004). Instead, the political leverage and decision-making power within actor coalitions, the broader political context of the discourse, and the emotional appeal and ambiguity of the debated topic all played a crucial role in shaping coalition formation and the outcome of the legislative process examined in this study. Therefore, a narrow consideration of network metrics (e.g., network density and the number of affiliated actors) seems insufficient when assessing the influence of actor coalitions on policy-making processes. This is because these metrics are strongly influenced by pre-determined network boundaries and may be offset by the political influence and decision-making power embedded in actor coalitions. However, given the difficulty of comprehensively analyzing the statements and arguments of the wide range of actors typically involved in environmental politics, studies of environmental networks and their influence on policy processes should take careful account of factors beyond the boundaries of the networks under analysis. In the present study, these factors appeared to have paved the way for the successful adoption of the EU-NRR amid political turbulence and mounting opposition to EU environmental policy.

6. Conclusion

This study examines the EU-NRR negotiation process to assess the influence of discursive power, as manifested through coalition formation and the advancement of storylines, on EU environmental policy-making. By combining DNA and a process-tracing of key policy outputs and broader political developments, we identified a dominant opposing coalition whose interests and ideas are strongly reflected at different stages of the process. At the same time, we observed significant mobilization among various actor groups outside the analyzed policy network. These actors were mobilized by influential figures from EU legislative institutions, who emerged as key policy entrepreneurs. Despite the unfavorable momentum against ambitious environmental policies at the time of negotiation, the reinforcement of the supporting coalition tipped the balance of power in favor of its desired outcome. Although discursive influence and coalition formation significantly impacted the process, our findings suggest that they should be assessed and interpreted within the broader political context. Furthermore, when evaluating their influence on policy-making processes and their outcomes, the decision-making power and political leverage embedded in actor coalitions should be thoroughly examined.

Our study has certain limitations. While our findings highlight the substantial role of discourse and coalition formation in EU environmental policy-making, the direct causal relationship between these factors and the policy-making process and its outcome cannot be conclusively determined from the data examined. Instead, our findings suggest that additional factors influenced the political discourse, the policy-making process, and its outcome. These factors include political developments at both international and national levels, with the latter influencing the voting behavior of national ministers in the Council, the mobilization of key actors from outside the analyzed policy network, and broader concerns about the credibility of EU political institutions and the ordinary legislative procedure. Together, these factors appear to have counterbalanced the opposing coalition's dominance in the analyzed policy debate.

Future discourse analyses of EU forest and environmental policy should consider comparing country-specific discourses across EU-MS and their respective interest groups to assess their influence on higher-level political processes and the voting behavior of national ministries in the Council. Furthermore, despite the

direct applicability of the EU-NRR, its long-term success and implementation in forest ecosystems will depend on its alignment with national forest and environmental policies, regulatory frameworks, and prevailing management practices, as well as meaningful collaboration with public and private forest owners and managers. These actors, however, largely adopted a critical stance in the policy debate. It therefore remains uncertain whether the enthusiasm demonstrated by policy entrepreneurs following the adoption of the EU-NRR will persist over time, particularly when confronted with local realities (Bull et al., 2018). In the end, the success of the EU-NRR hinges on convincing landowners and local stakeholders of the tangible benefits of restoration. This outcome can only be achieved through collaborative empowerment and sufficient financial support for forest restoration measures and potential income losses.

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Conflict of Interests

The authors declare no conflict of interests.

Supplementary Material

Supplementary material for this article is available online in the format provided by the authors (unedited).

References

- Begemann, A., Dolriis, C., Onatunji, A., Chimisso, C., & Winkel, G. (2025). The politics of sustainable finance for forests: Interests, beliefs and advocacy coalitions shaping forest sustainability criteria in the making of the EU Taxonomy. *Global Environmental Change*, 92, Article 103001. <https://doi.org/10.1016/j.gloenvcha.2025.103001>
- Béland, D., & Cox, R. H. (2016). Ideas as coalition magnets: Coalition building, policy entrepreneurs, and power relations. *Journal of European Public Policy*, 23(3), 428–445. <https://doi.org/10.1080/13501763.2015.1115533>
- Berning, L., & Sotirov, M. (2023). Hardening corporate accountability in commodity supply chains under the European Union Deforestation Regulation. *Regulation & Governance*, 17(4), 870–890. <https://doi.org/10.1111/rego.12540>

- Berning, L., & Sotirov, M. (2024). The coalitional politics of the European Union Regulation on deforestation-free products. *Forest Policy and Economics*, 158, Article 103102. <https://doi.org/10.1016/j.forpol.2023.103102>
- Billig, M. (1996). *Arguing and thinking: A rhetorical approach to social psychology*. Cambridge University Press.
- Blondel, V. D., Guillaume, J.-L., Lambiotte, R., & Lefebvre, E. (2008). Fast unfolding of communities in large networks. *Journal of Statistical Mechanics: Theory and Experiment*, 2008(10), Article P10008. <https://doi.org/10.1088/1742-5468/2008/10/P10008>
- Boin, A., 't Hart, P., & McConnell, A. (2009). Crisis exploitation: Political and policy impacts of framing contests. *Journal of European Public Policy*, 16(1), 81–106. <https://doi.org/10.1080/13501760802453221>
- Brockhaus, M., & Di Gregorio, M. (2014). National REDD+ policy networks: From cooperation to conflict. *Ecology and Society*, 19(4), Article 4.
- Bull, G. Q., Boedhihartono, A. K., Bueno, G., Cashore, B., Elliott, C., Langston, J. D., Riggs, R. A., & Sayer, J. (2018). Global forest discourses must connect with local forest realities. *International Forestry Review*, 20(2), 160–166.
- ClientEarth. (2023, November 10). *Nature Restoration Law one step closer to becoming reality—But with loopholes* [Press release]. <https://www.clientearth.org/latest/press-office/press-releases/nature-restoration-law-one-step-closer-to-becoming-reality-but-with-loopholes>
- Cliquet, A., Aragão, A., Meertens, M., Schoukens, H., & Decler, K. (2024). The negotiation process of the EU Nature Restoration Law Proposal: Bringing nature back in Europe against the backdrop of political turmoil? *Restoration Ecology*, 32(5), Article e14158. <https://doi.org/10.1111/rec.14158>
- COD (2022/0195). *Ordinary legislative procedure (ex-codecision procedure)*. [https://oeil.secure.europarl.europa.eu/oeil/en/procedure-file?reference=2022/0195\(COD\)](https://oeil.secure.europarl.europa.eu/oeil/en/procedure-file?reference=2022/0195(COD))
- Collier, D. (2011). Understanding process tracing. *PS: Political Science & Politics*, 44(4), 823–830. <https://doi.org/10.1017/S1049096511001429>
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. (1992). *Official Journal of the European Communities*, L 206. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043>
- Council Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds. (2009). *Official Journal of the European Union*, L 20. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147>
- Dahm, J. (2021, October 8). Six EU countries ‘strongly’ condemn Commission’s EU forest strategy. *Euractiv*. <https://www.euractiv.com/section/climate-environment/news/six-eu-countries-strongly-condemn-commissions-eu-forest-strategy>
- De Koning, J., Winkel, G., Sotirov, M., Blondet, M., Borrás, L., Ferranti, F., & Geitzenauer, M. (2014). Natura 2000 and climate change—Polarisation, uncertainty, and pragmatism in discourses on forest conservation and management in Europe. *Environmental Science & Policy*, 39, 129–138. <https://doi.org/10.1016/j.envsci.2013.08.010>
- Edwards, P., Brukas, V., Brukas, A., Hoogstra-Klein, M., Secco, L., & Kleinschmit, D. (2022). Development of forest discourses across Europe: A longitudinal perspective. *Forest Policy and Economics*, 135, Article 102641. <https://doi.org/10.1016/j.forpol.2021.102641>
- Edwards, P., & Kleinschmit, D. (2013). Towards a European forest policy—Conflicting courses. *Forest Policy and Economics*, 33, 87–93. <https://doi.org/10.1016/j.forpol.2012.06.002>
- Eijk, C. (2018). *The essence of politics*. Amsterdam University Press. <https://doi.org/10.5117/9789463727211>
- European Commission. (2020). *EU Biodiversity Strategy for 2030: Bringing nature back into our lives* (COM(2020) 380 final). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0380>

- European Commission. (2022a). *Impact assessment accompanying the proposal for a Regulation of the European Parliament and of the Council on nature restoration* (SWD(2022) 167 final). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52022SC0167>
- European Commission. (2022b). *Proposal for a Regulation of the European Parliament and of the Council on nature restoration* (COM (2022) 304 final). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022PC0304>
- European Parliament. (2023a). *Amendments adopted by the European Parliament on 12 July 2023 on the proposal for a regulation of the European Parliament and of the Council on nature restoration* (COM(2022)0304 – C9-0208/2022 – 2022/0195(COD)). https://www.europarl.europa.eu/doceo/document/TA-9-2023-0277_EN.html
- European Parliament. (2023b). *Provisional agreement resulting from interinstitutional negotiations*. Committee on the Environment, Public Health and Food Safety.
- European Parliament. (2024). *European Parliament legislative resolution of 27 February 2024 on the proposal for a regulation of the European Parliament and of the Council on nature restoration* (COM(2022)0304 – C9-0208/2022 – 2022/0195(COD)).
- European Parliament seals the deal on Nature Restoration Law. (2024, February 27). *World Wide Fund For Nature*. <https://www.wwf.eu/?12986966/European-Parliament-seals-the-deal-on-Nature-Restoration-Law>
- Finger, R., Fabry, A., Kammer, M., Candel, J., Dalhaus, T., & Meemken, E. M. (2024). Farmer protests in Europe 2023–2024. *EuroChoices*, 23(3), 59–63. <https://doi.org/10.1111/1746-692X.12452>
- Fisher, D. R., Leifeld, P., & Iwaki, Y. (2013). Mapping the ideological networks of American climate politics. *Climatic Change*, 116(3/4), 523–545. <https://doi.org/10.1007/s10584-012-0512-7>
- Fleckenstein, S. (2024). From sectoral policy change to cross-sectoral (dis) integration? A longitudinal analysis of the EU's forest and rural development policy. *Forest Policy and Economics*, 169, Article 103319.
- German agriculture and forestry enterprise. (2022, August 19). *3rd public consultation on the proposal for a nature restoration regulation*.
- Ghini, S., & Steiner, B. (2020). The political debate on climate change in Italy: A discourse network analysis. *Politics and Governance*, 8(2), 215–228. <https://doi.org/10.17645/pag.v8i2.2577>
- Giese, S. (2023, July 12). *Facts beat disinfo in crucial nature vote*. The LEFT in the European Parliament. <https://left.eu/facts-beat-disinfo-in-crucial-nature-vote>
- Gordeeva, E., Wolfslehner, B., & Weber, N. (2025). 25 years of EU forest policy—An analysis. *Forests*, 16(2), Article 256. <https://doi.org/10.3390/f16020256>
- Hajer, M. (1993). Discourse coalitions and the institutionalization of practice: The case of acid rain in Great Britain. In F. Fischer & J. Forester (Eds.), *The argumentative turn in policy analysis and planning* (pp. 43–76). Duke University Press. <https://doi.org/10.1215/9780822381815-003>
- Hajer, M. (1997). Discourse analysis. In M. Hajer (Ed.), *The politics of environmental discourse: Ecological modernization and the policy process* (pp. 42–72). Oxford Academic. <https://doi.org/10.1093/019829333X.003.0003>
- Hajer, M. (2002). Discourse analysis and the study of policy making. *European Political Science*, 2(1), 61–65.
- Hajer, M. (2006). Doing discourse analysis: Coalitions, practices, meaning. In M. A. van den Brink & T. Metzger (Eds.), *Words matter in policy and planning. Discourse theory and method in social sciences* (pp. 65–74). KNAG.
- Hajer, M., & Versteeg, W. (2005). A decade of discourse analysis of environmental politics: Achievements, challenges, perspectives. *Journal of Environmental Policy & Planning*, 7(3), 175–184. <https://doi.org/10.1080/15239080500339646>

- Hering, D., Schürings, C., Wenskus, F., Blackstock, K., Borja, A., Birk, S., Bullock, C., Carvalho, L., Dagher-Kharrat, M. B., Lakner, S., Lovrić, N., McGuinness, S., Nabuurs, G.-J., Sánchez-Arcilla, A., Settele, J., & Pe'er, G. (2023). Securing success for the Nature Restoration Law. *Science*, 382(6676), 1248–1250. <https://doi.org/10.1126/science.adk1658>
- Hladík, P. (2024, March 25). *Environment Council: Public session (afternoon)* [Video]. Consilium Europa. <https://video.consilium.europa.eu/event/en/27398>
- Ingold, K. (2011). Network structures within policy processes: Coalitions, power, and brokerage in Swiss climate policy. *Policy Studies Journal*, 39(3), 435–459. <https://doi.org/10.1111/j.1541-0072.2011.00416.x>
- Ingold, K., & Gschwend, M. (2014). Science in policy-making: Neutral experts or strategic policy-makers? *West European Politics*, 37(5), 993–1018. <https://doi.org/10.1080/01402382.2014.920983>
- Ingold, K., & Leifeld, P. (2016). Structural and institutional determinants of influence reputation: A comparison of collaborative and adversarial policy networks in decision making and implementation. *Journal of Public Administration Research and Theory*, 26(1), 1–18.
- Jordan, A., & Lenschow, A. (2010). Environmental policy integration: A state of the art review. *Environmental Policy and Governance*, 20(3), 147–158. <https://doi.org/10.1002/eet.539>
- Karjalainen, T. (2023, February 2). Who's to pay the cost of EU's Nature Restoration Regulation, MS or EU? Finnish MEPs disagree. *forest News*. <https://forest.fi/article/whos-to-pay-the-cost-of-eus-nature-restoration-regulation-ms-or-eu-finnish-meps-disagree>
- Khayatzadeh-Mahani, A., Labonté, R., Ruckert, A., & de Leeuw, E. (2019). Using sustainability as a collaboration magnet to encourage multi-sector collaborations for health. *Global Health Promotion*, 26(1), 100–104. <https://doi.org/10.1177/1757975916683387>
- Kiess, J., Norman, L., Temple, L., & Uba, K. (2017). Path dependency and convergence of three worlds of welfare policy during the Great Recession: UK, Germany and Sweden. *Journal of International and Comparative Social Policy*, 33(1), 1–17. <https://doi.org/10.1080/21699763.2017.1281832>
- Kuenzler, J., Stauffer, B., Schlauffer, C., Song, G., Smith-Walter, A., & Jones, M. D. (2025). A systematic review of the narrative policy framework: A future research agenda. *Policy & Politics*, 53(1), 129–151. <https://doi.org/10.1332/03055736Y2024D000000046>
- Leifeld, P. (2011). *Discourse networks and German pension politics* [Unpublished doctoral dissertation]. University of Konstanz.
- Leifeld, P. (2013). Reconceptualizing major policy change in the advocacy coalition framework: A discourse network analysis of German pension politics. *Policy Studies Journal*, 41(1), 169–198. <https://doi.org/10.1111/psj.12007>
- Leifeld, P. (2017). Discourse network analysis: Policy debates as dynamic networks. In J. N. Victor, M. N. Lubell & A. H. Montgomery (Eds.), *The Oxford handbook of political networks* (pp. 301–326). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190228217.013.25>
- Leifeld, P., & Haunss, S. (2012). Political discourse networks and the conflict over software patents in Europe. *European Journal of Political Research*, 51(3), 382–409. <https://doi.org/10.1111/j.1475-6765.2011.02003.x>
- Leipold, S. (2014). Creating forests with words—A review of forest-related discourse studies. *Forest Policy and Economics*, 40, 12–20. <https://doi.org/10.1016/j.forpol.2013.12.005>
- Leipold, S., Feindt, P. H., Winkel, G., & Keller, R. (2019). Discourse analysis of environmental policy revisited: Traditions, trends, perspectives. *Journal of Environmental Policy & Planning*, 21(5), 445–463. <https://doi.org/10.1080/1523908X.2019.1660462>
- Mahoney, C. (2004). The power of institutions: State and interest group activity in the European Union. *European Union Politics*, 5(4), 441–466. <https://doi.org/10.1177/1465116504047312>

- Marks, G., Hooghe, L., & Blank, K. (1996). European integration from the 1980s: State-centric v. multi-level governance. *JCMS: Journal of Common Market Studies*, 34(3), 341–378. <https://doi.org/10.1111/j.1468-5965.1996.tb00577.x>
- Mayr, J. (2023, July 17). Gibt es eine Mehrheit für das Naturschutzgesetz? *Tagesschau*. <https://www.tagesschau.de/ausland/europa/eu-abstimmung-naturschutzgesetz-100.html>
- Ministers for the Environment, Climate and Communications. (2024). *Letter supporting adoption of the EU Nature Restoration Law*. Department of the Environment, Climate and Communications. https://www.politico.eu/wp-content/uploads/2024/05/13/Environment-ministers-letter-supporting-NRL-adoption_13-may-2024.pdf
- Nagel, M., & Bravo-Laguna, C. (2022). Analyzing multi-level governance dynamics from a discourse network perspective: The debate over air pollution regulation in Germany. *Environmental Sciences Europe*, 34(1), Article 62. <https://doi.org/10.1186/s12302-022-00640-0>
- O'Brien, L., Konczal, A., Begemann, A., Lovric, M., Lovric, N., Fleckenstein, S., & Winkel, G. (2025). *Forest restoration paradigms and conflicts in Europe*. Commonwealth Forestry Association. <https://www.ingentaconnect.com/contentone/cfa/ifr/pre-prints/contentifr27s1a?crawler=true&mimetype=application/pdf>
- Our Nature, Our Business. (2024). *Business statement ahead of the final votes on the Nature Restoration Law*. <https://www.ournatureourbusiness.eu>
- Pe'er, G., Kachler, J., Herzon, I., Hering, D., Arponen, A., Bosco, L., Bruelheide, H., Friedrichs-Manthey, M., Hagedorn, G., Hansjürgens, B., Ladouceur, E., Lakner, S., Liqueste, C., Quaas, M., Robuchon, M., Saavedra, D., Selva, N., Settele, J., Sirami, C., van Dam, N., Wittmer, H., Wubs, J., & Bonn, A. (2023). *Scientists support the EU's Green Deal and reject the unjustified argumentation against the Sustainable Use Regulation and the Nature Restoration Law*. Zenodo. <https://doi.org/10.5281/zenodo.8128624>
- Pülzl, H., Hogl, K., Kleinschmit, D., Wydra, D., Arts, B., Mayer, P., Palahí, M., Winkel, G., & Wolfslehner, B. (Eds.). (2013). *European forest governance: Issues at stake and the way forward. What Science Can Tell Us 2*. European Forest Institute. <https://efi.int/publications-bank/european-forest-governance-issues-stake-and-way-forward>
- Regulation (EU) 2023/1115 of the European Parliament and of the Council of 31 May 2023 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010 (Text with EEA relevance). (2023). *Official Journal of the European Union*, L 150. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32023R1115>
- Regulation (EU) 2024/1991 of the European Parliament and of the Council of 24 June 2024 on nature restoration and amending Regulation (EU) 2022/869. (2024). *Official Journal of the European Union*, L 2024/1991. <https://eur-lex.europa.eu/eli/reg/2024/1991/oj/eng>
- Roux, J.-L., Pülzl, H., Sotirov, M., & Winkel, G. (2025). Understanding EU forest policy governance through a cultural theory lens. *Policy Science*, 58, 111–144. <https://doi.org/10.1007/s11077-025-09566-9>
- Ryan, E. (2024, March 25). *Environment Council: Public session (afternoon)* [Video]. Consilium Europa. <https://video.consilium.europa.eu/event/en/27398>
- Sabatier, P. A., & Weible, C. M. (Eds.). (2014). *Theories of the policy process*. Westview Press.
- Schaub, S. (2021). Public contestation over agricultural pollution: A discourse network analysis on narrative strategies in the policy process. *Policy Sciences*, 54(4), 783–821. <https://doi.org/10.1007/s11077-021-09439-x>

- Schaub, S., & Braunbeck, T. (2020). Transition towards sustainable pharmacy? The influence of public debates on policy responses to pharmaceutical contaminants in water. *Environmental Sciences Europe*, 32(1), Article 140. <https://doi.org/10.1186/s12302-020-00423-5>
- Schaub, S., & Metz, F. (2020). Comparing discourse and policy network approaches: Evidence from water policy on micropollutants. *Politics and Governance*, 8(2), 184–199. <https://doi.org/10.17645/pag.v8i2.2597>
- Schmidt, V. A. (2008). Discursive institutionalism: The explanatory power of ideas and discourse. *Annual Review of Political Science*, 11, 303–326. <https://doi.org/10.1146/annurev.polisci.11.060606.135342>
- Schmidt, V. A., & Radaelli, C. M. (2004). Policy change and discourse in Europe: Conceptual and methodological issues. *West European Politics*, 27(2), 183–210. <https://doi.org/10.1080/0140238042000214874>
- Shanahan, E. A., Jones, M. D., & McBeth, M. K. (2011). Policy narratives and policy processes. *Policy Studies Journal*, 39(3), 535–561. <https://doi.org/10.1111/j.1541-0072.2011.00420.x>
- Shelton, M. R., Kanowski, P. J., Kleinschmit, D., & Ison, R. L. (2024). Critical social perspectives in forest and landscape restoration—A systematic review. *Frontiers in Environmental Science*, 12, Article 1466758.
- Socialists and Democrats. (2023, November 29). *S&Ds achieve majority in ENVI committee on much-needed Nature Restoration Law* [Press release]. <https://www.socialistsanddemocrats.eu/newsroom/sds-achieve-majority-envi-committee-much-needed-nature-restoration-law>
- Sotirov, M., Stelter, M., & Winkel, G. (2017). The emergence of the European Union Timber Regulation: How Baptists, Bootleggers, devil shifting and moral legitimacy drive change in the environmental governance of global timber trade. *Forest Policy and Economics*, 81, 69–81. <https://doi.org/10.1016/j.forpol.2017.05.001>
- Sotirov, M., & Winkel, G. (2016). Towards a cognitive theory of shifting alliances and policy change: Linking the advocacy coalition framework and cultural theory. *Policy Sciences*, 49(2), 125–154.
- Sotirov, M., Winkel, G., & Eckerberg, K. (2021). The coalitional politics of the European Union's environmental forest policy: Biodiversity conservation, timber legality, and climate protection. *Ambio*, 50(12), 2153–2167. <https://doi.org/10.1007/s13280-021-01644-5>
- Stanturf, J. A., Palik, B. J., Williams, M. I., Dumroese, R. K., & Madsen, P. (2014). Forest restoration paradigms. *Journal of Sustainable Forestry*, 33(Suppl. 1), S161–S194.
- Taylor, K. (2023, July 20). EU kicks off decisive talks on contested nature restoration law. *Euractiv*. <https://www.euractiv.com/section/energy-environment/news/eu-kicks-off-decisve-talks-on-contested-nature-restoration-law>
- Tosun, J. (2023). The European Union's climate and environmental policy in times of geopolitical crisis. *JCMS: Journal of Common Market Studies*, 61, 147–156.
- Vanttinen, P. (2022, October 19). Finland and three other member states launch a forestry lobbying group. *Euractiv*. <https://www.euractiv.com/section/energy-environment/news/finland-and-three-other-member-states-launch-a-forestry-lobbying-group>
- Wagemann, C., Goerres, A., & Siewert, M. B. (Eds.). (2020). *Handbuch Methoden der Politikwissenschaft*. Springer.
- Wagner, P. M., Ocelík, P., Gronow, A., Ylä-Anttila, T., & Metz, F. (2023). Challenging the insider outsider approach to advocacy: How collaboration networks and belief similarities shape strategy choices. *Policy & Politics*, 51(1), 47–70.
- Wallaschek, S. (2020). Contested solidarity in the Euro crisis and Europe's migration crisis: A discourse network analysis. *Journal of European Public Policy*, 27(7), 1034–1053. <https://doi.org/10.1080/13501763.2019.1659844>
- Weber, M. (2023, July 6). Start over with the Nature Restoration Law. *EPP Group*. <https://www.eppgroup.eu/newsroom/start-over-with-the-nature-restoration-law>
- Weible, C. M., & Sabatier, P. A. (2005). Comparing policy networks: Marine protected areas in California. *Policy Studies Journal*, 33(2), 181–201. <https://doi.org/10.1111/j.1541-0072.2005.00101.x>

- Winkel, G., Gleißner, J., Pistorius, T., Sotirov, M., & Storch, S. (2011). The sustainably managed forest heats up: Discursive struggles over forest management and climate change in Germany. *Critical Policy Studies*, 5(4), 361–390.
- Winkel, G., & Sotirov, M. (2016). Whose integration is this? European forest policy between the gospel of coordination, institutional competition, and a new spirit of integration. *Environment and Planning C: Government and Policy*, 34(3), 496–514. <https://doi.org/10.1068/c1356j>

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ARTICLE

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Dynamics of Electoral Polarisation in Climate Policy Discourse: A Temporal Network Analysis

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Abstract

Climate policy is a deeply polarised issue that intertwines ideological positions with social identities. This division is intensified by election campaigns, highlighting social identities and ideological conflicts. Previous research has shown an increase in polarisation during such campaigns and a decrease after an election. However, evidence suggests that campaigns do not significantly impact already highly polarised issues such as climate policy. Moreover, by focusing on polarisation between partisan groups, existing research often overlooks the multi-actor system of climate governance, in which diverse non-partisan actors are also central to shaping the discourse. To address these gaps, this study examines climate policy discourse on Twitter during the 2021 German federal election. It employs a temporal network analysis to compare polarisation between partisan and non-partisan groups. The findings show that the climate discourse is divided into a pro-climate camp, dominated by environmental activists, scientists, and journalists, and an anti-climate camp, dominated by right-wing bloggers and climate sceptics. This study reveals a dual dynamic in the climate policy discourse. Partisan polarisation intensified temporarily, reaching its peak during the election campaign before declining again, while the deep divide between pro- and anti-climate camps remained largely stable. The findings suggest that the polarisation during an election campaign for a highly polarised issue may differ from previous research findings. This underscores the importance of exploring non-partisan structures, as their polarisation dynamics can differ significantly from those observed within traditional partisan groups.

Keywords

climate policy; election campaign; Germany; polarisation; public discourse; social media

1. Introduction

Climate policy is ideologically polarised and connected to social identities, making it a controversial topic in political discourse (Bliuc et al., 2015; Chinn et al., 2020; McCright et al., 2016; Vesely et al., 2021). These divisions are amplified by election campaigns, which emphasise contrasting positions and social identities. In addition, an election represents a conscious channelling of political conflict and provides a structured framework for settling disagreements through the democratic process (Przeworski, 2011). Previous studies suggest a dynamic where partisan polarisation increases during election campaigns due to heightened political conflict (Hansen & Kosiara-Pedersen, 2017; Sood & Iyengar, 2016), before decreasing again afterwards (Hernández et al., 2021). However, recent findings from the US challenge this pattern. Fasching et al. (2024) demonstrated that in already highly polarised environments, where political attitudes are deeply intertwined with social identity, polarisation is only minimally affected by campaigns and remains largely stable. A stable polarisation that does not change even at the peak of political conflict would indicate how deeply divided the climate policy discourse is and how established the positions already are. In such a scenario, the election of the opposing camp can be perceived as an attack on one's identity, posing significant risks to democratic processes, which depend on compromise and acceptance of majority voting. This can lead to political gridlock, reinforcing the status quo, and threatening the ability to act on climate policy (Judge et al., 2023; Lee, 2015). In light of the potential significance of stable polarisation, this study explores how election campaigns influence polarisation in climate discourse.

To investigate this, I take a dual approach, examining polarisation along two distinct societal divisions. The first perspective addresses partisan polarisation, which has been a focus of numerous previous studies (T. H. Y. Chen et al., 2021; Darius, 2022; Reiljan, 2020; Wagner, 2021). By considering traditional party-political lines and the left-right spectrum, I establish a connection with existing research, and it becomes possible to investigate the role of election campaigns on partisan polarisation in climate policy. However, climate policy is also shaped by non-partisan actors that engage in cooperation, competition, or conflict and contribute to conflict resolution (Dorsch & Flachsland, 2017). In accordance with this perspective, Dellmuth and Shyrokykh (2023), drawing on the Intergovernmental Panel on Climate Change (2022, p. 2910), define climate governance as “the structures, processes, and actions through which private, public, and hybrid actors interact to address societal goals related to climate change.” This broader understanding acknowledges that influential participants are not limited to political parties and politicians, but that activists, scientists, and other non-partisan actors play key roles in shaping the discourse (K. Chen et al., 2023; Vu et al., 2020). Accordingly, the second perspective is connected to climate governance research and examines polarisation between what this study refers to as discourse-evolving groups. In contrast to pre-defined partisan lines, these groups evolve organically from interactions within public discourse. Their boundaries emerge around shared beliefs and collective identities, revealing where natural fault lines occur. In climate policy discourse, these groups form two opposing camps: a pro-climate and an anti-climate camp. Focusing on these discourse-specific groups reflects the broader landscape of climate governance, in which non-partisan actors such as activists, scientists, and the media shape the discourse alongside political parties.

Much of the existing literature relies heavily on survey data, using self-reported attitudes to calculate polarisation (e.g., Lelkes, 2016; Reiljan, 2020; Wagner, 2021). However, Wagner (2024) argued that while citizens express polarised positions in surveys, this does not necessarily reflect their actual behaviour. This

argument also applies to public discourse, since survey responses do not automatically translate into political communication. While public discourse involves different channels, such as traditional media or parliamentary speeches, social media is becoming increasingly important, particularly during election campaigns (Jungherr, 2016; Kreiss et al., 2018). An important platform is Twitter (now X, but referred to as Twitter throughout this article to reflect the period of data collection and the platform conditions at that time), with its role in norm diffusion, opinion leadership, and the formation of public opinion in climate debates highlighted by Dellmuth and Shyrokykh (2023) as having the potential to influence climate governance. Political actors increasingly use Twitter not just to inform but to frame issues, mobilise support, and exert influence on governance outcomes (Dellmuth & Shyrokykh, 2023). Non-party actors also significantly contribute to shaping climate governance via targeted use of social media, generating public awareness, mobilising supporters, and influencing political decision-making processes (Barrie et al., 2024; Dellmuth & Shyrokykh, 2023; Falkenberg et al., 2022; Padilla-Castillo & Rodríguez-Hernández, 2023). However, Twitter's user base does not represent the general population (Taddicken et al., 2019). Nevertheless, despite the resulting selection bias, focusing on Twitter enables (nearly) complete coverage of a debate on a platform, including positions that are difficult to sample in surveys.

This study builds on prior work using network analysis to investigate social media polarisation (Barberá, 2015; Conover et al., 2011; Williams et al., 2015). While other studies have created networks at different time points to observe the development of polarisation over time (T. H. Y. Chen et al., 2021; Darius, 2022; Falkenberg et al., 2022; Svozil et al., 2025), this study differs from analyses of isolated time periods by modelling the discourse as a temporal network. By treating time periods as sequentially coupled layers, the chronological order of interactions is preserved, thereby capturing the temporal dependencies in the evolution of polarisation structures.

Finally, while studies on social media polarisation have concentrated mainly on the US (Kubin & von Sikorski, 2021), research on how election campaigns affect polarisation has examined cases in the US and Denmark or across countries (Fasching et al., 2024; Hansen & Kosiara-Pedersen, 2017; Hernández et al., 2021; Sood & Iyengar, 2016). By selecting the climate policy debate in the German federal election campaign of September 2021 as a case study, this study extends the literature on polarisation by providing an additional perspective. Furthermore, this work contributes to a deeper understanding of climate policy polarisation in a country that plays a key role in international climate governance (Liefferink & Wurzel, 2017).

Section 2 introduces the concept of polarisation in public discourse and reviews the relevant literature, focusing on the interplay between ideology and social identity. Subsequently, I examine how election campaigns affect polarisation, distinguishing between partisan and discourse-evolving groups. Section 3 presents the empirical part of the study, outlines data, network construction, and polarisation metrics. Section 4 reports the results, indicating a persistent division between pro- and anti-climate camps. Polarisation between the left- and right-wing partisan camps peaked during the election campaign, subsequently declining to stabilise at a level slightly above its initial baseline.

2. Theoretical Framework

Polarisation is often subdivided into two different types. The first is affective polarisation, which is based on social identity theory and describes the extent of positive feelings within a group compared to negative

feelings towards an out-group (Billig & Tajfel, 1973; Tajfel et al., 1971). According to social identity theory, social identity is a part of the self-concept, which involves different social groups that are hierarchically structured (Tajfel & Turner, 1979). These hierarchical relationships are determined by consensus within or across groups (Tajfel & Turner, 1979). Relationships between groups can be influenced by various factors, such as the salience of the group, threats from other groups (e.g., different value systems), or competition for resources (Gaertner et al., 1993; Oakes, 1987; Riek et al., 2006). Thus, affective polarisation measures the effect of various factors that describe the relationship between social groups based on the groups' sentiments towards one another.

The second type is ideological polarisation, which describes polarisation based on ideological consistency or ideological divergence (DiMaggio et al., 1996; Iyengar et al., 2012; Lelkes, 2016). As ideology is a coherent system of beliefs, values, and attitudes, ideological polarisation describes how strongly ideologies differ (Converse, 1964; DiMaggio et al., 1996). These are reflected in the cohesion of the in-group, characterised by consistent positions on issues and interrelated attitudes, and in the separation from the out-group, evident in the degree of overlapping attitudes (DiMaggio et al., 1996).

Both affective and ideological polarisation can have far-reaching consequences. The “us-versus-them” attitudes that arise from affective polarisation can impede political progress and lead to democratic backsliding (McCoy et al., 2018). Additionally, growing ideological polarisation can reduce support for democratic processes, impede the ability to reach agreements, and ultimately cause political gridlock (DiMaggio et al., 1996; Torcal & Magalhães, 2022). Therefore, several studies have examined polarisation in different countries (Dalton, 2021; Reiljan, 2020; Wagner, 2021) as well as the long-term development of polarisation over time (Boxell et al., 2024; DiMaggio et al., 1996; Garzia et al., 2023; Munzert & Bauer, 2013).

Polarisation can be understood both as a state and as a process in which groups or individuals display large gaps in terms of their ideological positions or social identity, or experience an increasing distance over time, thus resulting in decreased proximity (DiMaggio et al., 1996). In this context, ideological or substantive proximity reflects the degree to which political, cultural, economic, and other attitudes align, while social identity proximity refers to the affiliation with particular social groups, which is expressed through affect. Notably, ideological positions and social identity are often closely linked. For example, someone with liberal or conservative attitudes often identifies with the corresponding group. Accordingly, several cross-national studies have shown that affective and ideological polarisation are correlated but not congruent (Reiljan, 2020; Riera & Madariaga, 2023; Wagner, 2021). Further, affective polarisation of the masses is associated with ideological extremes at the elite level (Riera & Madariaga, 2023), and the ideological distance between positions is positively correlated with a negative out-group feeling and a positive in-group feeling (Algara & Zur, 2023; van Erkel & Turkenburg, 2022). Others have even argued that ideological positions and affect between social identities are inextricably linked, making them difficult, if not impossible, to measure separately (Dias & Lelkes, 2022; Orr et al., 2023; Orr & Huber, 2020).

2.1. Interaction of Ideological Positions and Social Identities in Public Discourse

Individual discourse behaviour also reflects the interplay between an ideological or substantive position and social identity. Both one's substantive position and social identity shape the way one communicates messages to the outside world and interacts with others (Brüggemann & Meyer, 2023). The similarity

between two people also influences how they interact and communicate (Rogers & Bhowmik, 1970). Both the person presenting the argument and the substantive position determine whether one's argument is accepted, and thus, this combination determines whether their message is spread further (Cohen, 2003; Rekker, 2021). People also prefer to consume information from sources close to their positions, due to both their ideological position as well as their social identity (Dvir-Gvirsman, 2019). Additionally, trust in people who are perceived as different from oneself decreases with increasing affective and ideological polarisation (Hooghe & Oser, 2017; Rapp, 2016). Social identity and substantive positions also play a role in whether a discussion takes place at all, since people prefer to talk to those with similar political orientations (Settle & Carlson, 2019). This can even lead to people choosing their social environment according to their political beliefs (Santoro, 2023).

Further, the interaction between substantive positions and the role of social identities in individual behaviour can be applied to public discourse in social media. According to Kaakinen et al. (2018), the formation of groups is not determined solely by similarities in opinion but rather by social identity, which leads to a preference for information that confirms one's own group. As such, people also tend to avoid interacting with accounts that have different substantive positions than their own or have opposite social identities (Brüggemann & Meyer, 2023). This combination of interacting only with people who agree on substantive positions and have proximal social identities also helps explain why people interact with each other on social media.

Accordingly, in this article, I consider polarisation in public discourse not as separate affective and ideological polarisation but as the combined result of both types of polarisation. As this interaction between the polarisation types is already expressed in individual interactions between people on social media, it is unsurprising that in a network like Facebook, which is primarily based on existing social relationships, a *like* can be interpreted not only as an expression of positive agreement with the substantive position of a post but also as a signal of the relationship between the people involved (Sumner et al., 2018). Likes offer a low-threshold way for likers to communicate with posters and present their identity to the outside world (Sumner et al., 2018). On Twitter, the content and the relationships between accounts drive people's decisions to retweet a tweet (Shi et al., 2017). In addition to the tweet's substantive content, the account from which the tweet originated must be considered credible and trustworthy (Metaxas et al., 2015). People are also more likely to retweet tweets that have already been retweeted by their own social group (Rudat & Buder, 2015). Interactions such as liking or retweeting suggest a positive relationship between accounts, demonstrating similarity in terms of both substantive positions and social identities. While quoted retweets can serve as criticism, users often prefer posting screenshots of an account's original tweet to avoid increasing its reach. Although some accounts explicitly state that retweets do not mean endorsement, the fact that such disclaimers exist suggests that retweets are generally perceived as a form of endorsement (Metaxas et al., 2015). Even though some retweets may be intended negatively, in established literature on public Twitter discourse, they are generally interpreted as expressions of positive connections (T. H. Y. Chen et al., 2021; Conover et al., 2011; Darius, 2022; Falkenberg et al., 2022; Kubinec & Owen, 2021). Thus, in this study, retweets indicate proximity between accounts, capturing both shared positions on substantive issues and similarities in social identities.

2.2. *Camps of Public Climate Policy Discourse*

This article examines polarisation in climate policy discourse from two distinct perspectives: one based on partisan lines and the other on discourse-evolving groups. The analytical foundation for defining the opposing camps in both perspectives is the interplay between substantive positions and social identity, which reflects the combined ideological and affective dimensions of polarisation in public discourse and constitutes a deep divide in society that extends beyond differences in belief alone.

The first perspective considers partisan camps structured along a traditional left–right spectrum, which in multi-party systems extends beyond the parties themselves, resulting in the development of cross-party social identities and ideological groups (Bantel, 2023; Renström et al., 2021; Vegetti & Širinić, 2019). This structural division of the political system is also evident in climate policy, in which one’s ideological position is strongly related to both the belief in anthropogenic climate change and the willingness to mitigate it (McCright & Dunlap, 2011a; McCright et al., 2016; Poortinga et al., 2019). People on the right of the political spectrum are less likely to believe in anthropogenic climate change and, consequently, less likely to support policies that protect the climate. A person’s ideological position also influences their perception of climate change as a serious problem (Lewis et al., 2019): Left-wing or green party voters in Europe tend to be more concerned about anthropogenic climate change and its impacts than right-wing or conservative party voters (Fisher et al., 2022). Although the economic and cultural attitudes within the political camps show similar patterns, differences exist in how individuals perceive the effects of climate change (Fisher et al., 2022). Further, individuals’ positions on climate change are not solely based on substantive standpoints but are also closely linked to their social identities (Bliuc et al., 2015; Fielding & Hornsey, 2016; Vesely et al., 2021). Hornung (2022) even showed that European Parliament members’ social identity played a significant role in their voting behaviour on climate policy.

The second perspective—informed by climate governance research on the crucial role of non-partisan actors—focuses on discourse-evolving groups. These form organically around shared beliefs and identities, creating two opposing camps: a pro-climate camp and an anti-climate camp. The pro-climate camp is primarily supported by actors who perceive climate change as a threat to humanity and advocate for climate policy measures. However, it is also sustained by the broad societal pro-climate consensus in Europe (Fisher et al., 2022; Poortinga et al., 2019; Tranter & Booth, 2015). This camp is not homogeneous but comprises various actors, including NGOs, scientists, international organisations, politicians, and activists (K. Chen et al., 2023; Falkenberg et al., 2022; Vu et al., 2020). Non-partisan actors are particularly influential because climate positions and actions are closely linked to social identities (Bamberg et al., 2015). How strongly climate policy positions are part of one’s own social identity and how salient they are strongly influence climate policy attitudes and actions (Barth et al., 2021; Fielding & Hornsey, 2016). The more important it becomes for someone’s identity to belong to a group, the more their behaviour tends to reflect this. In this context, the Fridays for Future movement plays a particularly noteworthy role in the German climate policy discourse: Fridays for Future has helped raise public awareness of climate change and is gaining prominence in the political centre (Schürmann, 2023; Schwörer, 2024). On social media platforms such as Twitter, climate activists have been particularly successful in attracting attention and mobilising supporters (Barrie et al., 2024; Falkenberg et al., 2022; Padilla-Castillo & Rodríguez-Hernández, 2023).

The connection between substantive beliefs and social identity is not unique to the pro-climate camp. For the anti-climate camp, rejecting climate protection measures is closely tied to perceiving them as a threat to one's identity (Feygina et al., 2010; Forchtner et al., 2018; Hoffarth & Hodson, 2016; Lockwood, 2018). Thus, denying climate change among conservative white men also serves to protect their own group identity and justify a social system that favours their group; it is, therefore, an integral part of their identity (Krange et al., 2019; McCright & Dunlap, 2011b). This feeling is particularly strong among right-wing populists, as climate protection is often interpreted as a constraint imposed by the liberal elite (Forchtner et al., 2018; Lockwood, 2018). Rejecting climate protection measures as the dictates of the liberal elite is also widespread in right-wing populist circles in Germany (Forchtner et al., 2018; Küppers, 2022). In this context, climate change denial is often closely linked to distrust of environmental institutions, driven by right-wing and populist anti-establishment attitudes (Krange et al., 2021). Furthermore, people with right-wing attitudes have less trust in climate science, and this trust decreases further with decreasing trust in the government (Pechar et al., 2018).

2.3. Polarisation of the Discourse on Climate Change in the Election Campaign

Building on the apparent conflicts in climate discourse, this section formulates the study's research questions. This section develops the theoretical assumption that election campaigns have a differential impact on the polarisation between partisan camps compared to the discourse-evolving pro- and anti-climate camps.

During an election campaign, political competition and information increase, highlighting substantive differences and increasing the salience of social identity (Huddy, 2015). Further, party identification increases, which leads to stronger party cohesion and more mobilisation (Michelitch & Utych, 2018; Singh & Thornton, 2019). The salience of social identities can influence political support for climate protection measures by activating political identities and thereby consolidating or reinforcing existing positions (Diamond, 2020; Unsworth & Fielding, 2014). Such campaigns not only strengthen the cohesion of the in-group, but negative campaigns also increase aversion towards the out-group and, thus, lead to increasing affective polarisation (Lau et al., 2017). This dynamic is further reinforced when opposing positions are perceived as threatening to one's identity, as in climate politics (Krange et al., 2019; Riek et al., 2006). According to Renström et al. (2021), a perceived threat to one's in-group, such as an opposing camp gaining influence through an election, increases cohesion across party lines and social groups.

In addition to election campaigns increasing the salience of social identities, they also directly influence ideological positions. Voters' political knowledge increases during an election campaign, and voters are more likely to be able to categorise the parties' positions thematically (Hansen & Pedersen, 2014; van der Meer et al., 2016). This facilitates voters' decisions in favour of a party and leads to sorting along party lines, and it also fosters cohesion by encouraging individuals to focus on their own position. In addition, voters tend to consume content aligning with their position, which reinforces their views and, in turn, contributes to the homogenization of opinions at the group level (Jost et al., 2022). Further, Hernández et al. (2021) argued that parties increase ideological polarisation by highlighting ideological and substantive differences to persuade voters. In this context, framing can also lead to issues being viewed from a particular perspective, increasing the distance between positions (Feinberg & Willer, 2019).

After an election, public political conflict tends to decline, and, in multi-party systems, coalition negotiations begin to form a government. Several studies have shown that both coalitions and the signalling of coalitions between parties can reduce affective polarisation (Gidron et al., 2023; Hahm et al., 2024; Wagner & Praprotnik, 2024). Accordingly, partisans' willingness to compromise increases with the start of coalition negotiations, suggesting a decline in partisan cohesion (Plescia et al., 2022). As mobilisation and partisan demarcation decline the further one gets from an election, so too does party identification (Michelitch & Utych, 2018; Singh & Thornton, 2019). Correspondingly, Hernández et al. (2021) found that ideological polarisation declines if the temporal distance from an election grows. This ideological decline explains most of the subsequent decline in affective polarisation, which is consistent with studies on the correlation between affective and ideological polarisation (Reiljan, 2020; Wagner, 2021). Research by Hansen and Kosiara-Pedersen (2017) and Hernández et al. (2021) indicates that polarisation between partisans' political attitudes increases during an election campaign but approaches pre-election levels afterwards. Thus, the impact of an election on partisans' level of information and mobilisation leads to the following research question:

RQ1: Does polarisation in climate policy discourse on Twitter between left-wing and right-wing partisans temporarily intensify during election campaigns?

Within a democratic system, different groups may be polarised to different degrees (Wagner, 2024). This suggests that polarisation might exhibit different dynamics in election campaigns. Discourse-evolving groups that have naturally formed in the public discourse on climate policy due to their social identities and ideological positions have deeply rooted climate-related beliefs. Thus, a climate-friendly stance is either viewed as integral to one's identity or correspondingly rejected. Furthermore, the issue's relevance is maintained in public debate via ongoing public discourse, regular mobilisation campaigns, and persistent media attention, as climate change is often linked to threats such as food and water security (Hase et al., 2021; Schäfer et al., 2016). For example, Fridays for Future has been successfully mobilising large numbers of people both offline and online for years, thereby shaping the public discourse (Barrie et al., 2024; Padilla-Castillo & Rodríguez-Hernández, 2023; Schürmann, 2023). Conversely, the ongoing visibility of this mobilisation and any associated shifts in social structures can evoke a sense of threat, thus increasing resistance within the anti-climate camp (Gaertner et al., 1993; Krange et al., 2019; Oakes, 1987; Renström et al., 2021), and the issue's high salience strengthens group cohesion on both sides, thereby consolidating positions already established before an election campaign and maintaining a persistently high level of polarisation.

This effect of sustained prominence is enhanced by social media incentives and algorithms that strengthen the formation of distinct camps in the public discourse (Cinelli et al., 2021). These highly entrenched camps within public discourse increase polarisation between groups and also encourage an environment in which misinformation and conspiracy theories spread. In such contexts, different perceptions of what counts as factual information enable some groups to construct coherent but exclusionary worldviews that actively dismiss alternative viewpoints, undermining the possibility of shared dialogue and accelerating the breakdown of public discourse (Nguyen, 2020; Van Bavel & Pereira, 2018). In this type of environment, short-term campaigns may be unlikely to significantly impact the polarisation between pro- and anti-climate camps in public climate discourse. This is consistent with observations from highly polarised systems such as the US, where high party identification results in election campaigns having minimal influence on partisan polarisation (Fasching et al., 2024). This leads to the following research question:

RQ2: Is the climate policy discourse on Twitter between pro-climate and anti-climate camps characterised by consistently high and stable levels of polarisation throughout election campaigns?

3. Empirical Approach

Twitter data was collected during 2021, covering the climate policy debate nine months before and three months after the German federal election (election day was 26 September 2021). At the time of data collection, all data was publicly available. The data query for the year 2021 searched for all tweets containing *Klima* (German for climate), regardless of case. Since German naturally forms compound words, this approach also captured related terms such as *Klimakatastrophe* and *Klimawandel* (German for climate catastrophe and climate change). This method covers a broader range of words than a strict keyword search (see Supplementary File, Appendix A). In addition to the original tweets, the dataset contains all retweets. A total of 498,084 unique tweets were identified, which were shared 2,034,050 times via retweets.

There is no official start or end to election campaigns in Germany, so the pre- and post-election periods were determined using alternative indicators. The nominations of the front-runners, which took place between April and June 2021, served as the start of the campaign. To establish a benchmark, the observation period started in January 2021. The election outcome was formally realised once the new parliament was inaugurated in October, the coalition negotiations ended, and the new government was formed in early December. In addition, studies focusing on the post-election period suggest that electoral effects decline relatively soon thereafter (Hernández et al., 2021; Michelitch & Utych, 2018). To capture this dynamic, this study uses a three-month post-election observation period.

3.1. Network Creation

On Twitter, users can form connections with each other in various ways, such as by following and mentioning other users; both of these actions have been previously used to investigate polarisation (Barberá, 2015; Conover et al., 2011). However, a widely used approach to investigate polarisation on Twitter is examining retweets as an endorsement of the original poster's message to represent interactions (T. H. Y. Chen et al., 2021; Conover et al., 2011; Darius, 2022; Falkenberg et al., 2022; Kubinec & Owen, 2021). In many social media data studies, it remains unclear what kind of polarisation is being studied through these connections (Kubin & von Sikorski, 2021). As described in Section 2.1, I assume that a retweet is both a signal of a substantive endorsement and a signal of proximity to one's social identity. In this context, a retweet creates a positive connection (edge) between social identities and between the substantive position of two accounts (nodes) in a network. At the same time, however, a negative attitude towards another account or even a rejection of its position cannot be measured directly. Accordingly, different accounts with similar substantive positions and similar social identities have denser connections than accounts representing other positions or other opposing social identities. The denser the connections, the greater the proximity.

Isolating these groups of dense connections in the network, also called communities, and calculating the network polarisation is possible by applying the Leiden algorithm (Traag et al., 2019). To capture the dynamics of polarisation in an election, the directed network is divided into time points (Figure 1). The retweets and accounts are then assigned to the corresponding time points, and a separate network is

created for each time point. Accounts that appear at multiple time points are linked across times (Mucha et al., 2010). Thus, a complete network is created that allows communities to be identified at any point in time, with temporal dependencies accounted for in the calculation. This creates time-constant communities, but accounts can move between communities (Mucha et al., 2010). This flexible assignment reflects the dynamics of public discourse, where a person's proximity to different groups can change over time. The approach improves the accuracy of polarisation measurements by capturing realignment processes and varying degrees of group proximity that static community structures would otherwise obscure.

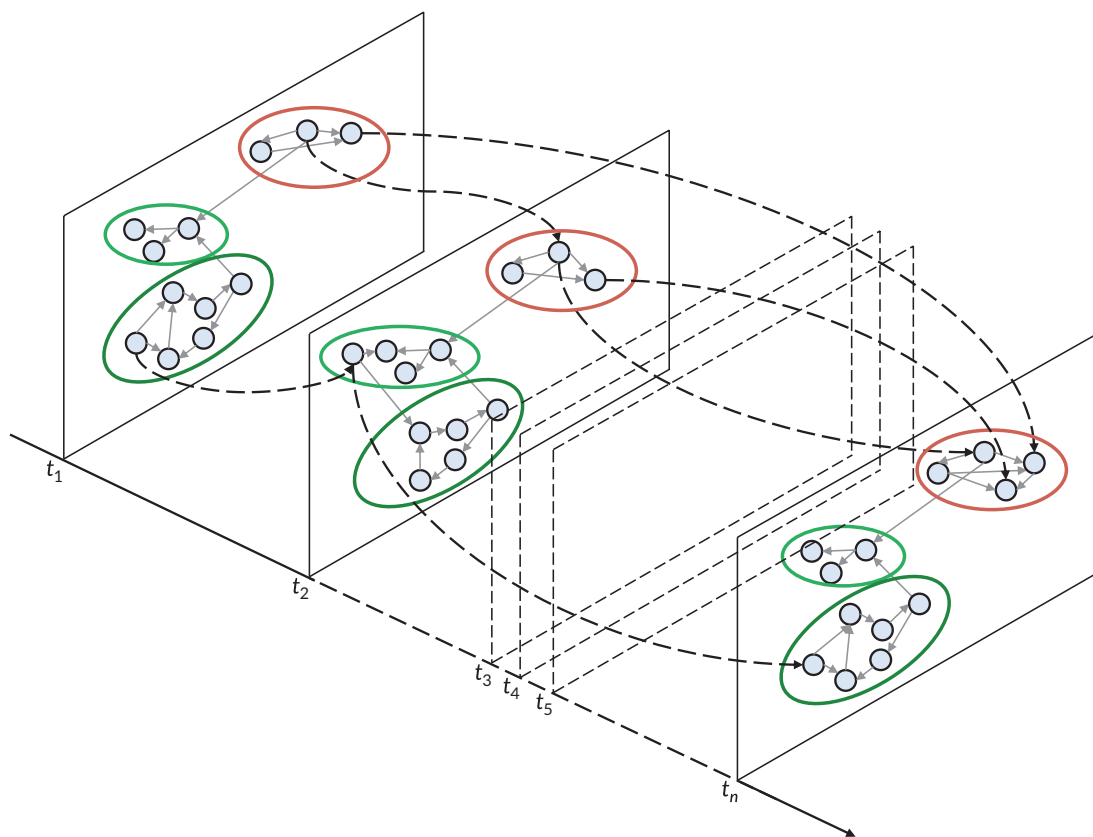


Figure 1. Illustration of the temporal network approach based on Mucha et al. (2010). Note: Extended by the possible movements of nodes based on the leidenalg documentation for temporal community detection (Traag et al., 2023).

Communities represent accounts with a dense network of retweets, which implies proximity in substantive positions and social identity. To determine these communities, the study applies two different approaches. First, to identify the discourse-evolving groups in the climate discourse network, the Leiden algorithm was applied unchanged (Traag et al., 2019). Second, partisan communities were determined by using the candidates of the parties involved in the climate discourse during the federal election as anchors (Sältzer et al., 2023). These partisan anchors represent the following parties: Sozialdemokratische Partei Deutschlands (Social Democratic Party; SPD), Bündnis 90/Die Grünen (The Greens), Die Linke (The Left), Freie Demokratische Partei (Free Democratic Party; FDP), Christian Democratic Parties (CDU/CSU), and Alternative für Deutschland (Alternative for Germany; AfD). This means that at the start of the Leiden algorithm, each party represented a distinct community. During community detection, the partisan communities were created based on a dense network of retweets with these partisan anchors. Thus,

partisan communities include densely connected accounts centred on candidates, reflecting both shared political views and a common social identity with the party. The 20 most retweeted tweets from the five most influential (most retweeted) accounts were reviewed, and candidate influence was analysed to evaluate partisan community quality. To address RQ1 and RQ2, the partisan and discourse-evolving communities were manually divided into two camps. This created a network divided into left- and right-wing camps based on partisan communities and a network divided into pro- and anti-climate camps. The communities' classification was based on the analysed tweets from the most influential accounts and the community affiliation of the federal election candidates. An alternative approach would be to use a large language model to determine the alignment of the different communities. However, this approach would distort the influence of tweets in the climate discourse or, if weighted by influence, lead to a methodologically more complex but conceptually comparable approach that would also have required even more extensive validation.

However, the Leiden algorithm faces a methodological limitation inherent in algorithmic community detection. Modularity optimisation methods are subject to the “resolution limit,” a phenomenon where algorithms tend to merge small, well-defined communities into larger ones (Fortunato & Barthélemy, 2007). Varying the resolution parameter does not fully resolve this issue; instead, it introduces a dilemma: A low value reinforces the merging of small groups, while a high value artificially splits large, cohesive ones (Lancichinetti & Fortunato, 2011).

This challenge was addressed using a two-step approach. First, the Leiden algorithm identified partisan and discourse-evolving communities, yielding a granular microstructure. Although the resolution limit influences the precise size and composition of these communities, their formation was not arbitrary. These communities are internally coherent and clearly distinct from one another, revealing the internal structure of the overarching camps. Second, these algorithmically identified communities were assigned to their corresponding, theoretically grounded superordinate camps. This assignment was based on theoretical considerations regarding the division of the partisan spectrum into left- and right-wing camps as well as distinguishing between pro- and anti-climate camps.

3.2. Measuring Polarisation in Temporal Networks

Both affective and ideological polarisation result from the relation between in-group cohesion and distance to the out-group (DiMaggio et al., 1996; Iyengar et al., 2012; Lelkes, 2016). In this study, polarisation was calculated accordingly. In a network, the cohesion of a given community can be understood as in-group strength (IS), determined by the number of interactions within a community. The number of connections from one community to another then describes the out-group strength (OS). An increase in in-group or out-group strength describes an increase in connections within or between the communities. Since a connection, or a retweet, reflects an agreement with the substantive position and a similar social identity, an increase in strength indicates a more cohesive community or more significant similarity between two communities in terms of substantive position and social identities.

Although people prefer to interact with like-minded individuals, the intensity of these interactions depends on how many options are available. If only a few such communities exist, the connections between them strengthen. To account for this when calculating polarisation, the in-group strength at time t was calculated

as the ratio of the observed interaction to the possible interactions, where A is the adjacency matrix, C_n^t is the set of nodes in community n , and s_n^t is the number of nodes in that community:

$$IS_n^t = \frac{1}{s_n^t(s_n^t - 1)} \cdot \sum_{i \neq j \in C_n^t} A_{i,j}^t$$

Fransson et al. (2018) and T. H. Y. Chen et al. (2021) used the approach of considering the strength of connections between and within communities, but it has been adapted here for the directed network. The time component was implemented as in Fransson et al. (2018). The out-group strength of one community (n) to another (m) is calculated by dividing the sum of the observed interactions from one community to the other by the number of possible interactions between them (Fransson et al., 2018):

$$OS_{n,m}^t = \frac{1}{s_n^t \cdot s_m^t} \cdot \sum_{i \in C_n^t, j \in C_m^t} A_{i,j}^t$$

As a retweet represents substantive agreement and similarity between social identities, an increase in in-group strength signals growing proximity of social identities and alignment on substantive positions. This is reflected in increasing cohesion within the community and, thus, an increase in polarisation. On the contrary, if the out-group strength between two communities increases, the communities are closer to each other, and polarisation decreases.

To calculate the polarisation of a community within the network, the difference between the in-group and out-group strength of community n and all other communities in the network was computed. The polarisation index (P) is based on the formulation by Reiljan (2020), but adapted for network-specific conditions, is calculated for each community n at time t as follows:

$$P_n^t = \sum_{m=1, m \neq n}^M \left[\left(\frac{IS_n^t - OS_{n,m}^t}{IS_n^t + OS_{n,m}^t} \right) \cdot \left(\frac{\text{com_share}_m^t}{1 - \text{com_share}_{nc}^t - \text{com_share}_n^t} \right) \right]$$

According to Krackhardt and Stern (1988), normalisation allows for comparison between communities. As a result, P is between -1 and 1 , where a strength of 1 indicates complete separation and 0 indicates balanced in-group and out-group strength. As in Reiljan (2020) and Wagner (2021), the share of out-group communities (com_share_m) was considered to capture the influence on polarisation. However, as interactions were not present between all communities, both the share of community n (com_share_n) and the share of communities for which there was no contact (com_share_{nc}) were included in the calculation.

To capture the polarisation in the overall network, the polarisation score of each community was weighted by the community's share of the overall network, as suggested by Wagner (2021) and Reiljan (2020), and summed across all communities:

$$P^t = \sum_{n=1}^N \left[\sum_{m=1, m \neq n}^M \left[\left(\frac{IS_n^t - OS_{n,m}^t}{IS_n^t + OS_{n,m}^t} \right) \cdot \left(\frac{\text{com_share}_m^t}{1 - \text{com_share}_{nc}^t - \text{com_share}_n^t} \right) \right] \right] \cdot \text{com_share}_n^t$$

In this article, I considered polarisation at different levels. The polarisation index then describes either the polarisation in the system as a whole (P^t) or the polarisation of communities (P_n^t). The polarisation of a community describes the relationship between cohesion and distance from other communities. Therefore, community polarisation always refers to a community's polarisation in relation to at least one other community. Accordingly, the polarisation of the overall system is the weighted sum of the polarisation of the communities. The polarisation of individual communities towards others was used to understand the

underlying structures of the polarisation of the overall debate. This included an analysis of the in-group and out-group strengths as a normalised index. In this context, the out-group strength of a community is the weighted average of the out-group strength of the community relative to the others. Research questions (RQ1 and RQ2) regarding polarisation between the partisan camps and between the pro- and anti-climate camps were analysed descriptively by examining the time series for structural breaks and changes in variance.

4. Results

The 10 accounts with the most retweets were analysed to identify the most influential accounts in the climate policy debate across the network (Table 1). The most influential account belonged to Luisa Neubauer, one of the most prominent German activists from Fridays for Future. The Fridays for Future Germany account also held a significant position in the network, ranking third most influential. Three additional influential accounts were associated with researchers and science communicators, while one belonged to a journalist. Among the 10 most influential accounts in the climate policy discourse, Karl Lauterbach's account was the only one representing a professional politician. The remaining accounts included those of a cultural creator, an activist association, and a satirical profile.

Table 1. The 10 most influential accounts in climate discourse, according to the number of times they were retweeted.

Account	Number of retweets	Description
Luisa Neubauer	62,054	Climate activist (Fridays for Future)
Özden Terli	35,261	Meteorologist and weather anchor
Fridays for Future Germany	29,889	Main account of Fridays for Future in Germany
Prof. Stefan Rahmstorf	29,792	Climate researcher (Potsdam Institute for Climate Impact Research) and Professor of Physics of the Oceans (Potsdam University)
Volker Quaschning	24,121	Professor for renewable energy systems at the Berlin University of Applied Sciences
Prof. Karl Lauterbach	21,374	Member of the German parliament (SPD)
Mario Sixtus	18,062	Journalist, scriptwriter, and filmmaker
Campact	16,662	An association committed to progressive politics and democracy
Sara Schurmann	16,333	Journalist
Kaffeecup	15,128	Humorous and satirical account

A better understanding of the different currents in the climate discourse can be gained by examining individual discourse-evolving communities. The Leiden algorithm automatically determines the number of communities, preventing forced assignments. It detected 4,478 communities; 98% contained a maximum of 10 accounts, while the 20 largest consistently contained between 97% and 99% of all accounts. The polarisation was therefore calculated across all communities with weights proportional to their respective size. Four of the top 20 communities were classified as discourse in Switzerland or Austria and

were thus removed. The analysis focused on the six largest communities, representing between 63% and 88% of all accounts; from April to October, they consistently represented over 72% of all accounts. The results indicate that community sizes underwent marked changes throughout the election campaign (see Supplementary File, Appendix B). A modest increase in community size was apparent in February, followed by a pronounced expansion from May to June. After the campaign ended with the election, there was a decrease in community size. Simultaneously, the average number of retweets per account increased steadily from May to September but declined significantly post-election.

The five accounts with the most retweets per community were considered to identify the orientation of the communities. The mainstream and largest community was a mix of climate activists, satirical, and journalistic accounts. The third-largest community was a combination of scientists and science journalism accounts related to climate policy. The fourth- and sixth-largest communities were party-based, whereby the fourth was connected to The Greens, and the sixth to The Left. Therefore, accounts belonging to politicians or political parties were the most influential in these communities. The country's major newspapers dominated the fifth-largest community. The second-largest community comprised far-right bloggers and conspiracy theorists (Table 2). This community also included Germany's largest tabloid newspaper. The community of right-wing bloggers and conspiracy theorists was characterised by statements against climate protection measures, by describing climate discourse as hysterical and exaggerated, and by casting doubt on scientific findings. This community also included the majority of the accounts belonging to federal election candidates who can be assigned to the FDP, CDU/CSU, and AfD.

Table 2. Most influential accounts in the right-wing and conspiracy community.

Account	Number of retweets	Description
Neverforgetniki	14,523	Right-wing blogger
Roland Tichy	12,108	Editor of a right-wing alternative magazine
Boris Reitschuster	12,032	Right-wing blogger
Hartes Geld	7,827	Right-wing blogger
Ulrich van Suntum	5,955	Emeritus professor of economics

To better understand the polarisation of discourse-evolving groups in the climate policy discourse, I examined the polarisation of the different discourse-evolving communities in relation to each other (Figure 2). Pairwise polarisation scores for each community are given in Supplementary File, Appendix C. Strikingly, the right-wing and conspiracy community (red line) was highly polarised against all other groups, and its polarisation level remained constant throughout the campaign. All other communities showed lower polarisation towards communities other than the right-wing and conspiracy community. The mainstream community (green line) was characterised by the lowest polarisation towards the others. Except for the right-wing and conspiracy community, all other groups showed decreasing polarisation towards each other from May onwards, and polarisation returned to original levels after the election concluded in October. This declining polarisation occurred due to both an increasing number of interactions between the communities (out-group strength) and a decreasing number of interactions within the communities (in-group strength). The clear separation of the right-wing and conspiracy community from the other communities was characterised by a consistently low out-group strength with the other communities and a relatively stable in-group strength.

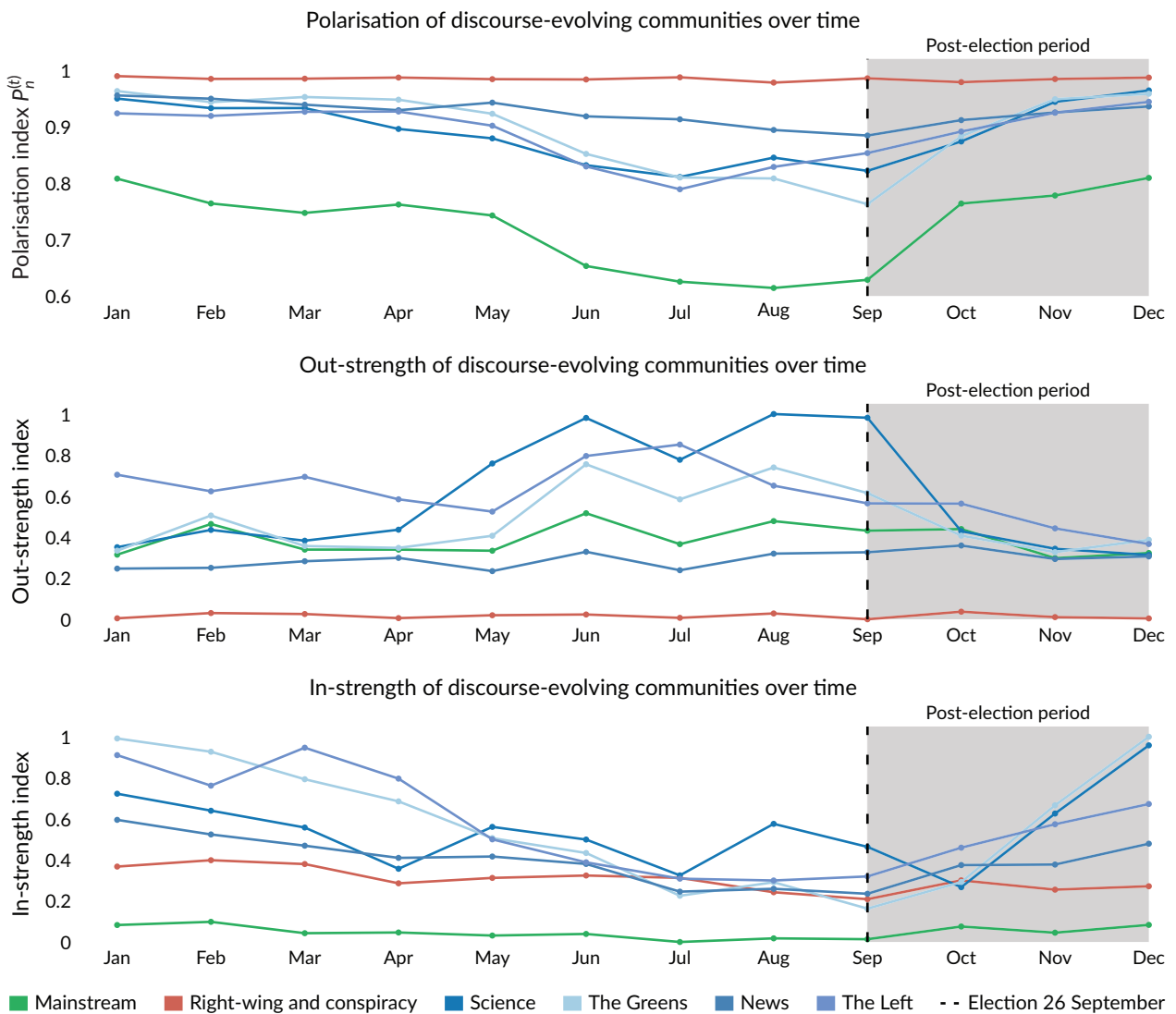


Figure 2. Polarisation, out-strength, and in-strength of discourse-evolving communities over time. Notes: The top diagram shows the overall polarisation index for each of the six largest discourse-evolving communities (a representation of the individual communities' polarisation towards each other can be found in the Supplementary File); the middle diagram shows the normalised out-group strength; the bottom diagram shows the normalised in-group strength.

Similar to the Figure 2 analysis of discourse-evolving community polarisation, the picture among partisan communities is also mixed (Figure 3). Communities coloured in red were assigned to the right-wing partisan camp, consisting of Christian Democrats (CDU/CSU), Liberals (FDP), and right-wing populists (AfD). Communities coloured in green represent the left-wing partisan camp, including social democrats (SPD), Leftists (The Left), and The Greens. While polarisation decreased among left-wing partisans from May onwards and increased from October onwards, polarisation among right-wing partisans remained constant. The decreasing polarisation among left-wing parties is attributable to the increasing interaction between these parties and, above all, to the increasing out-group strength of The Greens and the SPD. A slight decrease in out-group strength occurred for the right-wing parties between May and September. In-group strength constantly declined for all partisan communities from the beginning of the year until the month of the election.

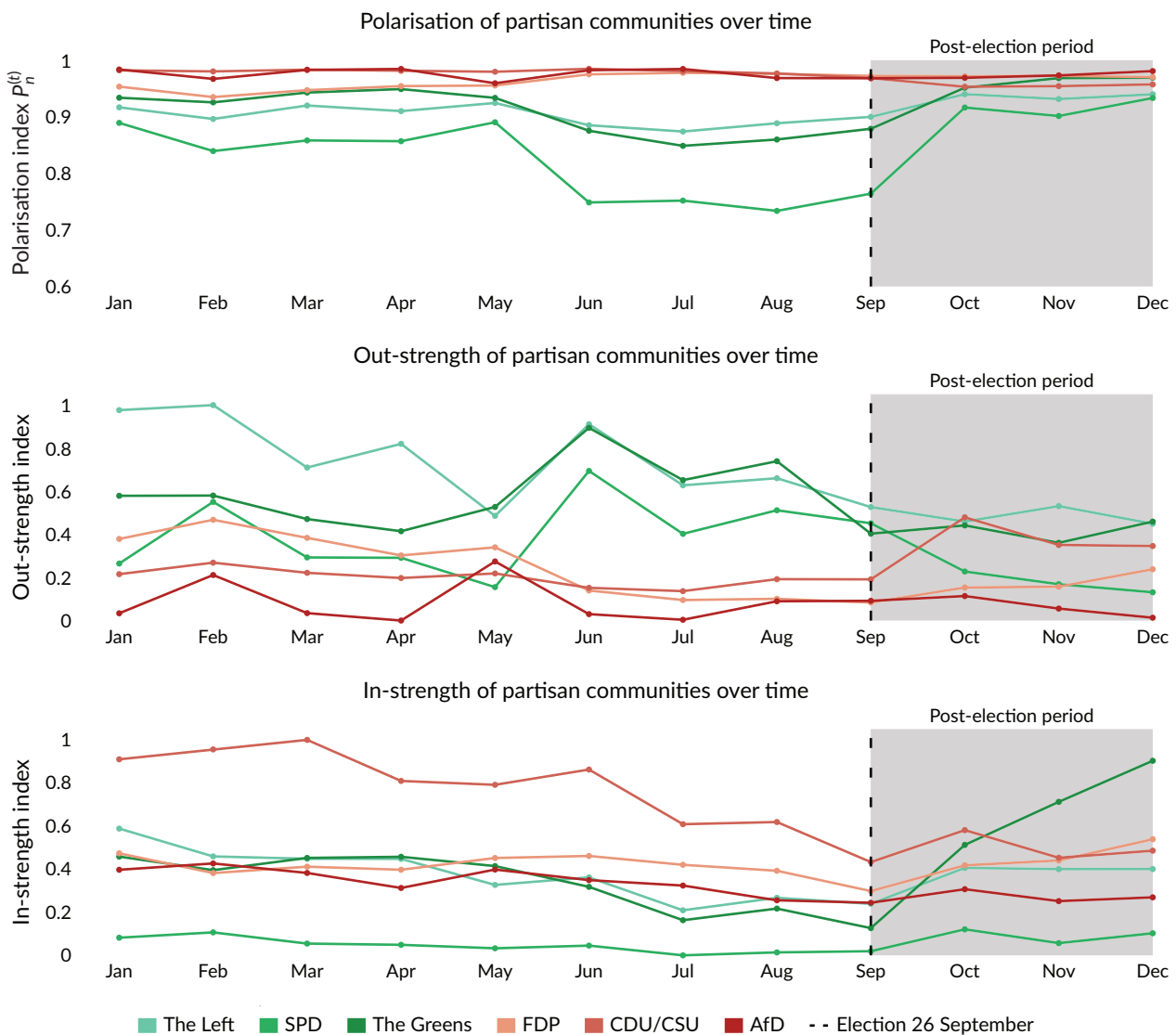


Figure 3. Polarisation, out-strength, and in-strength of partisan communities over time. Notes: The top diagram shows the polarisation index for each of the six partisan communities (a representation of the individual communities' polarisation towards each other can be found in the Supplementary File); the middle diagram shows the normalised out-group strength; the bottom diagram shows the normalised in-group strength.

The polarisation analysis, both among partisans and discourse-evolving communities, showed two opposing camps. The alignment of political parties along the left-right spectrum defined the partisan camps. At the discourse-evolving community level, camps were identified by manually categorising communities based on their most influential accounts and the nature of their tweets. The pro-climate community included a wide range of actors, including Fridays for Future activists, scientists, and the press, extending from left-wing progressive circles to the centre of social discourse. In contrast, the anti-climate community was dominated by right-wing bloggers, who exerted considerable influence within this camp.

Polarisation between the left and right of the partisan spectrum increased from March to June/July and then decreased again until the election in September (Figure 4). Polarisation then stabilised at a slightly higher level than before the election. The increase and subsequent decrease in polarisation are evident for both the right

and the left camp. Compared to the polarisation between left and right partisans, a higher polarisation was found between pro- and anti-climate communities. Furthermore, although the polarisation between pro- and anti-climate showed fluctuations, no trend was identified, and these fluctuations ended in September with the election month. Overall, polarisation from pro-climate to anti-climate and vice versa can be considered stable.

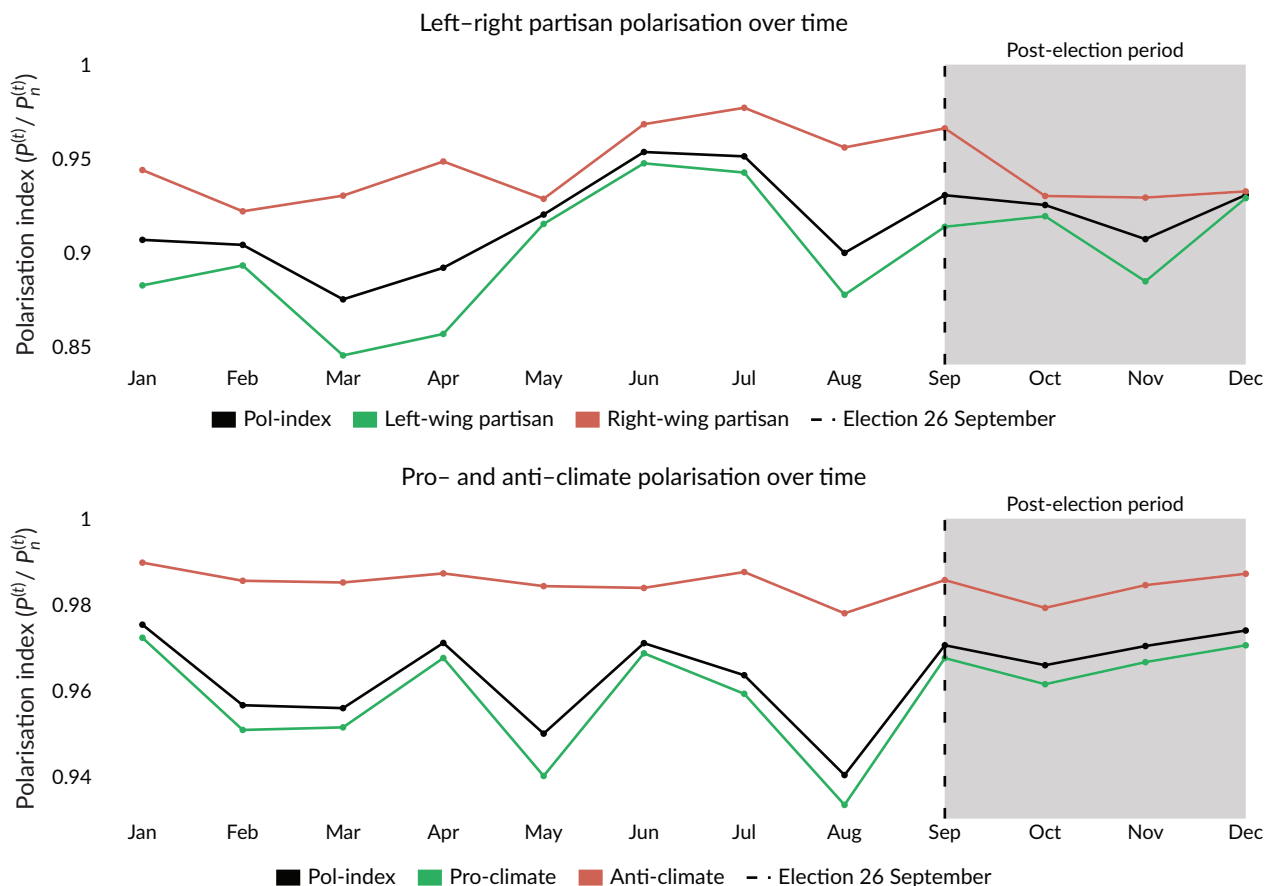


Figure 4. Comparison of polarisation dynamics between partisan (left-right) and discourse-evolving camps (pro- and anti-climate).

5. Discussion

Previous studies have indicated that polarisation increases during election campaigns (Hansen & Kosiara-Pedersen, 2017; Sood & Iyengar, 2016) and then decreases afterwards (Hernández et al., 2021). However, this dynamic is uncertain in areas of high division, such as climate policy, where positions and identities are deeply intertwined. Furthermore, most existing studies have not distinguished between partisan polarisation and polarisation within discourse-evolving camps, based on both substantive proximity and proximity of social identities. This distinction is particularly important in climate policy, where conflicts are not exclusively drawn along party lines.

The temporal analysis of Germany's 2021 climate policy discourse reveals two fundamentally different polarisation patterns. First, partisan polarisation between left- and right-wing partisan camps increased from March to June/July 2021, receding by election day in late September, though stabilising at a slightly higher level than pre-campaign. This variation does indicate that the election campaign intensified the conflict

between partisans, but also that the division into camps was not absolute and that the conflict would subside after the election, leaving room for compromise. Second, this study revealed a more resilient line of conflict throughout the year by examining polarisation through the discourse-evolving camps rather than through partisans. This divide separates a pro-climate camp, supported by activists, scientists, and the media, from an anti-climate camp, influenced mainly by right-wing bloggers. This stable division reflects the close connection between ideology and social identity in climate policy (Bliuc et al., 2015; Chinn et al., 2020; McCright et al., 2016; Vesely et al., 2021). Thus, election campaigns influence partisan polarisation but not the underlying camp structure of the climate policy discourse; this points to a more fundamental conflict within German climate policy on Twitter. Furthermore, the conflict has a pronounced anti-establishment dimension, which Uscinski et al. (2021) identified as a key axis of polarisation beyond classical partisan conflict. Within the anti-climate camp, climate protection measures were often framed as paternalistic and an attack on individual freedom, reflecting patterns of far-right climate communication (Forchtner, 2019).

The influence of non-party-political actors in the climate discourse, observed in both the pro- and anti-climate camps in this study, reflects the overall structure of climate governance. Dellmuth and Shyrokykh (2023) pointed out that previous research suggests that party and non-party-political actors directly influence governance processes via Twitter by diffusing norms, providing opinions to leadership, and shaping public opinion. In this context, this study showed (with one exception) that the influence of party-political actors is largely limited to separate discourse structures within the network. The Greens and The Left were located in the pro-climate camp alongside Fridays for Future activists and the scientific community, but each party had its own distinctive discourse structure. This pattern reflects the importance of climate policy for these parties and also indicates a clear separation between their partisan discourse and other groups in the network that also belong to the pro-climate camp but develop around non-party actors. On the other side, as Darius (2022) also observed, candidates from the CDU/CSU and FDP formed a common discourse structure with the AfD within the right-wing and conspiracy community, in which non-party actors have significant influence. It follows that the discourse structure within the anti-climate camp was less differentiated than that within the pro-climate camp.

In addition to the election campaign and the election itself, other events influenced the climate policy discourse during the observation period. Following the German Constitutional Court ruling in March 2021, the German Bundestag adopted stricter climate targets in June 2021. The polarisation between the scientific community, The Greens, and The Left decreased during this period. At the same time, the distance to the anti-climate camp remained large, which underlines the fundamentally divided discourse. During the flood disaster of July 2021, which caused over 200 fatalities in local areas in Germany and Belgium (Tradowsky et al., 2023), the results showed that while discursive activity increased in the form of more accounts and retweets, no immediate shift in the fundamental polarisation structure was observed. This suggests that while this disaster was reflected in the discourse, it did not change the existing structure of the discourse or polarisation. However, it is conceivable that the decline in polarisation in the subsequent month of August reflects a delayed discursive reaction to this crisis.

The analysis shows that the climate discourse exhibits two different polarisation dynamics: a volatile partisan polarisation between left and right and a persistently stable camp formation between pro- and anti-climate groups. For governance, this means that both levels need to be considered. Traditional negotiation mechanisms can work at the party level, but the discourse-evolving camps can only be reached through formats that appeal

to identities and involve non-partisan actors. Dellmuth and Shyrokykh (2023) argued that these actors shape public opinion on Twitter; if politicians ignore their role, even a cross-party consensus will remain ineffective. Lee (2015) also warned that deep divisions can lead to gridlock if formal majorities fail to gain social acceptance. Effective climate governance must, therefore, allow for partisan compromise while creating durable dialogue formats that address the divisions between camps and actively engage the norm-setting power of non-partisan actors (Cole et al., 2025; Jost et al., 2022). Approaches focusing on the common ground between camps can be particularly effective; for example, those emphasising cross-camp identities can lead to depolarisation (Klar, 2013).

The generalisability of the study's findings is nuanced, as the case study is limited to the German context during a single election. Yet, the distinction made here between partisan polarisation and polarisation between discourse-evolving groups can be transferred to other multi-party systems. This applies where climate policy positions cut across party lines and form pro- and anti-climate camps. In contrast, this distinction likely loses its analytical utility in two-party systems, where climate policy positions and party affiliations more frequently converge. Furthermore, the significance of specific actors in the German climate policy discourse must be assessed contextually. For instance, while the strong influence of the Fridays for Future movement might be specific to Germany, the mechanism behind it is transferable. The study suggests that non-partisan actors can play a structurally significant role in the polarisation dynamics reflected in both climate governance and climate discourse (Dellmuth & Shyrokykh, 2023; Dorsch & Flachsland, 2017; Falkenberg et al., 2022).

6. Conclusion

This study showed that the 2021 German election campaign temporarily increased the polarisation between left and right partisans in the climate debate. However, the election campaign only had a limited impact on the underlying conflict between pro- and anti-climate camps. Polarisation between left and right partisans increased from March to June 2021 and then stabilised just above initial levels. However, polarisation between the pro- and anti-climate camps remained at a high level throughout the year, proving largely resilient to the election campaign and external shocks such as the flood disaster or legislative changes.

Several limitations should be considered when interpreting the results, mainly because the data were collected in a system that could lead to polarised structures. Namely, Twitter's recommendation algorithm might increase polarisation, particularly by displaying tweets that other users with similar profiles have also liked (Shmargad & Klar, 2020). Additionally, the platform's user base does not represent the general population (Taddicken et al., 2019). The Leiden algorithm employed in this study entails methodological limitations that may specifically influence how individual community structures are interpreted. Therefore, future research should pursue three main directions. First, the analysis should be extended to include comparable datasets from other countries and platforms. Second, alternative methodological approaches could provide additional insights. Third, integrating online behavioural data with survey data would enable a more nuanced understanding of the interaction between individual attitudes and political communication.

The findings of this study make three main contributions to the research on political networks, climate governance, and polarisation. First, the results demonstrate that policy areas with strong identity dimensions are more resistant to the mobilisation and de-escalation mechanisms of electoral campaigns. This highlights the analytical need to distinguish between partisan polarisation and the formation of opposing camps that

develop from shared beliefs and identities beyond party politics. Second, the study empirically shows how the discursive power of non-partisan actors, such as Fridays for Future and right-wing bloggers, can superimpose traditional party-political dynamics. By doing so, it links theories of governance to the analysis of conflict and polarisation patterns in digital discourse. Third, the utilised temporal network approach represents an adaptable methodological tool that can be used in other contexts to systematically capture the temporal dimension of such networks and trace their influence on governance processes.

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GPT-4o and Gemini 2.5 Pro were used for grammar and style improvement. All suggestions were carefully checked to ensure that the substance of the text was not affected.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

References

- Algara, C., & Zur, R. (2023). The Downsian roots of affective polarization. *Electoral Studies*, 82, Article 102581. <https://doi.org/10.1016/j.electstud.2023.102581>
- Bamberg, S., Rees, J., & Seebauer, S. (2015). Collective climate action: Determinants of participation intention in community-based pro-environmental initiatives. *Journal of Environmental Psychology*, 43, 155–165. <https://doi.org/10.1016/j.jenvp.2015.06.006>
- Bantel, I. (2023). Camps, not just parties. The dynamic foundations of affective polarization in multi-party systems. *Electoral Studies*, 83, Article 102614. <https://doi.org/10.1016/j.electstud.2023.102614>
- Barberá, P. (2015). Birds of the same feather tweet together: Bayesian ideal point estimation using Twitter data. *Political Analysis*, 23(1), 76–91. <https://doi.org/10.1093/pan/mpu011>
- Barrie, C., Fleming, T. G., & Rowan, S. S. (2024). Does protest influence political speech? Evidence from UK climate protest, 2017–2019. *British Journal of Political Science*, 54(2), 456–473. <https://doi.org/10.1017/S0007123423000376>
- Barth, M., Masson, T., Fritsche, I., Fielding, K., & Smith, J. R. (2021). Collective responses to global challenges: The social psychology of pro-environmental action. *Journal of Environmental Psychology*, 74, Article 101562. <https://doi.org/10.1016/j.jenvp.2021.101562>

- Billig, M., & Tajfel, H. (1973). Social categorization and similarity in intergroup behaviour. *European Journal of Social Psychology*, 3(1), 27–52. <https://doi.org/10.1002/ejsp.2420030103>
- Blüch, A.-M., McGarty, C., Thomas, E. F., Lala, G., Berndsen, M., & Misajon, R. (2015). Public division about climate change rooted in conflicting socio-political identities. *Nature Climate Change*, 5, 226–229. <https://doi.org/10.1038/nclimate2507>
- Boxell, L., Gentzkow, M., & Shapiro, J. M. (2024). Cross-country trends in affective polarization. *The Review of Economics and Statistics*, 106(2), 557–565. https://doi.org/10.1162/rest_a_01160
- Brüggemann, M., & Meyer, H. (2023). When debates break apart: Discursive polarization as a multi-dimensional divergence emerging in and through communication. *Communication Theory*, 33(2/3), 132–142. <https://doi.org/10.1093/ct/qtad012>
- Chen, K., Molder, A. L., Duan, Z., Boulianne, S., Eckart, C., Mallari, P., & Yang, D. (2023). How climate movement actors and news media frame climate change and strike: Evidence from analyzing Twitter and news media discourse from 2018 to 2021. *The International Journal of Press/Politics*, 28(2), 384–413. <https://doi.org/10.1177/19401612221106405>
- Chen, T. H. Y., Salloum, A., Gronow, A., Ylä-Anttila, T., & Kivelä, M. (2021). Polarization of climate politics results from partisan sorting: Evidence from Finnish Twittersphere. *Global Environmental Change*, 71, Article 102348. <https://doi.org/10.1016/j.gloenvcha.2021.102348>
- Chinn, S., Hart, P. S., & Soroka, S. (2020). Politicization and polarization in climate change news content, 1985–2017. *Science Communication*, 42(1), 112–129. <https://doi.org/10.1177/1075547019900290>
- Cinelli, M., De Francisci Morales, G., Galeazzi, A., Quattrocioni, W., & Starnini, M. (2021). The echo chamber effect on social media. *Proceedings of the National Academy of Sciences*, 118(9), Article e2023301118. <https://doi.org/10.1073/pnas.2023301118>
- Cohen, G. L. (2003). Party over policy: The dominating impact of group influence on political beliefs. *Journal of Personality and Social Psychology*, 85(5), 808–822. <https://doi.org/10.1037/0022-3514.85.5.808>
- Cole, J. C., Gillis, A. J., van der Linden, S., Cohen, M. A., & Vandenbergh, M. P. (2025). Social psychological perspectives on political polarization: Insights and implications for climate change. *Perspectives on Psychological Science*, 20(1), 115–141. <https://doi.org/10.1177/17456916231186409>
- Conover, M., Ratkiewicz, J., Francisco, M., Goncalves, B., Menczer, F., & Flammini, A. (2011). Political polarization on Twitter. *Proceedings of the International AAAI Conference on Web and Social Media*, 5(1), 89–96. <https://ojs.aaai.org/index.php/ICWSM/article/view/14126>
- Converse, P. E. (1964). The nature of belief systems in mass publics (1964). *Critical Review*, 18(1/3), 1–74. <https://doi.org/10.1080/08913810608443650>
- Dalton, R. J. (2021). Modeling ideological polarization in democratic party systems. *Electoral Studies*, 72, Article 102346. <https://doi.org/10.1016/j.electstud.2021.102346>
- Darius, P. (2022). Who polarizes Twitter? Ideological polarization, partisan groups and strategic networked campaigning on Twitter during the 2017 and 2021 German Federal elections ‘Bundestagswahlen.’ *Social Network Analysis and Mining*, 12, Article 151. <https://doi.org/10.1007/s13278-022-00958-w>
- Dellmuth, L., & Shyrokykh, K. (2023). Climate change on Twitter: Implications for climate governance research. *WIREs Climate Change*, 14(6), Article e848. <https://doi.org/10.1002/wcc.848>
- Diamond, E. P. (2020). The influence of identity salience on framing effectiveness: An experiment. *Political Psychology*, 41(6), 1133–1150. <https://doi.org/10.1111/pops.12669>
- Dias, N., & Lelkes, Y. (2022). The nature of affective polarization: Disentangling policy disagreement from partisan identity. *American Journal of Political Science*, 66(3), 775–790. <https://doi.org/10.1111/ajps.12628>
- DiMaggio, P., Evans, J., & Bryson, B. (1996). Have American’s social attitudes become more polarized? *American Journal of Sociology*, 102(3), 690–755. <https://www.jstor.org/stable/2782461>

- Dorsch, M. J., & Flachsland, C. (2017). A polycentric approach to global climate governance. *Global Environmental Politics*, 17(2), 45–64. https://doi.org/10.1162/GLEP_a_00400
- Dvir-Gvirsman, S. (2019). Political social identity and selective exposure. *Media Psychology*, 22(6), 867–889. <https://doi.org/10.1080/15213269.2018.1554493>
- Falkenberg, M., Galeazzi, A., Torricelli, M., Di Marco, N., Larosa, F., Sas, M., Mekacher, A., Pearce, W., Zollo, F., Quattrocioni, W., & Baronchelli, A. (2022). Growing polarization around climate change on social media. *Nature Climate Change*, 12, 1114–1121. <https://doi.org/10.1038/s41558-022-01527-x>
- Fasching, N., Iyengar, S., Lelkes, Y., & Westwood, S. J. (2024). Persistent polarization: The unexpected durability of political animosity around US elections. *Science Advances*, 10(36), Article eadm9198. <https://doi.org/10.1126/sciadv.adm9198>
- Feinberg, M., & Willer, R. (2019). Moral reframing: A technique for effective and persuasive communication across political divides. *Social and Personality Psychology Compass*, 13(12), e12501. <https://doi.org/10.1111/spc3.12501>
- Feygina, I., Jost, J. T., & Goldsmith, R. E. (2010). System justification, the denial of global warming, and the possibility of “system-sanctioned change.” *Personality and Social Psychology Bulletin*, 36(3), 326–338. <https://doi.org/10.1177/0146167209351435>
- Fielding, K. S., & Hornsey, M. J. (2016). A social identity analysis of climate change and environmental attitudes and behaviors: Insights and opportunities. *Frontiers in Psychology*, 7, Article 121. <https://doi.org/10.3389/fpsyg.2016.00121>
- Fisher, S. D., Kenny, J., Poortinga, W., Böhm, G., & Steg, L. (2022). The politicisation of climate change attitudes in Europe. *Electoral Studies*, 79, Article 102499. <https://doi.org/10.1016/j.electstud.2022.102499>
- Forchtner, B. (2019). Climate change and the far right. *WIREs Climate Change*, 10(5), Article e604. <https://doi.org/10.1002/wcc.604>
- Forchtner, B., Kroneder, A., & Wetzel, D. (2018). Being skeptical? Exploring far-right climate-change communication in Germany. *Environmental Communication*, 12(5), 589–604. <https://doi.org/10.1080/17524032.2018.1470546>
- Fortunato, S., & Barthélemy, M. (2007). Resolution limit in community detection. *Proceedings of the National Academy of Sciences*, 104(1), 36–41. <https://doi.org/10.1073/pnas.0605965104>
- Fransson, P., Schiffler, B. C., & Thompson, W. H. (2018). Brain network segregation and integration during an epoch-related working memory fMRI experiment. *NeuroImage*, 178, 147–161. <https://doi.org/10.1016/j.neuroimage.2018.05.040>
- Gaertner, S. L., Dovidio, J. F., Anastasio, P. A., Bachman, B. A., & Rust, M. C. (1993). The common ingroup identity model: Recategorization and the reduction of intergroup bias. *European Review of Social Psychology*, 4(1), 1–26. <https://doi.org/10.1080/14792779343000004>
- Garzia, D., Ferreira da Silva, F., & Maye, S. (2023). Affective polarization in comparative and longitudinal perspective. *Public Opinion Quarterly*, 87(1), 219–231. <https://doi.org/10.1093/poq/nfad004>
- Gidron, N., Adams, J., & Horne, W. (2023). Who dislikes whom? Affective polarization between pairs of parties in western democracies. *British Journal of Political Science*, 53(3), 997–1015. <https://doi.org/10.1017/S0007123422000394>
- Hahm, H., Hilpert, D., & König, T. (2024). Divided we unite: The nature of partyism and the role of coalition partnership in Europe. *American Political Science Review*, 118(1), 69–87. <https://doi.org/10.1017/S0003055423000266>
- Hansen, K. M., & Kosiara-Pedersen, K. (2017). How campaigns polarize the electorate: Political polarization as an effect of the minimal effect theory within a multi-party system. *Party Politics*, 23(3), 181–192. <https://doi.org/10.1177/1354068815593453>

- Hansen, K. M., & Pedersen, R. T. (2014). Campaigns matter: How voters become knowledgeable and efficacious during election campaigns. *Political Communication*, 31(2), 303–324. <https://doi.org/10.1080/10584609.2013.815296>
- Hase, V., Mahl, D., Schäfer, M. S., & Keller, T. R. (2021). Climate change in news media across the globe: An automated analysis of issue attention and themes in climate change coverage in 10 countries (2006–2018). *Global Environmental Change*, 70, Article 102353. <https://doi.org/10.1016/j.gloenvcha.2021.102353>
- Hernández, E., Anduiza, E., & Rico, G. (2021). Affective polarization and the salience of elections. *Electoral Studies*, 69, Article 102203. <https://doi.org/10.1016/j.electstud.2020.102203>
- Hoffarth, M. R., & Hodson, G. (2016). Green on the outside, red on the inside: Perceived environmentalist threat as a factor explaining political polarization of climate change. *Journal of Environmental Psychology*, 45, 40–49. <https://doi.org/10.1016/j.jenvp.2015.11.002>
- Hooghe, M., & Oser, J. (2017). Partisan strength, political trust and generalized trust in the United States: An analysis of the General Social Survey, 1972–2014. *Social Science Research*, 68, 132–146. <https://doi.org/10.1016/j.ssresearch.2017.08.005>
- Hornung, J. (2022). Social identities in climate action. *Climate Action*, 1, Article 4. <https://doi.org/10.1007/s44168-022-00005-6>
- Huddy, L. (2015). Group identity and political cohesion. In R. A. Scott & S. M. Kosslyn (Eds.), *Emerging trends in the social and behavioral sciences* (pp. 1–14). Wiley. <https://doi.org/10.1002/9781118900772.etrds0155>
- Intergovernmental Panel on Climate Change. (Ed.). (2022). Annex II: Glossary. In *Climate change 2022: Impacts, adaptation and vulnerability. Contribution of working group II to the sixth assessment report of the intergovernmental panel on climate change* (pp. 2897–2930). Cambridge University Press. <https://doi.org/10.1017/9781009325844.029>
- Iyengar, S., Sood, G., & Lelkes, Y. (2012). Affect, not ideology: A social identity perspective on polarization. *Public Opinion Quarterly*, 76(3), 405–431. <https://doi.org/10.1093/poq/nfs038>
- Jost, J. T., Baldassarri, D. S., & Druckman, J. N. (2022). Cognitive–motivational mechanisms of political polarization in social-communicative contexts. *Nature Reviews Psychology*, 1, 560–576. <https://doi.org/10.1038/s44159-022-00093-5>
- Judge, M., Kashima, Y., Steg, L., & Dietz, T. (2023). Environmental decision-making in times of polarization. *Annual Review of Environment and Resources*, 48, 477–503. <https://doi.org/10.1146/annurev-environ-112321-115339>
- Jungherr, A. (2016). Twitter use in election campaigns: A systematic literature review. *Journal of Information Technology & Politics*, 13(1), 72–91. <https://doi.org/10.1080/19331681.2015.1132401>
- Kaakinen, M., Sirola, A., Savolainen, I., & Oksanen, A. (2018). Shared identity and shared information in social media: Development and validation of the identity bubble reinforcement scale. *Media Psychology*, 23(1), 25–51. <https://doi.org/10.1080/15213269.2018.1544910>
- Klar, S. (2013). The influence of competing identity primes on political preferences. *The Journal of Politics*, 75(4), 1108–1124. <https://doi.org/10.1017/S0022381613000698>
- Krackhardt, D., & Stern, R. N. (1988). Informal networks and organizational crises: An experimental simulation. *Social Psychology Quarterly*, 51(2), 123–140. <https://doi.org/10.2307/2786835>
- Krange, O., Kaltenborn, B. P., & Hultman, M. (2019). Cool dudes in Norway: Climate change denial among conservative Norwegian men. *Environmental Sociology*, 5(1), 1–11. <https://doi.org/10.1080/23251042.2018.1488516>
- Krange, O., Kaltenborn, B. P., & Hultman, M. (2021). “Don’t confuse me with facts”—How right wing populism affects trust in agencies advocating anthropogenic climate change as a reality. *Humanities and Social Sciences Communications*, 8, Article 255. <https://doi.org/10.1057/s41599-021-00930-7>

- Kreiss, D., Lawrence, R. G., & McGregor, S. C. (2018). In their own words: Political practitioner accounts of candidates, audiences, affordances, genres, and timing in strategic social media use. *Political Communication*, 35(1), 8–31. <https://doi.org/10.1080/10584609.2017.1334727>
- Kubin, E., & von Sikorski, C. (2021). The role of (social) media in political polarization: A systematic review. *Annals of the International Communication Association*, 45(3), 188–206. <https://doi.org/10.1080/23808985.2021.1976070>
- Kubinec, R., & Owen, J. (2021). When groups fall apart: Identifying transnational polarization during the Arab uprisings. *Political Analysis*, 29(4), 522–540. <https://doi.org/10.1017/pan.2020.46>
- Küppers, A. (2022). ‘Climate-soviets,’ ‘alarmism,’ and ‘eco-dictatorship’: The framing of climate change scepticism by the populist radical right Alternative for Germany. *German Politics*, 33(1), 1–21. <https://doi.org/10.1080/09644008.2022.2056596>
- Lancichinetti, A., & Fortunato, S. (2011). Limits of modularity maximization in community detection. *Physical Review E*, 84, Article 066122. <https://doi.org/10.1103/physreve.84.066122>
- Lau, R. R., Andersen, D. J., Ditonto, T. M., Kleinberg, M. S., & Redlawsk, D. P. (2017). Effect of media environment diversity and advertising tone on information search, selective exposure, and affective polarization. *Political Behavior*, 39, 231–255. <https://doi.org/10.1007/s11109-016-9354-8>
- Lee, F. E. (2015). How party polarization affects governance. *Annual Review of Political Science*, 18, 261–282. <https://doi.org/10.1146/annurev-polisci-072012-113747>
- Lelkes, Y. (2016). Mass polarization: Manifestations and measurements. *Public Opinion Quarterly*, 80(S1), 392–410. <https://doi.org/10.1093/poq/nfw005>
- Lewis, G. B., Palm, R., & Feng, B. (2019). Cross-national variation in determinants of climate change concern. *Environmental Politics*, 28(5), 793–821. <https://doi.org/10.1080/09644016.2018.1512261>
- Liefferink, D., & Wurzel, R. K. W. (2017). Environmental leaders and pioneers: Agents of change? *Journal of European Public Policy*, 24(7), 951–968. <https://doi.org/10.1080/13501763.2016.1161657>
- Lockwood, M. (2018). Right-wing populism and the climate change agenda: Exploring the linkages. *Environmental Politics*, 27(4), 712–732. <https://doi.org/10.1080/09644016.2018.1458411>
- McCoy, J., Rahman, T., & Somer, M. (2018). Polarization and the global crisis of democracy: Common patterns, dynamics, and pernicious consequences for democratic polities. *American Behavioral Scientist*, 62(1), 16–42. <https://doi.org/10.1177/0002764218759576>
- McCright, A. M., & Dunlap, R. E. (2011a). The politicization of climate change and polarization in the American public’s views of global warming, 2001–2010. *The Sociological Quarterly*, 52(2), 155–194. <https://doi.org/10.1111/j.1533-8525.2011.01198.x>
- McCright, A. M., & Dunlap, R. E. (2011b). Cool dudes: The denial of climate change among conservative white males in the United States. *Global Environmental Change*, 21(4), 1163–1172. <https://doi.org/10.1016/j.gloenvcha.2011.06.003>
- McCright, A. M., Dunlap, R. E., & Marquart-Pyatt, S. T. (2016). Political ideology and views about climate change in the European Union. *Environmental Politics*, 25(2), 338–358. <https://doi.org/10.1080/09644016.2015.1090371>
- Metaxas, P., Mustafaraj, E., Wong, K., Zeng, L., O’Keefe, M., & Finn, S. (2015). What do retweets indicate? Results from user survey and meta-review of research. *Proceedings of the International AAAI Conference on Web and Social Media*, 9(1), 658–661. <https://doi.org/10.1609/icwsm.v9i1.14661>
- Michelitch, K., & Utych, S. (2018). Electoral cycle fluctuations in partisanship: Global evidence from eighty-six countries. *The Journal of Politics*, 80(2), 412–427. <https://doi.org/10.1086/694783>
- Mucha, P. J., Richardson, T., Macon, K., Porter, M. A., & Onnela, J.-P. (2010). Community structure

- in time-dependent, multiscale, and multiplex networks. *Science*, 328(5980), 876–878. <https://doi.org/10.1126/science.1184819>
- Munzert, S., & Bauer, P. C. (2013). Political depolarization in German public opinion, 1980–2010. *Political Science Research and Methods*, 1(1), 67–89. <https://doi.org/10.1017/psrm.2013.7>
- Nguyen, C. T. (2020). Echo chambers and epistemic bubbles. *Episteme*, 17(2), 141–161. <https://doi.org/10.1017/epi.2018.32>
- Oakes, P. (1987). The salience of social categories. In J. C. Turner (Ed.), *Rediscovering the social group* (pp. 117–141). Basil Blackwell.
- Orr, L. V., Fowler, A., & Huber, G. A. (2023). Is affective polarization driven by identity, loyalty, or substance? *American Journal of Political Science*, 67(4), 948–962. <https://doi.org/10.1111/ajps.12796>
- Orr, L. V., & Huber, G. A. (2020). The policy basis of measured partisan animosity in the United States. *American Journal of Political Science*, 64(3), 569–586. <https://doi.org/10.1111/ajps.12498>
- Padilla-Castillo, G., & Rodríguez-Hernández, J. (2023). International youth movements for climate change: The #FridaysForFuture case on Twitter. *Sustainability*, 15(1), Article 268. <https://doi.org/10.3390/su15010268>
- Pechar, E., Bernauer, T., & Mayer, F. (2018). Beyond political ideology: The impact of attitudes towards government and corporations on trust in science. *Science Communication*, 40(3), 291–313. <https://doi.org/10.1177/1075547018763970>
- Plescia, C., Ecker, A., & Meyer, T. M. (2022). Do party supporters accept policy compromises in coalition governments? *European Journal of Political Research*, 61(1), 214–229. <https://doi.org/10.1111/1475-6765.12450>
- Poortinga, W., Whitmarsh, L., Steg, L., Böhm, G., & Fisher, S. (2019). Climate change perceptions and their individual-level determinants: A cross-European analysis. *Global Environmental Change*, 55, 25–35. <https://doi.org/10.1016/j.gloenvcha.2019.01.007>
- Przeworski, A. (2011). Divided we stand? Democracy as a method of processing conflicts. *Scandinavian Political Studies*, 34(2), 168–182. <https://doi.org/10.1111/j.1467-9477.2011.00265.x>
- Rapp, C. (2016). Moral opinion polarization and the erosion of trust. *Social Science Research*, 58, 34–45. <https://doi.org/10.1016/j.ssresearch.2016.02.008>
- Reiljan, A. (2020). 'Fear and loathing across party lines' (also) in Europe: Affective polarisation in European party systems. *European Journal of Political Research*, 59(2), 376–396. <https://doi.org/10.1111/1475-6765.12351>
- Rekker, R. (2021). The nature and origins of political polarization over science. *Public Understanding of Science*, 30(4), 352–368. <https://doi.org/10.1177/0963662521989193>
- Renström, E. A., Bäck, H., & Carroll, R. (2021). Intergroup threat and affective polarization in a multi-party system. *Journal of Social and Political Psychology*, 9(2), 553–576. <https://doi.org/10.5964/jspp.7539>
- Riek, B. M., Mania, E. W., & Gaertner, S. L. (2006). Intergroup threat and outgroup attitudes: A meta-analytic review. *Personality and Social Psychology Review*, 10(4), 336–353. https://doi.org/10.1207/s15327957pspr1004_4
- Riera, P., & Madariaga, A. G. (2023). Overlapping polarization: On the contextual determinants of the interplay between ideological and affective polarization. *Electoral Studies*, 84, Article 102628. <https://doi.org/10.1016/j.electstud.2023.102628>
- Rogers, E. M., & Bhowmik, D. K. (1970). Homophily-heterophily: Relational concepts for communication research. *Public Opinion Quarterly*, 34(4), 523–538. <https://doi.org/10.1086/267838>
- Rudat, A., & Buder, J. (2015). Making retweeting social: The influence of content and context information on sharing news in Twitter. *Computers in Human Behavior*, 46, 75–84. <https://doi.org/10.1016/j.chb.2015.01.005>

- Sältzer, M., Stier, S., Bäuerle, J., Blumenberg, M., Mechkova, V., Pemstein, D., Seim, B., & Wilson, S. (2023). *Twitter-Accounts der Kandidierenden zur Bundestagswahl 2021 (GLES)* [Data set]. Gesis. <https://doi.org/10.4232/1.14233>
- Santoro, L. R. (2023). Do political beliefs drive environment selection? *American Politics Research*, 51(1), 108–124. <https://doi.org/10.1177/1532673X221112394>
- Schäfer, M. S., Scheffran, J., & Penniket, L. (2016). Securitization of media reporting on climate change? A cross-national analysis in nine countries. *Security Dialogue*, 47(1), 76–96. <https://doi.org/10.1177/0967010615600915>
- Schürmann, L. (2023). The impact of local protests on political elite communication: Evidence from *Fridays for Future* in Germany. *Journal of Elections, Public Opinion and Parties*, 34(3), 510–530. <https://doi.org/10.1080/17457289.2023.2189729>
- Schwörer, J. (2024). Mainstream parties and global warming: What determines parties' engagement in climate protection? *European Journal of Political Research*, 63(1), 303–325. <https://doi.org/10.1111/1475-6765.12602>
- Settle, J. E., & Carlson, T. N. (2019). Opting out of political discussions. *Political Communication*, 36(3), 476–496. <https://doi.org/10.1080/10584609.2018.1561563>
- Shi, J., Lai, K. K., Hu, P., & Chen, G. (2017). Understanding and predicting individual retweeting behavior: Receiver perspectives. *Applied Soft Computing*, 60, 844–857. <https://doi.org/10.1016/j.asoc.2017.08.044>
- Shmargad, Y., & Klar, S. (2020). Sorting the news: How ranking by popularity polarizes our politics. *Political Communication*, 37(3), 423–446. <https://doi.org/10.1080/10584609.2020.1713267>
- Singh, S. P., & Thornton, J. R. (2019). Elections activate partisanship across countries. *American Political Science Review*, 113(1), 248–253. <https://doi.org/10.1017/S0003055418000722>
- Sood, G., & Iyengar, S. (2016). *Coming to dislike your opponents: The polarizing impact of political campaigns*. Social Science Research Network. <https://doi.org/10.2139/ssrn.2840225>
- Sumner, E. M., Ruge-Jones, L., & Alcorn, D. (2018). A functional approach to the Facebook like button: An exploration of meaning, interpersonal functionality, and potential alternative response buttons. *New Media & Society*, 20(4), 1451–1469. <https://doi.org/10.1177/1461444817697917>
- Svozil, M., Gronow, A., & Ocelík, P. (2025). Climate polarization on Czech social media after Trump's announcement to withdraw the US from the Paris Agreement. *Environmental Communication*, 19(4), 749–765. <https://doi.org/10.1080/17524032.2025.2456230>
- Taddicken, M., Kohout, S., & Hoppe, I. (2019). How aware are other nations of climate change? Analyzing Germans' second-order climate change beliefs about Chinese, US American and German people. *Environmental Communication*, 13(8), 1024–1040. <https://doi.org/10.1080/17524032.2018.1561483>
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–37). Brooks/Cole Publishing.
- Tajfel, H., Billig, M. G., Bundy, R. P., & Flament, C. (1971). Social categorization and intergroup behaviour. *European Journal of Social Psychology*, 1(2), 149–178. <https://doi.org/10.1002/ejsp.2420010202>
- Torcal, M., & Magalhães, P. C. (2022). Ideological extremism, perceived party system polarization, and support for democracy. *European Political Science Review*, 14(2), 188–205. <https://doi.org/10.1017/S1755773922000066>
- Traag, V. A., Waltman, L., & van Eck, N. J. (2019). From Louvain to Leiden: Guaranteeing well-connected communities. *Scientific Reports*, 9, Article 5233. <https://doi.org/10.1038/s41598-019-41695-z>
- Traag, V. A., Zanini, F., Gibson, R., Ben-Kiki, O., Kelly, T., Farahdel, B., & van Kuppevelt, D. (2023). *vtraag/leidenalg: 0.10.0* [Computer software]. Zenodo. <https://doi.org/10.5281/zenodo.8147844>

- Tradowsky, J. S., Philip, S. Y., Kreienkamp, F., Kew, S. F., Lorenz, P., Arrighi, J., Bettmann, T., Caluwaerts, S., Chan, S. C., De Cruz, L., de Vries, H., Demuth, N., Ferrone, A., Fischer, E. M., Fowler, H. J., Goergen, K., Heinrich, D., Henrichs, Y., Kaspar, F., . . . Wanders, N. (2023). Attribution of the heavy rainfall events leading to severe flooding in Western Europe during July 2021. *Climatic Change*, 176, Article 90. <https://doi.org/10.1007/s10584-023-03502-7>
- Tranter, B., & Booth, K. (2015). Scepticism in a changing climate: A cross-national study. *Global Environmental Change*, 33, 154–164. <https://doi.org/10.1016/j.gloenvcha.2015.05.003>
- Unsworth, K. L., & Fielding, K. S. (2014). It's political: How the salience of one's political identity changes climate change beliefs and policy support. *Global Environmental Change*, 27, 131–137. <https://doi.org/10.1016/j.gloenvcha.2014.05.002>
- Uscinski, J. E., Enders, A. M., Seelig, M. I., Klostad, C. A., Funchion, J. R., Everett, C., Wuchty, S., Premaratne, K., & Murthi, M. N. (2021). American politics in two dimensions: Partisan and ideological identities versus anti-establishment orientations. *American Journal of Political Science*, 65(4), 877–895. <https://doi.org/10.1111/ajps.12616>
- Van Bavel, J. J., & Pereira, A. (2018). The partisan brain: An identity-based model of political belief. *Trends in Cognitive Sciences*, 22(3), 213–224. <https://doi.org/10.1016/j.tics.2018.01.004>
- van der Meer, T. W. G., Walter, A., & Aelst, P. V. (2016). The contingency of voter learning: How election debates influenced voters' ability and accuracy to position parties in the 2010 Dutch election campaign. *Political Communication*, 33(1), 136–157. <https://doi.org/10.1080/10584609.2015.1016639>
- van Erkel, P. F. A., & Turkenburg, E. (2022). Delving into the divide: How ideological differences fuel out-party hostility in a multi-party context. *European Political Science Review*, 14(3), 386–402. <https://doi.org/10.1017/S1755773922000121>
- Vegetti, F., & Širinić, D. (2019). Left–right categorization and perceptions of party ideologies. *Political Behavior*, 41, 257–280. <https://doi.org/10.1007/s11109-018-9451-y>
- Vesely, S., Masson, T., Chokrai, P., Becker, A. M., Fritsche, I., Klöckner, C. A., Tiberio, L., Carrus, G., & Panno, A. (2021). Climate change action as a project of identity: Eight meta-analyses. *Global Environmental Change*, 70, Article 102322. <https://doi.org/10.1016/j.gloenvcha.2021.102322>
- Vu, H. T., Do, H. V., Seo, H., & Liu, Y. (2020). Who leads the conversation on climate change?: A study of a global network of NGOs on Twitter. *Environmental Communication*, 14(4), 450–464. <https://doi.org/10.1080/17524032.2019.1687099>
- Wagner, M. (2021). Affective polarization in multiparty systems. *Electoral Studies*, 69, Article 102199. <https://doi.org/10.1016/j.electstud.2020.102199>
- Wagner, M. (2024). Affective polarization in Europe. *European Political Science Review*, 16(3), 378–392. <https://doi.org/10.1017/S1755773923000383>
- Wagner, M., & Praprotnik, K. (2024). Affective polarization and coalition signals. *Political Science Research and Methods*, 12(2), 336–353. <https://doi.org/10.1017/psrm.2023.33>
- Williams, H. T. P., McMurray, J. R., Kurz, T., & Hugo Lambert, F. (2015). Network analysis reveals open forums and echo chambers in social media discussions of climate change. *Global Environmental Change*, 32, 126–138. <https://doi.org/10.1016/j.gloenvcha.2015.03.006>

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ARTICLE

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Bootleggers, Baptists, and Policymakers: Domestic Discourse Coalitions in EU–Mercosur Negotiations

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Abstract

This article examines the dynamics of coalition formation in the context of the EU–Mercosur negotiations, utilizing the “Bootleggers and Baptists” analogy to understand how diverse actors—such as import-competing sectors, civil society organizations, and policymakers—engage in issue-linkage in public debates surrounding preferential trade agreement negotiations. The framework explores three types of coalition formation: opportunistic framing, strategic alliance, and mediated convergence, each representing varying degrees of coordination between moral and economic actors. The findings suggest that active coordination between such groups is rare, yet de facto coalitions are quite important. The empirical analysis uses quantitative text analysis of online debates in France and Ireland to show that coalitions are formed through opportunistic framing, rather than strategic alliance or mediated convergence. The findings are corroborated through a congruence analysis of discourse networks demonstrating that Bootleggers and Baptists represent distinct communities, each primarily engaging with their own narratives and borrowing from the other only when it serves a strategic purpose. These findings suggest that policy outcomes are shaped more by the overlap of win-sets and the de facto coalitions necessary for ratification, rather than deliberate issue-linkage by policymakers or the formation of alliances across groups. The results have important implications for understanding how environmental, labour, and human rights concerns become intertwined with trade policy. We demonstrate that, even when there is a confluence of interests between actors, discourse coalitions tend to grow across actor types as a result of discursive opportunism rather than strategic alliances.

Keywords

coalition formation; European Union; package treaties; trade

1. Introduction

Political economic explanations of the opposition to preferential trade agreements assign pride of place to import-competing producers harmed by liberalization. When states exchange market access, international competition reduces domestic prices, putting the livelihoods of relatively less efficient producers and their employees under threat. Approaches focusing on politicization and contestation of preferential trade agreements, meanwhile, generally attribute pride of place to the independent agency of so-called civil society mobilization (Dür et al., 2023). Indeed, the greater the politicization of a Preferential Trade Agreement (PTA) negotiation, the less the concerns of businesses are at the forefront of political attention from both citizens and policymakers (Dür et al., 2019). In this article, we investigate how these two groups come together in contestation networks, taking issue with one-sided explanations that present politicization as a direct result of stakeholder action. Of course, (preferential) trade liberalization creates economic winners and losers. And of course, other social goals, such as environmental protection, defence of labour rights, rule of law, good governance, and development are the priority of other organized groups. The scientific challenge, however, is not to explain why those who feel harmed engage in contestation, but why those who are not harmed by market access changes take on the arguments of actors who are. The theoretical issue at stake is to explain under which circumstances actors engage in coalition formation to further their respective political goals.

To investigate this dynamic, we focus on discourse coalition formation in the context of the proposed EU–Mercosur Association Agreement, which saw contestation from agricultural producers concerned about being priced out of the EU market by cheap imports, on one hand, and civil society organizations stressing environmental justifications, on the other. Agricultural producers are known for mobilizing in defence of their particularistic interests at the expense of other diffuse groups in society (Olson, 1965). However, individual sectors, like agriculture (or the steel industry; or the pharmaceutical sector), lack the numerical and electoral clout to automatically prevail in majoritarian democratic politics. The real puzzle is therefore to explain how the agricultural sector finds itself in coalitions *with* other groups or policymakers, given that the selective interests of the agricultural sector are supported at the expense of all domestic consumers and voters (Nguyen et al., 2021).

In Europe, import-competing agricultural producers had contested the EU–Mercosur agreement from early in the negotiation stage. In the lead-up to the “political agreement” of June 29, 2019, between the EU and its Mercosur partners, a second contestation narrative emerged, and the proposed agreement was contested on the basis of Brazil’s poor environmental record. At this point, opposition fit the description of a so-called “Bootleggers and Baptists” coalition, a *de facto* union of unlikely bedfellows between business and civil society who support the same position because it helps them achieve divergent but complementary objectives. The original authors of the Bootleggers and Baptists metaphor highlight the crucial role of policymakers in building bridges between constituencies which do not overlap. But policymakers acting as the brokers of such coalition formation is just one possible answer to how such *de facto* coalitions come about. We do not want to jump to the conclusion that policymakers are the magical *deus ex machina* actor that links different issues to make package deals pleasing to multiple constituencies. Rather, we approach patterns of coalition formation as a phenomenon to be explained, proposing a generic theory which accounts for *when* one group resonates with the demands of another.

We argue that contestation leads to further contestation because actors take on the problems of others *inasmuch as available frames of contestation are useful in resolving their own problems*. The empirical implication is that constituencies with moral and material interests could lobby for policies together, separately, with the help of entrepreneurial policymakers, or not at all. The underlying argument places a very clear limitation upon when they will *not* support each other: Even when objectives are complementary, they are unlikely to lobby with others unless this helps to rectify a political problem. In short, our aim in this article is to outline a theory that explains what these political problems look like, and to describe situations in which coalitions do not form, as well as those in which they do.

We expect that Bootleggers, Baptists, and policymakers are all likely to adopt arguments of the others inasmuch as this serves a *political* purpose, either by providing closure through the broad legitimization of specific interests or control by facilitating the accumulation of enforcement resources (Bartolini, 2018). Conversely, we expect them to ignore the arguments of others if such *de facto* coalition formation does not serve one of these political purposes. We expect Bootleggers to appropriate the concerns of Baptists when they need to show that their demands are legitimate. We expect Baptists to take on the concerns of Bootleggers when they are sufficiently popular to provide an opportunity for organizational maintenance. Finally, we expect policymakers to only take on the concerns of either Baptists or Bootleggers inasmuch as they align with the revealed preferences of their constituents.

We test these expectations by analysing the language use patterns of civil society organizations, agricultural producers, members of parliament, and individuals in response to the EU–Mercosur negotiations in online debates. We do so at the actor level in France and Ireland, as these member states emerged as prominent critics in the EU–Mercosur debate. Emmanuel Macron was among the leaders to raise concerns over Brazilian president Jair Bolsonaro’s intention to adhere to Brazil’s obligations under the Paris Climate Agreement in December 2018 (which all parties to the EU–Mercosur agreement commit to uphold), and the Irish Dáil was the first European parliament to pass a motion declaring its intention to *not* ratify the proposed EU–Mercosur agreement. The two are therefore most likely cases for analysing patterns of coalition formation because opposition was so pronounced.

The article proceeds as follows. In the next section, we present the theory of resonance—or how actors can take on the concerns of others strategically—within the literature on coalition formation. We explain how it adds to the literature on coalition formation by establishing hypothetical conditions in which a range of otherwise non-deterministic outcomes might occur. In Section 3, we apply these expectations directly to the EU–Mercosur debate to elaborate a set of empirical implications. In Section 4, we present the Twitter dataset which we use to test the theory and explain our methodological choices. The findings are presented in Section 5, and in Section 6 we draw conclusions and discuss the implications of our findings for the study of political actors or environmental networks more broadly.

2. Coalition Formation Across Policy Fields and Across Borders

2.1. Bootleggers and Baptists

Contestation against the proposed EU–Mercosur Association Agreement consisted of environmentalists arguing that the agreement was not aligned with the EU’s climate change mitigation policies as well as

longstanding protectionist resistance from agricultural producers. This fits the description of a so-called “Bootleggers and Baptists” coalition, a phrase coined by Bruce Yandle based on two unlikely bedfellows finding common ground in support of a policy that required bars and liquor stores to close on Sunday (Yandle, 1983). Yandle describes an unspecified state, in which “Bootleggers” support prohibition laws because they eliminate competition once a week, and “Baptists” support them because they want the state to enforce teetotalism. The coalition therefore combines the public demands of one group motivated by values, Baptists, with another constituency which receives selective benefits, Bootleggers. Baptists need to maintain their moral high ground, while Bootleggers need to continue to reap the rewards of anti-competitive regulation. Policymakers are the entrepreneurs in this allegorical tale, which suggests that they will bridge the gap by crafting policies with both constituencies in mind (Simmons et al., 2011; Smith & Yandle, 2014; Yandle, 1989).

Bootleggers and Baptists can be used to describe a situation in which a coalition including actors motivated by complementary interests and values find common political ground in their pursuit of instrumental policy change (Darst & Dawson, 2008; Vogel, 1995; Winslett, 2021). In those EU member states where public resistance to the proposed EU–Mercosur Association Agreement did take form, agricultural producers and civil society organisations would seemingly correspond to such a coalition. Not only did agricultural producers advocate restrictions on import competition, but climate change mitigation efforts were also raised as the basis for these restrictions by a number of actors. As early as February 2016, the largest agricultural labour union in France had claimed that Brazilian beef was less sustainable than European beef (Copa & Cogeca, 2016), and in 2018, the UK-based civil society organization Fern published a report which detailed the toll Brazilian ranchers were taking on deforestation (Fern, 2018). When forest fires in the Amazon were raging in the summer of 2019, many actors presented forest fires as being caused by land clearing for cattle grazing and feed production (e.g., Greenpeace, 2019). When concern over imports is mixed with concern over the environment, European agricultural producers benefit from the moral support of environmentalists for their anti-competitive policy position, while environmentalists ground their concerns in a tangible European constituency harmed by foreign activities which they oppose.

The language of Bootleggers and Baptists has an intuitive appeal and simplicity which helps to explain how coalitions succeed. We, on our part, begin with a cast of characters which is familiar to political economic analysis. Factor-, sector-, and firm-centred approaches have long emphasized how the policy needs of different economic actors provide incentives for lobbying, while scholars of politicization have more recently focused on how civil society groups have been instrumental in raising salience and opposition to trade agreements (De Ville & Siles-Brügge, 2016; Eckhardt, 2018; Eckhardt & Poletti, 2016; Hiscox, 2002; Rogowski, 1989; Van Ommeren, 2023; Young, 2017). The Bootleggers and Baptists logic collapses all the complexity of this society-centred model of political economy down to a world in which actors outside government have one of two kinds of interests: moral or material. With a generous reading of the intentions of Baptists, we could also claim that they are promoting a general interest (despite the will of people who want to drink on Sunday), whereas Bootleggers promote their own specific interests. In this way, the Bootleggers and Baptists logic also touches upon the Olsonian dynamic of concentrated versus diffuse interests, though the logic does not develop those interest types into causally relevant distinctions (Olson, 1965).

The dichotomous division of non-state actors into Bootleggers and Baptists also corresponds with the division within the interest group literature which sets actors who serve the public interest apart from those

with their own material interests, with different sets of behavioural expectations and framing strategies associated with each group (Dür & Mateo, 2016; Winslett, 2021). Whether we think of them as “insiders and outsiders” (Dür & Mateo, 2016), the holders of different types of resources (Berkhout, 2013; Beyers & Kerremans, 2007; McCarthy & Zald, 1977; Salisbury, 1969), or providers of different types of incentives (Rothenberg, 1988), Bootleggers and Baptists aligns with how interest group scholars conceive of the causally relevant differences among different types of groups. Finally, the Bootleggers and Baptists analogy also presents office-seeking policymakers in line with political theories: rational, strategic, and self-interested (Dür & De Bièvre, 2007).

While the parsimony and familiarity of Bootleggers and Baptists lay a strong foundation for theorizing about coalition formation, we still see two avenues for improvement. First, there is remaining ambiguity on the side of the dependent variable: It is unclear what range of coalition formation outcomes are possible among these diverse actors. What happens if policymakers have already committed to a different course of action because they are also accountable to yet other societal actors? What if policymakers are already captured by either Bootleggers or Baptists—do they still feign interest in the other? Or what if the reputational consequences of cooperation among morally and materially motivated actors are not so severe as they are in the allegorical tale of mobsters (Bootleggers) and priests (Baptists)? Even though there are other logical possibilities, the theory only presents one version of coalition formation, where policymakers bridge a great divide.

Second, to make the theory testable, it is necessary to specify which causal conditions correspond with different coalition formation outcomes. If the differences among actors alone lead to coalition formation, this would be structurally deterministic. If the outcome relies solely on the ingenuity of policymakers, this only leaves us only with a clever versus stupid policymaker explanation. In short, a specification of the balance between structure and agency is necessary in order to turn Bootleggers and Baptists from a descriptive metaphorical tale into an explanatory political science theory.

2.2. *How Actors Coalesce*

On the variation in outcomes, the Bootleggers and Baptists story presented by Smith and Yandle suggests that two groups of actors with common interests are joined together by policymakers (Smith & Yandle, 2014). They are the “policy brokers” envisioned by the advocacy coalition framework of Sabatier (1988). They bridge separate channels of policy demands by proposing solutions which find common ground without treading on the core beliefs of either group (Cairney, 2020; Jenkins-Smith & Sabatier, 1994). This resolution invokes particularly adept policymakers, and uncooperative interest groups. But policymakers may also be unable to bridge the interests of two groups and may feel compelled to demonstrate stability in their policy choices or valorise their past decisions (Grube, 2016; Meguid, 2005). They may also be limited in their capacity to change course by the restructuring of veto players within government after an election, or after an institutional change like the entering into force of a treaty.

In the event that policymakers are locked in by their existing positions, two more potential outcomes exist. First, other actors who are well led and equipped to learn and adapt may produce an “external shock” by transforming an external event into a policy failure to which a new, different response is necessary, creating a focusing event within the policy subsystem (Cairney, 2013, 2016; Sabatier & Jenkins-Smith, 1993; Weible, 2006). In other words, there is a possibility that a Bootleggers and Baptists “coalition” could actually be a

unilateral push by one of these well-equipped groups in response to an external event that they attempt to produce, i.e., make relevant to a policy debate. In such a case, a group would attempt to turn the event into a “shock” by means of creative framing and possibly even employing the frames of unrelated organizations to do so. For example, a greenwashing campaign by a business incorporates the language of environmentalist critics without their consent (Delmas & Burbano, 2011). On the other hand, it is possible that both Bootleggers and Baptists use the same external event to advocate the same policy change, using the same framing strategy, and that they do so irrespective of past positions of policymakers. In that case, policymakers are not brokers inasmuch as targets of a focused collaborative effort. So, there are actually three possible coalition formation outcomes between groups with mutually supporting objectives: (a) *opportunistic framing* by either Baptists or Bootleggers; (b) a *strategic alliance* between Bootleggers and Baptists; and (c) *mediated convergence* enabled by policymakers.

There is also a fourth logical possibility that there is no capacity or necessity on the part of the interest groups, and no willingness on the part of politicians, and therefore no resonance, even though businesses are harmed by a policy decision and civil society organizations are aligned with their policy objectives. In this fourth possible outcome, there is a *de facto coalition* between Bootleggers and Baptists but neither adapts their framing strategy to reflect the expressed concerns of others. This last possibility is akin to Olson’s concept of “latent” groups which could emerge, but do not.

2.3. Success Conditions

Next, we specify *why* these field-spanning coalitions are likely to occur, or not. Our argument rests on the assumption that political dilemmas associated with each type of actor affect the likelihood that they will participate in political struggles. This builds on the principle that not just stakeholders, but also “bystanders” play a critical role in determining the outcome of political struggles, and that they are influenced by the narratives which frame political conflict (Schattschneider, 1960). Whenever contestation occurs, those who are unaffected, or at least do not share the stated concerns of mobilized constituencies, face a choice about how or whether to become involved. Their options include actively participating in contestation, free-riding on the efforts of others, confronting mobilized constituencies, or avoiding them altogether (Dür et al., 2023). The theory which we advance is that Bootleggers, Baptists, and policymakers can all be expected to become actively involved, or “resonate” with mobilized constituencies, inasmuch as this resolves a problem they face.

2.3.1. Bootleggers

Market actors advocating specific interests, such as agricultural producers, have an interest in allowing market access to their own suppliers while limiting access to competitors and the suppliers of competitors’ inputs. Their control over markets is therefore dependent on their capacity to legitimate levels of exclusion which work to their advantage. If others are contesting or promoting market access on the basis of general interests, market actors can resonate to show that their own positions are legitimate, even if they are self-interested. Bootleggers should be expected to resonate *inasmuch as the support of policymakers is uncertain*, i.e., inasmuch as they need legitimacy.

2.3.2. Baptists

Meanwhile, interest organizations advocating for societal interests, like civil society organizations, operate in a highly competitive environment in which they cannot, by definition, exclude others from participating. They have no authority to do so, and it would work contrary to their stated objective of mobilizing support for public goods. When individuals such as agricultural producers contest a policy, interest groups can resonate to show that their positions are also representative of this mobilized constituency, appealing to those who hold resources necessary for sustaining their own campaigns. Existing research suggests that even the expectation that such a constituency exists and could be mobilized is enough to motivate bandwagoning by interest groups (Dür & Mateo, 2014; Halpin, 2011; Hamilton, 2023). We can therefore assume that the presence of an actual mobilized constituency should lead interest organizations to resonate as a means of seeking the resources they need to pursue political objectives. Baptists should be expected to resonate *insomuch as the mobilized constituency provides an opportunity for obtaining resources through representation*.

2.3.3. Policymakers

Finally, policymakers share characteristics with both Bootleggers and Baptists. On one hand, they are a lot like interest groups who need to appeal to mobilized constituencies in order to obtain votes, funding, expertise, and other resources which allow their organizations to survive. They should therefore be just as attentive to the voices of mobilized constituencies and attempt to echo these voices in their own policy positions. On the other hand, policymakers are a lot like Bootleggers in the sense that they have an interest in dominating the market by excluding competition. Insomuch as narratives are popular among the electorate, they represent a source of potential competition which rival candidates can seize to obtain power in political institutions. It is therefore in the interest of officeholders to incorporate the criticisms of mobilized constituencies into their own discourse in order to prevent rival policymakers from taking their offices. Policymakers should be expected to resonate *insomuch as adopting narratives provides an opportunity for support*, either to take advantage themselves, or prevent others from doing so.

3. Changing Discourse Coalitions

As a result of the strategic behaviour of actors, we expect that the composition of *discourse coalitions* should change over time as actors resonate with stakeholder contestation. By discourse coalitions, we mean de facto coalitions of actors *who use the same narrative* to describe a policy or problem (Hajer, 1995; Leifeld, 2020). This changing composition should reflect Bootleggers resonating insomuch as they need legitimacy, Baptists resonating insomuch as there is an opportunity to represent mobilized constituencies, and policymakers resonating insomuch as an opportunity for support becomes available. In this section, we explore the empirical implications of these generic expectations in relation to the proposed EU–Mercosur Association Agreement in two member states, France and Ireland. Both France and Ireland are home to major beef exporters which opposed the agreement on economic grounds, and both are also home to strong environmental movements with organizations capable of raising concerns about the impact of the agreement on fires in the Amazon basin. The two states are also very similar in terms of median income, attitudes towards the environment, and agricultural employment levels, suggesting that neither is more inclined to accept narratives based on economic or moral incentives alone. While the debate in France eventually garnered more public attention after a high-profile spat between Macron and Bolsonaro, public

debate centred around the same themes and actors from both France and Ireland were readily quoted and commented upon in the others' national media.

3.1. Representations of Market Actors: The “Farmers” Narrative

Chronologically, the first narrative which was used to contest the EU–Mercosur Association Agreement was what we call the “Farmers” narrative—with agricultural producers opposing the agreement on the basis of the threat it posed to their sector since negotiations began in 2001. When agricultural producers contest policies on their own, there is a disjuncture between the responsibilities of government to a broader population and the selective benefits which are claimed by these producers, their employees, their subcontractors, and their associations. Even if their concerns are legitimate, they are representative of the interests of a very limited segment of the population. Whereas civil society organizations are able to provide political information about a broad constituency which might threaten the government's capacity to maintain office or produce legislation, agricultural producers and their associations only provide political information about the preferences of a constituency with limited electoral impact. This is true in most EU member states where only 1–2% of the population is employed in the agricultural sector.

But beyond their own capacity to control access to specific government offices, agricultural producers are also an essential element of an agrarian master frame which celebrates notions of pastoral virtue, market competition, national history, and the rights of domestic producers (Mooney & Hunt, 1996). In this master frame, agricultural producers are not presented as the suppliers of chemical inputs, biotechnology patents, and industrial machinery, nor as large land-owning investors who profit from food production in the EU. Neither are they depicted as categories of labourers who are denied rights afforded to workers more generally, either through their categorization as seasonal labour in northern countries, or through informal systems of acceptance and lack of enforcement which allow undocumented migrant labour and modern slavery to persist in the south. Instead, agricultural producers are presented as “Farmers.” “Farmers” are Europeans who symbolically represent hard work and tradition as well as modernity—being symbolized by the industrial machinery they use to block access to city centres or spray industrial inputs like milk and fertilizer on symbols of power. This legitimating master frame can be used by other political actors to signal a commitment to these aspects of an imagined community, regardless of whether agricultural producers are really pastoral, competitive, or the prime beneficiaries of their own labour. Eurobarometer polls show that over 90% of Europeans believe that agriculture and rural areas are “Very” or “Fairly important for our future” even though nearly as many have never heard of or don't know the details of the Common Agricultural Policy, and around 60% believe preferential trade agreements are positive for EU agriculture and consumers (European Commission, 2018). We would argue that these paradoxes of public opinion underline the symbolic quality of the “Farmers” narrative, demonstrating that many Europeans, if asked to form an opinion, will identify with the pastoral virtue of European farmers without understanding the details of agricultural policy.

For societal interest actors, the representative image of local “Farmers” harmed by faraway practices renders demands concrete and local. On one hand, it helps them to connect abstract or normative arguments directly to the intended beneficiaries of a democratic process. When civil society organizations wish for a government to help protect an endangered forest beyond the geographic scope of its jurisdiction, protecting downtrodden “Farmers” from unfair competition becomes a very specific and tangible way of working towards that broad policy goal while localizing the harm done by environmental degradation. On the other hand, and this is in

line with the hypothesized causal mechanism, by using the “Farmers” narrative, civil society organizations can appeal directly to agricultural producers. By formulating their claims in a manner that is consistent with the values of a potential support constituency that is already mobilized, they can appeal to an additional group of potential supporters that they know will at least partially agree with their newly formulated position.

Likewise, policymakers and political parties wish to show potential supporters that they are serving their interests to gather electoral and material support. They cannot easily accomplish this task by supporting policies which defend the interests of wealthy landowners and raise food prices. Instead, they can show their devotion to “Farmers” whose symbolic qualities are shared by the electorate and thus navigate a field full of veto players and other institutional obstacles such as majority voting requirements or public consultations. In other words, the “Farmers” narrative can serve a dual purpose for policymakers, allowing them to make decisions which seem representative of their electorate while buying in the potential veto players which they rely upon to pass legislation.

3.2. Representations of Societal Interests: The “Fires” Narrative

While “Farmers” is one discursive tool which agricultural producers’ associations use to legitimate their particularistic demands, societal interests claimed by civil society organizations can help to legitimate these self-interested positions. Since the re-launch of the EU–Mercosur agreement, many “civil society” actors have advanced what we call the “Fires” narrative. Concerns over the environmental impact of Mercosur agriculture had already been advanced by labour unions in 2016 (Copa & Cogeca, 2016), but the issue came to a head in the summer of 2019 when the size and intensity of forest fires in the Amazon basin surged (Both Ends, 2019). The image of the Amazon on fire was mobilized as a symbol of how the agreement would exacerbate climate change, with campaigners arguing that direct human intervention and policy failure were key causes of the catastrophically strong fire season. This argument came in a context where climate change was on top of the public agenda, ranking among the “two most important issues facing the EU at the moment” across Europe, including in France and Ireland (European Commission, 2019).

Our argument is that *whether* market actors like agricultural producers avail themselves of this opportunity to broaden the appeal of their particularistic arguments depends crucially on whether they need legitimacy. If policymakers are already receptive to the opposition of Bootleggers, the frames of civil society groups add little more than rhetorical flourish. However, if there is uncertainty as to whether policymakers will adhere to their demands, market actors are likely to seize the opportunity to embed their discontent within broader societal interests. As a result of the European Commission’s push to reach an agreement and eventually pass it through the EU’s deliberative bodies, including national parliaments, French and Irish agricultural producers should then be expected to resonate with civil society.

As the position of civil society organizations gains traction in public debates, policymakers should also be compelled to resonate. The more citizens have revealed their alignment, the more they present an opportunity for policymakers who rely on public support like elected leaders, as well as policymakers who need to bypass many veto players in government. Even when policymakers have other priorities or would prefer to ignore politicized issues like the Amazon fires, the most expedient course of action is to pay lip service to critics. For opposition policymakers, salient contestation campaigns present an opportunity to align with a group which has revealed their preferences, and they too should be expected to focus on the most salient issues.

4. Data and Methods

The preceding discussion has empirical implications regarding how political actors in the EU and Mercosur countries are likely to resonate with one another in response to contestation of the proposed EU–Mercosur Association Agreement. We have advanced four hypotheses regarding the extent to which actors resonate by adopting the narratives of others:

H1: As the salience of the Fires narrative increases, Bootleggers resonate with Baptists.

H2: As the salience of the Farmers narrative increases, Baptists resonate with Bootleggers.

H3: As the salience of the Fires narrative increases, policymakers resonate with Baptists.

H4: As the salience of the Farmers narrative increases, policymakers resonate with Bootleggers.

Each of these hypotheses reflects empirical implications at the level of individuals or collective actors, reflecting a more general expectation that they adapt the language they use insofar as it serves a parallel political purpose, unrelated to the position they are advocating.

We test these hypotheses using a dataset composed of all Twitter interactions containing the phrase “EU–Mercosur” or “UE–Mercosur” in the period of 2014–2021. This includes all tweets, retweets, quotes, and reply tweets containing the name of the agreement in the two-year period before the resumption of negotiations and the two-year period after the conclusion of negotiations in 2019. We will refer to these collectively as tweets. Timestamps on tweets make it easy to position narratives in relation to one another as well as major events like the conclusion of negotiations or rejection of the agreement. Users are also forced to abide by a strict character limit, meaning that the things which are observed, tweets, are all very similar: They are a maximum of 280 characters long and use a common syntax for identifying ideas that are relevant to or taken directly from other users. The brevity of these expressions makes it so that word placement and text structure matter very little. Twitter is therefore very suited to comparing the positions of different actor types because it reduces them to a homogeneous, time-stamped format which can be processed semi-automatically.

Beyond providing a relatively uniform sample of text from each type of actor, it matters whether agricultural producers, civil society organizations, and policymakers on Twitter are typical of those engaged in the EU–Mercosur debate. This concerns both who is represented on Twitter and how they behave. While the platform is known to over-represent white, educated, and socio-economically well-off men, this bias is not unique to online settings but reflects broader patterns of political representation offline. Moreover, Twitter activity tends to be very concentrated: A quarter of the users made up for 97% of the activity on the site (McClain et al., 2021). This means a few highly active accounts—some of which are official organizational accounts—drive most of the discussion. Our hypotheses are formulated at the level of actor types (Bootleggers, Baptists, and policymakers), based on their incentives to solve political problems, rather than assuming a fully representative sample of all members of these categories. While the actors we observe on Twitter do not speak for all farmers, environmentalists, or policymakers, they do provide empirical examples of how members of these groups articulate their interests in the context of the EU–Mercosur negotiations.

We acknowledge that these Twitter users are not statistically representative of their broader constituencies, nor do they always speak in an official capacity. However, many are verified users or institutional accounts, and their discourse is informative for understanding how narratives circulate and resonate within and across actor types.

4.1. The Dataset

The dataset was prepared by scraping approximately 130,000 tweets containing “EU–Mercosur” or “UE–Mercosur” in 2021, before academic access to Twitter (now re-branded as X) was curtailed. These hyphenated referents were used to maximize relevance across multiple language spheres while maintaining content validity. Expanding the scope to include a broader range of linguistic variants, such as “Mercosur” AND (“agreement” OR “abkommen” OR “accord” OR “acuerdo,” etc.), could have captured more geographically diverse engagement, but would have risked including off-topic or ambiguous content. In the transition from Twitter to X, not only was academic access restricted, but many users from the political mainstream closed their accounts and fled the platform, so it is no longer possible to update the dataset.

The subset of the corpus used for this analysis consists of all tweets originating from France and Ireland in the years 2014–2021. These are considered most likely cases for politicization and resonance because French president Macron was at the centre of a mediatized row over the agreement in the summer of 2019, and because the Daíl became the first European parliament to pass a motion against the agreement around the same time. To locate French and Irish tweets, the user-entered location for each actor making a tweet was converted into geographical coordinates using the “tidygeocoder” R package and then reverse geo-coded to determine which state each tweet originated in. The remaining 6,400 unresolved user-entered locations were coded by hand. To identify actor types, users who had sent tweets from France and Ireland were compiled into lists of users which were hand-coded as “Bootleggers,” “Baptists,” policymakers, and individuals. Other categories of actor types included media, thinktanks, and bots; however, they are not considered in the current analysis. The hand-coding of actors was performed by looking up actors on Twitter and using information contained in the “about me” sections of their profile to determine if they were affiliated with a civil society organization, political party, or agricultural producers’ association. All 1,544 Irish users and 2,255 of the 17,430 French users were coded in this way. The French users were selected based on their eigenvector centrality on a mention network constructed for an earlier draft of this article. This ensures that the actors most engaged in the online debate were included in the analysis and optimizes coding time. The actor type was then appended as metadata for each tweet. After these operations, the dataset which we analysed consisted of 544 tweets by policymakers, 371 by Bootleggers, 769 by Baptists, and 2,303 by individuals not visibly aligned with a party, agricultural producers’ association, or interest group.

4.2. Narrative Scoring and Congruence

To identify narrative use, we used a multilingual dictionary-based approach with the “quanteda” R package. Dictionaries for the “Fires” and “Farmers” narratives were compiled in English, French, Spanish, and Portuguese. Each tweet was scored for the presence of these terms. For each actor group, we calculated the proportion of tweets per month that included each narrative. This proportion serves as our measure of narrative salience, capturing how widely a narrative was adopted at any given time.

To measure narrative alignment between actor groups, we calculated pairwise congruence as follows:

$$\text{Congruence}_{ij} = 1 - |x_i - x_j| / \max(x_i, x_j)$$

Where x_i and x_j are the monthly narrative salience scores (proportions) for actor groups i and j . This yields a value from 0 (complete divergence) to 1 (perfect alignment) and is undefined if neither actor group used the narrative in a given month.

4.3. Statistical Models

We test our hypotheses using two sets of linear regressions. First, we regress monthly congruence between actor types on the narrative salience among individuals. This tests whether non-aligned users act as catalysts of discursive resonance. Second, we regress changes in narrative salience by each actor group on changes in narrative use by individuals. This tests whether narrative shifts among Bootleggers, Baptists, and policymakers can be predicted by contemporaneous shifts in public discourse. All models use monthly data and are estimated separately for the “Fires” and “Farmers” narratives. We also split the analysis into two periods: January–August 2019 (when the ratification outcome was uncertain) and September 2019–December 2021 (when ratification stalled), to reflect shifting strategic incentives.

To account for the interdependent structure of temporal network data, we conducted regression diagnostics including the Durbin-Watson test for autocorrelation and the Breusch-Pagan test for heteroscedasticity. These tests revealed some assumption violations with respect to autocorrelation in split-period models. We therefore re-estimated all models using standard errors clustered by month and included controls for group-level tweet activity (tweets/month) to account for heterogeneity in visibility. These adjustments did not alter the direction or significance of core findings and, in some cases, improved model fit.

We did not include lagged variables, as our hypotheses focus on narrative resonance at a given time, not delayed effects. Our expectation is that actors adopt narratives rapidly while they are politically useful. This assumption is consistent with historical institutionalist theories emphasizing punctuated equilibrium, interest group literature on attention cascades, and social movements literature on “moments of madness,” (Baumgartner & Jones, 1993; Halpin, 2011; Tarrow, 1993). Moreover, since our data are binned monthly, short-term fluctuations are likely smoothed over, reducing the impact of temporal noise.

5. Findings

The results of the regression analysis examining whether individuals’ use of narratives predicts congruence among actor types are presented in Table A1 (see Supplementary File) and visualized in Figure 1. The figure shows coefficient estimates (represented by fire and tractor icons), 95% confidence intervals, and levels of statistical significance. The models use the proportion of tweets from unaffiliated individuals in each month that include the “Fires” or “Farmers” narrative as the independent variable and test whether this salience predicts similarity in narrative use among actor groups. Results for the “Fires” narrative show strong evidence of resonance. As unaffiliated individuals increasingly referenced fires in the Amazon, Bootleggers and Baptists became significantly more aligned in their narrative use ($\beta = 0.528$, $p = 0.004$), as did Baptists and policymakers ($\beta = 0.602$, $p < 0.001$) and Bootleggers and policymakers ($\beta = 0.683$, $p < 0.001$). These models show relatively high R^2 values (0.44, 0.58, and 0.73, respectively), indicating that a

substantial share of variance in actor congruence is explained by the salience of the “Fires” narrative among individuals. Regression diagnostics (reported in full in Table A5 in the Supplementary File) reveal no strong violations of OLS assumptions: Durbin-Watson statistics range from 1.66 to 2.54, with no significant evidence of autocorrelation. Among the three models testing the effects of the “Fires” narrative, two show no signs of heteroscedasticity, while one—Bootlegger–Policymaker—shows significant heteroscedasticity (Breusch-Pagan $p = 0.024$) despite no indication of autocorrelation (Durbin-Watson = 1.75, $p = 0.18$). This may reflect the episodic nature of politicized policy debates on Twitter, which tend to take place in concentrated episodes.

By contrast, results for the “Farmers” narrative are more mixed. Only Baptist–Policymaker congruence was significantly predicted by narrative salience among individuals ($\beta = 0.544$, $p = 0.001$), with a moderate R^2 of 0.45. The effects for Bootlegger–Policymaker ($\beta = 0.235$, $p = 0.114$) and Baptist–Bootlegger ($\beta = 0.163$, $p = 0.334$) were not statistically significant, and the explained variance was comparatively low ($R^2 = 0.26$ and 0.20, respectively). Diagnostics again suggest no major issues, with all Durbin-Watson values near 2 and non-significant Breusch-Pagan results. For the models testing the “Farmers” narrative, Durbin-Watson statistics range from 1.91 to 2.54; while one model (Bootlegger–Policymaker) shows a relatively high statistic (Durbin-Watson = 2.54), none of the associated p -values are significant (all $p > 0.33$), and all Breusch-Pagan tests indicate homoscedasticity ($p > 0.18$), suggesting no major violations of OLS assumptions.

Taken together, these findings support the idea that individual narrative salience—particularly around environmental harm—coincides with greater alignment among different actor groups. The effect of the “Fires” narrative is broader and more consistent than that of the “Farmers” narrative, suggesting that civil society framing may play a stronger role in generating resonance across actor types.

To better understand which actor groups are driving the narrative congruence identified above, we tested whether narrative salience among unaffiliated individuals predicts changes in narrative use by Bootleggers,

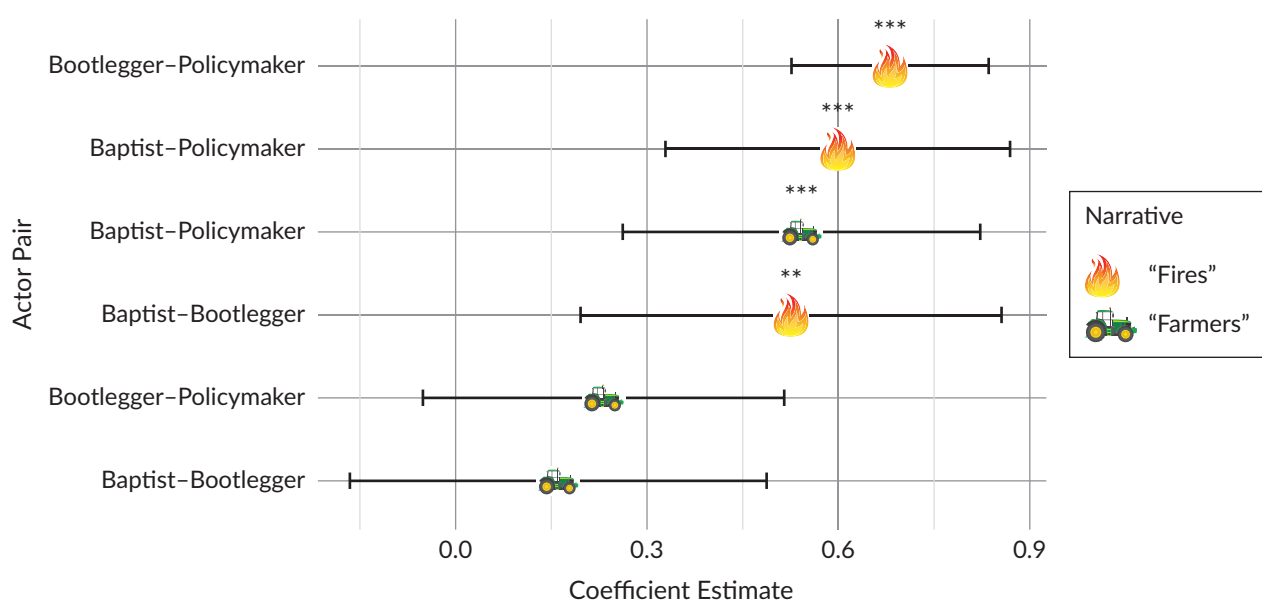


Figure 1. Effect of narrative salience on actor congruence: coefficient estimates, with 95% confidence intervals. Note: Significance levels: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Baptists, and policymakers. The results are presented in Table A2 in the Supplementary File and visualized in Figure 2, which displays coefficient estimates (represented by fire and tractor icons), confidence intervals, and significance levels for each model.

Overall, two actor-narrative relationships emerge as statistically significant. First, as unaffiliated individuals increased their use of the “Fires” narrative, policymakers became significantly more likely to adopt the same narrative ($\beta = 0.638$, $p = 0.017$). This model has a modest explanatory value ($R^2 = 0.26$), suggesting a meaningful but partial relationship between public salience and policymaker adoption. Second, increased use of the “Farmers” narrative by individuals is associated with a significant increase in use by Baptists ($\beta = 0.596$, $p = 0.005$), with a higher R^2 value of 0.34, indicating that public cues may be especially resonant among civil society actors. Other coefficients were not statistically significant. Neither Bootleggers nor Baptists show a significant relationship with individuals’ use of the “Fires” narrative ($\beta = 0.073$, $p = 0.895$; $\beta = 0.112$, $p = 0.368$, respectively), and Bootleggers and policymakers also did not significantly adopt the “Farmers” narrative ($\beta = 0.091$, $p = 0.469$; $\beta = 0.447$, $p = 0.146$, respectively). These results support the idea that narrative resonance is actor-specific, being driven particularly by policymakers’ and Baptists’ responses to changes in public salience.

Regression diagnostics for the models in Table A2 are presented in Table A6 in the Supplementary File. Durbin-Watson statistics range from 1.90 to 2.84, and none of the associated p -values indicate significant autocorrelation. One model—Bootlegger responses to the “Fires” narrative—shows a relatively high Breusch-Pagan test statistic ($p = 0.099$), suggesting a potential concern for heteroscedasticity, though it does not cross the conventional threshold for significance. All other models show no evidence of heteroscedasticity ($p > 0.28$). These results suggest that the models in Table A2 in the Supplementary File do not suffer from violations of OLS assumptions.

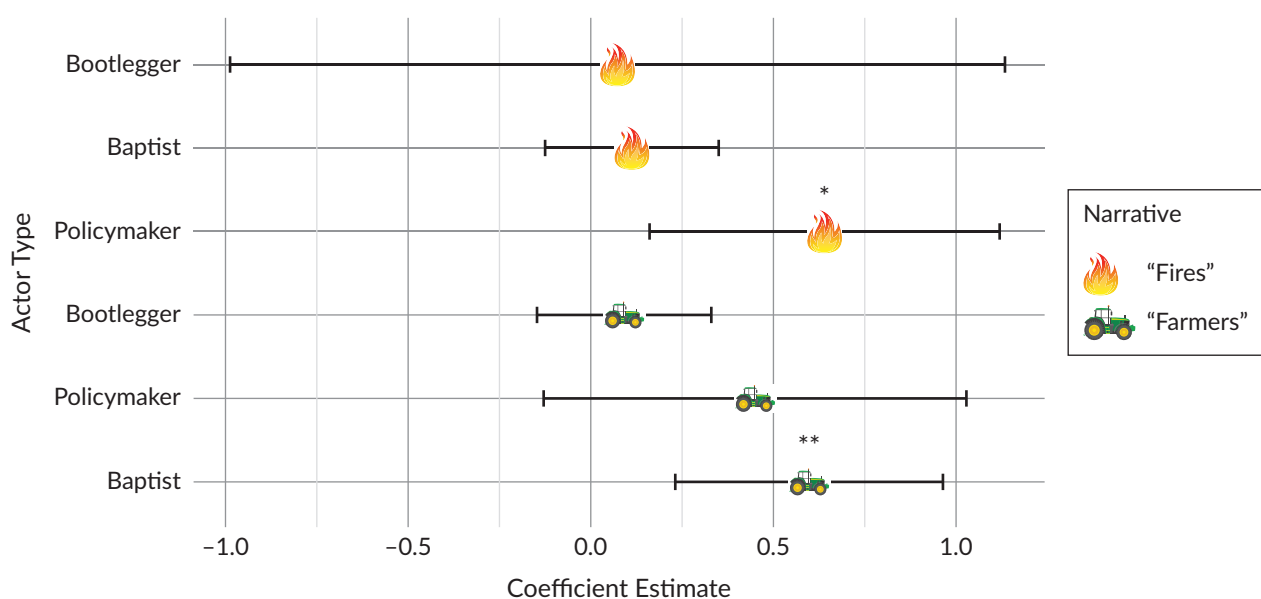


Figure 2. Effect of narrative salience on actor resonance: coefficient estimates, with 95% confidence intervals. Note: Significance levels: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Notably absent in Figure 2 are the Bootleggers, who do not appear to adopt the “Fires” narrative as it becomes more salient. Since Bootleggers are expected to resonate when they lack legitimacy, we tested whether their behaviour shifts under conditions of heightened uncertainty. To do so, we divided the data into two periods: “Agreement Pending” (January–August 2019), when ratification of the EU–Mercosur agreement was still possible, and “Ratification Stalled” (September 2019–December 2021), after key actors in France and Ireland had publicly rejected the deal. The average proportion of tweets using each narrative is visualized in Figure 3, which shows clearly divergent trends beginning shortly before ratification stalled in August 2019. During the “Agreement Pending” period, and especially as the salience of the “Fires” narrative grew, agricultural producers had greater need to align themselves with civil society narratives to legitimize their opposition. For policymakers, the “Fires” narrative became a greater opportunity as the relative salience of each narrative shifted. For Baptists, meanwhile, the need to localize their demands in reference to the needs of “Farmers” evaporates as “Fires” become the salient focal point. The results of this analysis are presented in Table A3 in the Supplementary File.

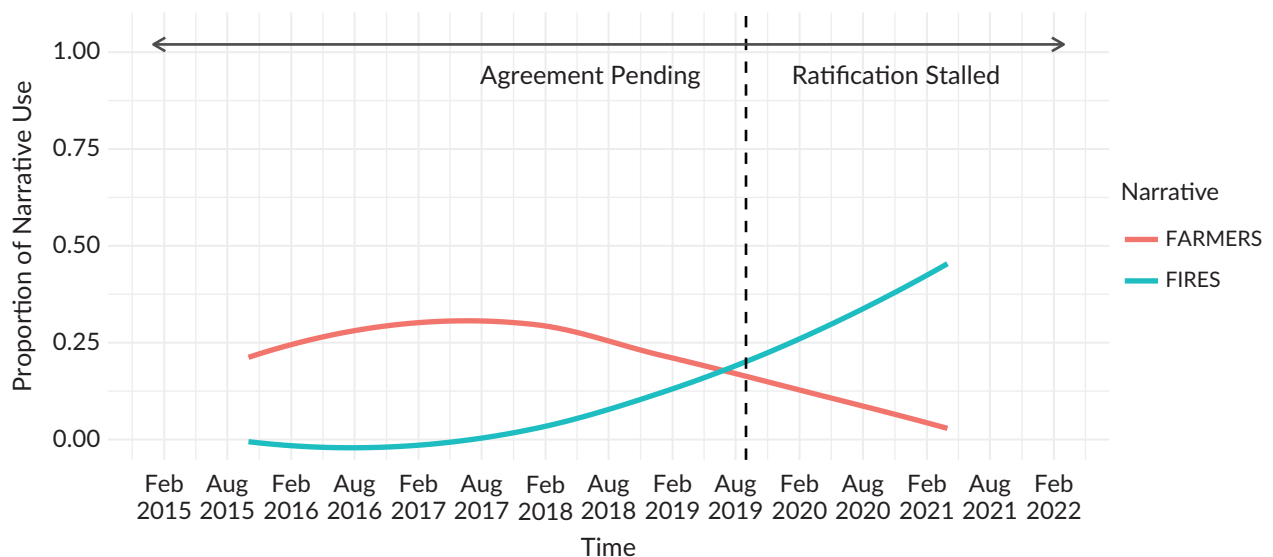


Figure 3. Proportion of narrative use over time (smoothed).

The correlation between Bootleggers’ and individuals’ use of the “Fires” narrative was highly significant during the pending period ($\beta = 1.160$, $p < 0.001$), but not after the ratification process had stalled ($\beta = 9.656$, $p = 0.143$). The extremely large coefficient and high standard error in the second period suggest that narrative use by Bootleggers became far more erratic once their position was no longer threatened. This is consistent with the idea that Bootleggers strategically resonate with civil society actors only when seeking legitimacy.

In contrast, Baptists show a consistent relationship with the “Farmers” narrative across both periods. During the pending phase, the correlation was significant ($\beta = 0.575$, $p = 0.014$), and it remained significant, even slightly increasing, after ratification stalled ($\beta = 0.670$, $p = 0.008$). This suggests that civil society actors continued to engage with agricultural narratives, perhaps to broaden their coalitional appeal. Policymakers, meanwhile, appear to adapt their framing depending on which narratives are more publicly salient. In the pending period, they were significantly associated with the “Farmers” narrative ($\beta = 1.034$, $p = 0.006$), whereas in the stalled period, they shifted toward the “Fires” narrative ($\beta = 0.522$, $p = 0.050$). This transition

implies a shift in alignment from concentrated producer interests to broader civil society concerns as the political landscape changed.

Diagnostics for the actor response models (included in Table A7 in the Supplementary File) reveal significant autocorrelation in two cases—Baptist responses to the “Fires” narrative during the “Agreement Pending” period (Durbin-Watson = 1.375, $p < 0.001$) and policymaker responses to the “Fires” narrative during the “Ratification Stalled” period (Durbin-Watson = 1.097, $p = 0.037$). A third model—policymaker responses to the “Farmers” narrative during the early period—also shows borderline evidence of autocorrelation (Durbin-Watson = 1.346, $p = 0.058$). This autocorrelation indicates that monthly changes in narrative use are not fully independent, which aligns with existing research on the dynamics of attention and influence in policy debates. Indeed, prior work emphasizes how actors engage in communicative feedback loops to generate “attention cascades” (Halpin, 2011), suggesting that some degree of serial correlation is an inherent feature of resonance dynamics. While we cannot eliminate this effect entirely, we mitigate its impact by clustering standard errors by month. Since none of the models exhibits significant heteroscedasticity, clustering by activity was not necessary.

Together, these results underscore the conditional nature of resonance: Bootleggers align with Baptists only when they need legitimacy, while Baptists consistently resonate with Bootleggers when doing so offers an opportunity to represent a known support constituency, and policymakers adaptively shift their alignment depending on which narratives dominate public discourse.

Based on this analysis, we find a strong corroboration of H1, that Bootleggers align their positions with civil society organizations when they need legitimacy. When assessed over the entire period, the correlation between individuals’ use of the Fires narrative and resonance by Bootleggers is not significant, and the confidence intervals appear to extend from -0.76 to 0.95 , showing wide variability and effectively demonstrating that they appear to be nearly random. But if we consider the behaviour of Bootleggers only during the time period in which the Fires narrative was available and when agricultural producers had a greater need to legitimate their self-interested position, the relationship is stronger than any other in our analysis. This is especially indicative of opportunistic framing given that congruence between Bootleggers and Baptists was weakest in the long run, and that the same correlation is absent in all other periods.

We also find a strong corroboration of H2, that civil society organizations align their positions with agricultural producers when a group of potential supporters reveals itself. This finding is robust across the entire period as well as in the two shorter periods in which the agreement was pending, and when ratification was stalled. We also find support for H3 and H4, that policymakers align their narratives with both agricultural producers and civil society organizations when their ideas are shown to be popular among potential supporters. While policymakers were more likely to adopt the narratives of civil society organisations across the entire period, sub-setting the data revealed that they were more likely to do so in the period when the public had also started to link the agreement to the civil society narrative. Otherwise, they were inclined to align with agricultural producers. Given that agricultural producers withdrew from public debate once ratification was stalled, we cannot draw definitive conclusions about how policymakers choose between competing narratives. But the general trend which we observed was a transition by policymakers away from the Farmers narrative to the Fires narrative, effectively moving from more concentrated to diffuse interests to justify their positions.

Discourse coalition formation thus appears to be the result of opportunistic framing by some actors, yet not others: Bootleggers do not readily take on the positions of Baptists; Baptists are willing to take on the narratives of Bootleggers; and policymakers appear quite willing to take on the general interest arguments of civil society organizations but were also willing to adopt narratives defending the specific interests of agricultural producers when they were more salient. Hence, Bootleggers do not seem to make consistent use of the moral cover provided by Baptists. This finding is thus in line with scholarly findings that economic actors tend to withdraw from public debates as they become more salient (Dür et al., 2015, 2019). We add the rather surprising finding that this is also true even when the public supports them.

6. Discussion and Conclusions

In this article, we have set out to transform the Bootleggers and Baptists metaphor into a theory of domestic coalition formation so as to shed light on the opportunities and obstacles to package treaty-making at the international level. We have conceived of policymakers as policy-brokers, providing solutions which please multiple constituencies, and of business and environmental groups as fabricating exogenous shocks to the policy subsystem through the mobilization of their resources, individually or collectively. The emergence of Bootlegger–Baptist coalitions could come about as the result of opportunistic framing, deliberate strategic alliance building, or convergence mediated by policymakers. A fourth theoretical possibility would be a *de facto* coalition which applies to instances when no actor blends the positions of two groups into a common one.

Our theory of resonance consists of a set of causal arguments about why different groups might become engaged. To that end, we specified conditions under which different actors are likely to advance each other's arguments, namely when taking on the argument of another actor resolves a problem within their own field of interaction, as it provides an opportunity to obtain support from actors who have revealed their alignment with a narrative. We derived concrete, empirically testable hypotheses about how this could be demonstrated in the EU–Mercosur case.

First and foremost, we found that Baptist–Bootlegger coalitions do indeed not emerge as the result of *strategic alliance* formation in the form of genuine collective action between business and environmental groups. Very much in line with the metaphorical story of Bootleggers and Baptists, which do not wish to be associated with each other in public, business and environmental groups do not actively coordinate their efforts. Instead, they merely resonate with each other by engaging in *opportunistic framing*. We found this behaviour for both agricultural producers and civil society environmental organizations. During the period when the two trading blocs were closest to forging an agreement and until the ratification process was stalled, agricultural producers adopted the increasingly salient narrative of civil society organizations in order to justify their opposition. Yet they let go of this justification as quickly as they latched on to it—once the ratification process was stalled, they no longer varnished their particularistic stance with rhetorical devices borrowed from civil society. Meanwhile, throughout the entire period under analysis, civil society organizations took on the arguments of agricultural producers as they became increasingly salient among potential supporters, claiming that their concerns about the agreement were also related to beef and farming. Likewise, policymakers, while attendant to the particularistic concerns of agricultural producers from the outset, eventually shifted to the broader positions of civil society organizations, moving from one position to the other in line with the change in salience of each narrative.

It is thus remarkable that it was the Bootleggers who appear to have shunned the Baptists despite the opportunity to give a moral justification to self-interested arguments. On the one hand, this finding could be interpreted as reflecting that they are simply not in ideological alignment with civil society organizations and do not subscribe to their framing of the nature of the problems at hand. On the other hand, it could be interpreted as further evidence of their opportunism, whereby Bootleggers can more efficiently fade into the background as civil society organizations take over their battle and policymakers fight for the same ends, but with general interest arguments. In any case, our findings strongly show that Baptist–bootlegger coalitions are anything but a coordinated effort, as the narratives of these groups are least likely to converge, and Bootleggers withdraw at the point when an alliance seems most supportive of their cause. An important conceptual distinction thus emerges between genuine intensively coordinated collective action on the one hand and the emergence of strategic and opportunistic discourse coalitions on the other hand, both of which have a demonstrable effect on what policymakers can work with to deliver workable public policies.

Finally, we found little evidence of *mediated convergence*, wherein policymakers would be the ones that bridge the gap between Bootleggers and Baptists. While the congruence of policymakers' narratives with Bootleggers and Baptists was significantly correlated with increases in both the Fires and Farmers narratives, the analysis of how this related to changes in behaviour showed that this was not a result of policymakers opportunistically bridging the gap between the two groups. Policymakers, rather, were selective about how they chose to align their narratives, taking on the positions of agricultural producers first before shifting to the more generally interested civil society organizations' narrative while (at least publicly) abandoning the positions of agricultural producers. Contrary to the logic of mediated convergence, policymakers did not act as intermediaries linking the concerns of agricultural producers to those of environmentalists. Rather, over the course of our analysis, both agricultural producers and policymakers increasingly echoed similar concerns—not due to direct alignment with one another, but because each independently incorporated the arguments of environmentalists as those narratives gained salience. This underscores a key insight of our theory: that what appears to be alignment between disparate actors is often the result of strategic narrative adoption rather than genuine coalition-building. In the politics of package treaties, resonance may matter more than coordination.

Our findings also carry implications for the study of environmental networks and political economy beyond Western contexts. The prevalence of opportunistic framing in driving the formation of Baptist and Bootlegger coalitions in the EU–Mercosur case shows that concerns originating in the Global South, such as deforestation and Indigenous rights in the Amazon, do not on their own reshape Northern political alignments. Instead, these concerns become effective only when they parallel the strategic interests of Northern actors—such as protecting domestic agricultural sectors, appealing to the revealed preferences of concerned citizens, or pre-empting potential veto players within government. This dynamic aligns with critiques of transnational advocacy networks (Keck & Sikkink, 1998) that suggest Northern actors often instrumentalize Southern issues rather than serving as benevolent conduits for Southern demands (Bob, 2005; Choudry, 2012). These findings complement research on ecological unequal exchange and environmental justice (Hornborg, 2009; Martinez-Alier, 2002), highlighting how global environmental governance can reinforce existing hierarchies of power and value.

Rather than flattening global asymmetries, environmental networks may reproduce them, subordinating the politics of the Global South to the strategic imperatives of actors in the Global North. In this respect, our

findings contribute to recent scholarship on environmental governance networks, which emphasize both their structural properties and the discursive processes through which they are constituted and maintained (Fischer et al., 2022; Ingram et al., 2014, 2019). We also build on discourse-analytics perspectives that underscore how environmental problems are constructed, contested, and strategically mobilized within broader struggles over meaning and power (Feindt & Oels, 2005). Our study responds directly to calls for a more explicit conceptualization of agency and strategic action in discourse analysis by using discourse networks to trace how actors actively construct coalitions through opportunistic framing strategies (Leipold et al., 2019). By foregrounding these dynamics in a concrete case of EU trade politics, we contribute to broader debates on the politics of environmental networks, the political economy of environmental governance, and global justice (Dauvergne, 2014; Okereke, 2010; Roberts & Parks, 2007), showing how the strategic mobilization of actors in the Global North may serve to entrench rather than contest their dominance in sustainability discourse.

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Conflict of Interests

The authors declare no conflict of interests.

Data Availability

All twitter data and the R script used to code and analyze the tweets have been uploaded to the Harvard dataverse: Hamilton, S. M., & De Bièvre, D. (2025). *Replication data for Bootleggers, Baptists and policymakers: Domestic discourse coalitions in EU-Mercosur Negotiations* (Version V1) [Data set]. Harvard Dataverse. <https://doi.org/10.7910/DVN/SEANTX>

Supplementary Material

Supplementary material for this article is available online in the format provided by the authors (unedited).

References

- Bartolini, S. (2018). *The political*. Rowman & Littlefield.
- Baumgartner, F. R., & Jones, B. D. (1993). *Agendas and instability in American politics*. University of Chicago Press.
- Berkhout, J. (2013). Why interest organizations do what they do: Assessing the explanatory potential of “exchange” approaches. *Interest Groups & Advocacy*, 2(2), 227–250. <https://doi.org/10.1057/iga.2013.6>
- Beyers, J., & Kerremans, B. (2007). Critical resource dependencies and the Europeanization of domestic interest groups. *Journal of European Public Policy*, 14(3), 460–481. <https://doi.org/10.1080/13501760701243822>
- Bob, C. (2005). *The marketing of rebellion: Insurgents, media, and international activism*. Cambridge University Press.
- Both Ends. (2019). 340+ organizations call on the EU to immediately halt trade negotiations with Brazil [Open letter]. https://www.bothends.org/uploaded_files/inlineitem/1190618_Joint-letter-Brazil-EU-Mercosur_allsignatori.pdf
- Cairney, P. (2013, October 30). Policy concepts in 1000 words: The advocacy coalition framework. *Paul Cairney: Politics and Public Policy*. <https://paulcairney.wordpress.com/2013/10/30/policy-concepts-in-1000-words-the-advocacy-coalition-framework>
- Cairney, P. (2016). Paul A. Sabatier, “An advocacy coalition framework of policy change and the role of policy-oriented learning therein.” In M. Lodge, E. C. Page, & S. J. Balla (Eds.), *The Oxford handbook of classics in public policy and administration* (pp. 484–497). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199646135.013.24>
- Cairney, P. (2020). *Understanding public policy: Theories and issues* (2nd ed.). Palgrave Macmillan.
- Choudry, A., & Dip Kapoor (Eds.). (2012). *NGOization: Complicity, contradictions and prospects*. Zed Books. <https://doi.org/10.5040/9781350221512>
- Copa, & Cogeca. (2016, April 8). Copa & Cogeca Urge EU Farm Ministers to Oppose Free Trade Talks with Latin American Trade Bloc MERCOSUR Warning Catastrophic Impact [Press release]. <https://copa-cogeca.eu/Flexpage/DownloadFile/?id=13376035>
- Darst, R., & Dawson, J. I. (2008). “Baptists and bootleggers, once removed”: The politics of radioactive waste internalization in the European Union. *Global Environmental Politics*, 8(2), 17–38. <https://doi.org/10.1162/glep.2008.8.2.17>
- Dauvergne, P. (2014). *Shadows of consumption: Consequences for the global environment*. MIT Press.
- De Ville, F., & Siles-Brügge, G. (2016). *TTIP: The truth about the Transatlantic Trade and Investment Partnership*. Polity Press.
- Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. *California Management Review*, 54(1), 64–87. <https://doi.org/10.1525/cmr.2011.54.1.64>
- Dür, A., Bernhagen, P., & Marshall, D. (2015). Interest group success in the European Union: When (and why) does business lose? *Comparative Political Studies*, 48(8), 951–983. <https://doi.org/10.1177/0010414014565890>
- Dür, A., & De Bièvre, D. (2007). Inclusion without influence? NGOs in European trade policy. *Journal of Public Policy*, 27(1), 79–101. <https://doi.org/10.1017/S0143814X0700061X>
- Dür, A., Hamilton, S., & De Bièvre, D. (2023). Reacting to the politicization of trade policy. *Journal of European Public Policy*, 31(1), 1–19. <https://doi.org/10.1080/13501763.2023.2258157>
- Dür, A., Marshall, D., & Bernhagen, P. (2019). *The political influence of business in the European Union*. University of Michigan Press. <https://doi.org/10.3998/mpub.10033101>

- Dür, A., & Mateo, G. (2014). Public opinion and interest group influence: How citizen groups derailed the Anti-Counterfeiting Trade Agreement. *Journal of European Public Policy*, 21(8), 1199–1217. <https://doi.org/10.1080/13501763.2014.900893>
- Dür, A., & Mateo, G. (2016). *Insiders versus outsiders: Interest group politics in multilevel Europe* (1st ed.). Oxford University Press.
- Eckhardt, J. (2018). Corporations and global trade policy-making in the twenty-first century. In A. Nölke & C. May (Eds.), *Handbook of the international political economy of the corporation* (pp. 400–415). Edward Elgar Publishing. <https://doi.org/10.4337/9781785362538.00034>
- Eckhardt, J., & Poletti, A. (2016). The politics of global value chains: Import-dependent firms and EU–Asia trade agreements. *Journal of European Public Policy*, 23(10), 1543–1562. <https://doi.org/10.1080/13501763.2015.1085073>
- European Commission. (2018). *Special Eurobarometer 473: Europeans, agriculture and the CAP* [Data set]. European Data. http://data.europa.eu/euodp/en/data/dataset/S2161_88_4_473_ENG
- European Commission. (2019). *Eurobarometer 91.5*.
- Feindt, P. H., & Oels, A. (2005). Does discourse matter? Discourse analysis in environmental policy making. *Journal of Environmental Policy & Planning*, 7(3), 161–173. <https://doi.org/10.1080/15239080500339638>
- Fern. (2018). *Agricultural commodity consumption in the EU—Policy brief*. <https://www.fern.org/fileadmin/uploads/fern/Documents/Fern%20beef%20briefing%20paper.pdf>
- Fischer, M., Ingold, K., Duygan, M., Manny, L., & Pakizer, K. (2022). Actor networks in urban water governance. In T. Bolognesi, F. Silva Pinto, & M. Farrelly (Eds.), *Routledge handbook of urban water governance* (pp. 243–256). Routledge. <https://doi.org/10.4324/9781003057574-21>
- Greenpeace. (2019, June 28). *EU–Mercosur deal trades in environmental destruction* [Press release]. <https://www.greenpeace.org/eu-unit/issues/democracy-europe/2122/eu-mercotur-environmental-destruction>
- Grube, D. C. (2016). Sticky words? Towards a theory of rhetorical path dependency. *Australian Journal of Political Science*, 51(3), 530–545. <https://doi.org/10.1080/10361146.2016.1171824>
- Hajer, M. A. (1995). *The politics of environmental discourse: Ecological modernization and the policy process*. Oxford University Press.
- Halpin, D. (2011). Explaining policy bandwagons: Organized interest mobilization and cascades of attention. *Governance*, 24(2), 205–230. <https://doi.org/10.1111/j.1468-0491.2011.01522.x>
- Hamilton, S. M. (2023). Dropping off the bandwagon: A puzzle for the resource mobilisation perspective on civil society contestation networks. *Journal of European Public Policy*, 31(1), 269–294. <https://doi.org/10.1080/13501763.2023.2232825>
- Hiscox, M. J. (2002). Commerce, coalitions, and factor mobility: Evidence from congressional votes on trade legislation. *American Political Science Review*, 96(3), 593–608. <https://doi.org/10.1017/S0003055402000357>
- Hornborg, A. (2009). Zero-sum world: Challenges in conceptualizing environmental load displacement and ecologically unequal exchange in the world-system. *International Journal of Comparative Sociology*, 50(3/4), 237–262. <https://doi.org/10.1177/0020715209105141>
- Ingram, M., Ingram, H., & Lejano, R. (2014). What's the story? Creating and sustaining environmental networks. *Environmental Politics*, 23(6), 984–1002. <https://doi.org/10.1080/09644016.2014.919717>
- Ingram, M., Ingram, H., & Lejano, R. (2019). Environmental action in the Anthropocene: The power of narrative-networks. *Journal of Environmental Policy & Planning*, 21(5), 492–503. <https://doi.org/10.1080/1523908X.2015.1113513>
- Jenkins-Smith, H. C., & Sabatier, P. A. (1994). Evaluating the advocacy coalition framework. *Journal of Public Policy*, 14(2), 175–203.

- Keck, M. E., & Sikkink, K. (1998). *Activists beyond borders: Advocacy networks in international politics*. Cornell University Press.
- Leifeld, P. (2020). Policy debates and discourse network analysis: A research agenda. *Politics and Governance*, 8(2), 180–183. <https://doi.org/10.17645/pag.v8i2.3249>
- Leipold, S., Feindt, P. H., Winkel, G., & Keller, R. (2019). Discourse analysis of environmental policy revisited: Traditions, trends, perspectives. *Journal of Environmental Policy & Planning*, 21(5), 445–463. <https://doi.org/10.1080/1523908X.2019.1660462>
- Martinez-Alier, J. (2002). *The environmentalism of the poor: A study of ecological conflicts and valuation*. Edward Elgar Publishing. <https://doi.org/10.4337/9781843765486>
- McCarthy, J. D., & Zald, M. N. (1977). Resource mobilization and social movements: A partial theory. *American Journal of Sociology*, 82(6), 1212–1241.
- McClain, C., Widjaya, R., Rivero, G., & Smith, A. (2021). *The behaviors and attitudes of U.S. adults on Twitter*. Pew Research Center.
- Meguid, B. M. (2005). Competition between unequals: The role of mainstream party strategy in niche party success. *American Political Science Review*, 99(3), 347–359. <https://doi.org/10.1017/S0003055405051701>
- Mooney, P. H., & Hunt, S. A. (1996). A repertoire of interpretations: Master frames and ideological continuity in U.S. agrarian mobilization. *The Sociological Quarterly*, 37(1), 177–197. <https://doi.org/10.1111/j.1533-8525.1996.tb02336.x>
- Nguyen, Q., Spilker, G., & Bernauer, T. (2021). The (still) mysterious case of agricultural protectionism. *International Interactions*, 47(3), 391–416. <https://doi.org/10.1080/03050629.2021.1898957>
- Okereke, C. (2010). *Global justice and neoliberal environmental governance: Ethics, sustainable development and international co-operation*. Routledge.
- Olson, M. (1965). *The logic of collective action: Public goods and the theory of groups*. Harvard University Press.
- Roberts, J. T., & Parks, B. (2007). *A climate of injustice: Global inequality, North–South politics, and climate policy*. MIT Press.
- Rogowski, R. (1989). *Commerce and coalitions: How trade affects domestic political alignments*. Princeton University Press.
- Rothenberg, L. S. (1988). Organizational maintenance and the retention decision in groups. *American Political Science Review*, 82(4), 1129–1152. <https://doi.org/10.2307/1961753>
- Sabatier, P. A. (1988). An advocacy coalition framework of policy change and the role of policy-oriented learning therein. *Policy Sciences*, 21(2), 129–168. <https://doi.org/10.1007/BF00136406>
- Sabatier, P. A., & Jenkins-Smith, H. C. (Eds.). (1993). *Policy change and learning: An advocacy coalition approach*. Westview Press.
- Salisbury, R. H. (1969). An exchange theory of interest groups. *Midwest Journal of Political Science*, 13(1), 1–32. <https://doi.org/10.2307/2110212>
- Schattschneider, E. E. (1960). *The semisovereign people: A realist's view of democracy in America*. Dryden Press.
- Simmons, R. T., Yonk, R. M., & Thomas, D. W. (2011). Bootleggers, Baptists and political entrepreneurs: Key players in the rational game and morality play of regulatory politics. *The Independent Review*, 15(3), 367–381.
- Smith, A. C., & Yandle, B. (2014). *Bootleggers and Baptists: How economics forces and moral persuasion interact to shape regulatory politics*. Cato Institute.
- Tarrow, S. (1993). Cycles of collective action: Between moments of madness and the repertoire of contention. *Social Science History*, 17(2), 281–307. <https://doi.org/10.2307/1171283>

- Van Ommeren, E. (2023). *Pro trade, against competition: Explaining firms' support for selective trade protection* [Unpublished doctoral dissertation]. University of Antwerp.
- Vogel, D. (1995). *Trading up: Consumer and environmental regulation in a global economy*. Harvard University Press.
- Weible, C. M. (2006). An advocacy coalition framework approach to stakeholder analysis: Understanding the political context of California marine protected area policy. *Journal of Public Administration Research and Theory*, 17(1), 95–117. <https://doi.org/10.1093/jopart/muj015>
- Winslett, G. (2021). *Competitiveness and death: Trade and politics in cars, beef, and drugs*. University of Michigan Press.
- Yandle, B. (1983, May/June). Bootleggers and Baptists: The education of a regulatory economist. *Regulation*, 12–16.
- Yandle, B. (1989). Bootleggers and Baptists in the market for regulation. In J. F. Shogren (Ed.), *The political economy of government regulation* (pp. 29–53). Springer. https://doi.org/10.1007/978-1-4613-0871-3_3
- Young, A. R. (2017). *The new politics of trade: Lessons from TTIP*. Agenda Publishing.

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Up and Down With... Polarisation? Intrinsic and Instrumental Polarisation Dynamics in US Climate Policy Debates

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Abstract

Political elites in the US are ideologically divided over climate change. We identify two perspectives: The *intrinsic* view on ideological climate polarisation views climate beliefs as entrenched parts of an actor's identity and posits that ideological positions have factually shifted towards ever more extreme positions over time. The *instrumental* view, in contrast, emphasises that polarisation entrepreneurs mobilise their constituency to participate in the climate policy debate by amplifying ideological differences over climate-related focusing events when they arise, leading to fluctuations in visible polarisation, rather than a steady trend. This study examines which of the two perspectives holds in US Congressional and subnational media debates by analysing time trends of polarisation and phases of structural stability. We distinguish between endogenous events, which can be attributed to the political process, and exogenous focusing events, such as extreme events or those related to the international climate regime, and investigate which type of event tends to be associated with changes in polarisation. Applying two novel time series measures for discourse networks—structural polarisation and the detection of phases of structural stability—to the climate debate during the 112th to 114th Congress (2013–2017) and subnational print media in four swing states, we find that exogenous events are largely irrelevant while endogenous political dynamics increase the polarisation of the debate considerably. We find ups and downs of polarisation corresponding to distinct structural phases in which polarisation is linked to participation. This temporal fluctuation of polarisation around endogenous political events is consistent with the instrumental perspective.

Keywords

climate; discourse networks; environment; issue attention cycle; polarisation

1. Introduction

The US and other democracies have been affected by political polarisation. Several dimensions of polarisation have been highlighted in the literature, including affective (Iyengar et al., 2019), ideological (Fiorina & Abrams, 2008), and structural polarisation (Salloum et al., 2022) among elites (e.g., Fisher, Leifeld, & Iwaki, 2013), the population (e.g., Dunlap et al., 2016), or in the media (e.g., Chinn et al., 2020). Here, we explore ideological polarisation among elites around US climate politics between 2013 and 2017. We introduce a new distinction between *intrinsic* and *instrumental* ideological elite polarisation and argue that focusing events serve different roles in intrinsic and instrumental polarisation. We contribute to the literature on elite climate polarisation by showing that polarisation in the climate discourse network is associated with endogenous political events and resulting issue attention.

1.1. The Intrinsic Perspective on Climate Polarisation

The *intrinsic perspective* on ideological polarisation relates to the deep-seated values and convictions political actors or citizens hold. It posits that a fundamental change has been taking place in their ideological orientations. Polarisation around the issue of climate change is the product of this change. People working in this perspective find climate polarisation to be positional, lasting, and worsening—in short, intrinsic. In this view, ideological positions have factually shifted towards more extreme positions over time, and this change is real in the sense that it concerns attitudes, rather than just strategic signalling. Climate beliefs become entrenched and form part of one's identity. They become a “positional” rather than a “valence” issue (Fraune & Knodt, 2018) and may be additionally cemented by affective polarisation (Iyengar et al., 2019). This trend develops in parallel with polarisation on other issues like immigration or foreign affairs and as part of a general trend towards political polarisation in the US and other Western democracies.

Ample evidence seems to support this intrinsic perspective. For example, Chinn et al. (2020) reported increasingly polarised partisan climate language around climate change in the US Congress over almost two decades in tandem with growing politicisation, underlining the argument that ideological polarisation has been increasing over time. Smith et al. (2024) documented an almost continuously increasing and symmetric wedge between Democratic and Republican voters in the US on emotions, scientific interpretation, and spending priorities related to climate change over almost 50 years. They also measured a steep increase in the share of voters who viewed climate change as a top priority among Democrats between 2012 and 2020, whereas the share remained low and constant among Republican voters. Guber (2017) reviewed the literature on US climate polarisation and saw overwhelming evidence for entrenched and lasting partisan division over climate change, both among elites and voters. Sarathchandra and Haltinner (2021, p. 225) concluded that “about 25% of skeptics are skeptical, at least in part, because they believe that climate change is a hoax or a conspiracy,” which points to the intrinsic nature of climate beliefs.

1.2. The Instrumental Perspective on Climate Polarisation

In contrast, the *instrumental perspective* emphasises that political actors have the capacity to play up differences in climate beliefs strategically when it suits them (Jasny et al., 2018). Guber et al. (2021, p. 553) argue that “partisans might actively sow discord and cultivate groups of like-minded supporters in order to best achieve their ends.” Sunstein (2009) calls them “polarisation entrepreneurs.” For political actors and the

media, events related to climate change can be used to create internal unity, discredit the opponent, or profit otherwise from conflict. Political actors signal ideological positions and react strategically to the opponent's climate-related actions when there is an opportunity to rally a constituency behind them in united opposition. Attitudes about climate-related events are manipulated by political actors and the media to mobilise support for specific actions and policy instruments. Polarisation is the instrumental vehicle enabling this mobilisation. This approach documents how specific interests capitalise on ideological differences to block climate action (Oreskes & Conway, 2011, 2023). Instrumental polarisation works because intra-group messaging leads to more extreme outcomes than inter-group communication (Sunstein, 2009). Polarisation is hence intertwined with issue attention (Downs, 1972) and participation: A polarisation entrepreneur focuses his or her constituency's attention to make them participate in a polarised policy debate.

A corollary of this observation is that, unlike intrinsic polarisation, instrumental polarisation in a policy debate can fluctuate. Policy debates attract participation and, consequently, polarisation after focusing events and go quiet when the attention has faded. For example, election campaigns may stimulate instrumental polarisation. When a suitable event occurs, insurgent political actors, who seek to challenge the incumbent electorally, use the event to their advantage and amplify divisions in that moment.

Ample evidence supports the instrumental perspective. For example, Fisher, Leifeld, and Iwaki (2013) showed how climate policy discussions returned to a more consensual structure overall in the 110th Congress after a more polarised debate in the 109th Congress. Fisher, Waggle, and Leifeld (2013) found that an emerging consensus on the science was driving this aggregate change while polarisation over economic issues and specific policy instruments still prevailed. After Tea Party candidates were very successful in 2010 and Donald Trump was elected in 2016, the issue of the credibility of the science became a focus once again, both in climate politics (De Pryck & Gemenne, 2017; Dunlap et al., 2016; Jasny & Fisher, 2019) and more generally (Webb & Kurtz, 2022). Republican voters similarly took cues from Democratic elites and opposed them (Merkley & Stecula, 2018), which suggests partisan actors react not only to suitable events but also to their constituency, which in turn reacts to the opponent's views and actions. Fisher and Leifeld (2019) argued that elite polarisation shifted away from the national level towards contestation between the Democratic national incumbent administration and Republican subnational incumbents when economies in fossil fuel-dependent states were threatened by the Clean Power Plan (CPP) in 2015 and 2016. Collectively, this evidence implies that polarisation in a policy subsystem can be temporary and reversible and tends to occur in tandem with political focusing events.

The instrumental perspective relates theoretically to issue-attention cycles (Downs, 1972) but differs in the role of agency. An issue-attention cycle begins when a topic like climate change or a new aspect about the topic is discovered. The media publicise the issue, and political actors and individuals direct their attention towards the issue to solve it. When people recognise the trade-offs and sacrifices involved, public interest and media attention decline in favour of another emerging issue. Unlike issue-attention cycles, the instrumental view of polarisation holds that elite actors strategically lend attention to an issue when an opportunity for polarisation emerges. When there is no more political gain from the same issue, political statements on the issue wane in favour of another contested issue.

The instrumental perspective also differs from the multiple streams framework (Kingdon, 1984), which posits that policy entrepreneurs use "windows of opportunity" during raised public awareness of an issue to

their advantage. While partisan actors use such windows of opportunity to increase partisan division and put pressure on their political opponents, the multiple streams framework argues that windows of opportunity are typically leveraged to keep the policy entrepreneur's pet topic active on the political agenda beyond its original attention window. This perspective differs from the one discussed here in that partisan political actors in the instrumental view have an interest in the polarisation but less so in the issue itself. They are not "policy" entrepreneurs but "vote share" entrepreneurs.

1.3. Reconciling the Two Perspectives

How can the two perspectives be reconciled? There is clear support that polarisation both increases and fluctuates. If both coincide, they must be measured in different ways, at different levels, or among a different set of actors.

One possibility may be different levels of analysis. Individuals may be more prone to intrinsic, lasting belief change while politicians may strategically adapt to the situation. This difference could explain the apparent contradiction between the two perspectives. However, the evidence so far suggests the opposite. Lasting polarised beliefs have been documented also among partisan elites (Egan & Mullin, 2024), while there has been mounting evidence that personal opinion on a range of contentious issues, including climate change, is malleable through personal experience or brief interventions (Chen et al., 2024; Del Ponte et al., 2025; Kalla & Broockman, 2020).

Both perspectives may also apply concurrently, yet with different levels of visibility. Individuals or elites may hold constantly or even increasingly polarised opinions but choose not to voice them until a worthwhile opportunity emerges. Some data collection efforts like attitudinal surveys (Dunlap et al., 2016; Smith et al., 2024) may pick up on latent, underlying opinion while other data collection methods like quantitative text analysis (Guber et al., 2021) or ideological content analysis (Fisher, Leifeld, & Iwaki, 2013; Fisher, Waggle, & Leifeld, 2013) may measure expressed opinion, which becomes activated by polarisation entrepreneurs and then fades into the background again. This possibility was explored in recent work by Henrichsen et al. (2025), who found that responses by identical US-based elite actors on the same attitudinal items systematically differed between surveys, Congressional testimony, and social media due to different audience costs across these arenas. If this distinction holds, we should find that Congressional and media debates display fluctuating polarisation patterns due to event and participation dynamics. This article investigates this question empirically by focusing on the climate policy debates in the US Congress and news media in four US states that were considered "swing states" between 2013 and 2017. Swing states are states in which Democrats and Republicans have a relatively equal chance of winning the majority.

To measure ideological alignment by actors, we use discourse network analysis (Leifeld, 2017). We employ novel computational methods to quantify trends in polarisation over this four-year period, relate them to different discourse network structures over time, and examine which of the two perspectives on polarisation holds in these contexts, guided by two research questions. To that end, we present our first research question:

RQ1: Do discourse networks in Congress and swing state media debates display increases (i.e., intrinsic perspective) or fluctuations (i.e., instrumental perspective) in polarisation over time?

1.4. Focusing Events Under Intrinsic and Instrumental Polarisation

The instrumental perspective posits that polarisation entrepreneurs utilise focusing events to mobilise participation that prompts visible polarisation. But an open question is which kinds of focusing events are associated with the ups and downs of polarisation.

The policy attention literature defines a focusing event as a sudden, rare, harmful event with immediate public awareness and potential geographical boundaries (Birkland, 1997, p. 22). The literature on advocacy coalitions links exogenous events or “shocks” to belief updating within and between coalitions. Exogenous shocks can include disasters, recessions, or shifts in public opinion (Jones & Jenkins-Smith, 2009). DeLeo et al. (2021) provide a summary of research on focusing events. Much empirical evidence has been provided on the effects of various exogenous events on political discourse. For example, Steffen and Patt (2022) examined the effect of the ongoing Russia–Ukraine war on public support for clean energy policies, and Chen et al. (2024) tested the effect of extreme weather events on climate partisanship.

We distinguish between two kinds of focusing events: endogenous and exogenous events (Sornette, 2006). While the distinction between the two is not always clear-cut, the difference lies in whether a climate-related event is primarily associated with the political process of the jurisdiction (= endogenous) or an outside influence, such as a hydrometeorological event like a superstorm or the international climate regime (= exogenous). Focusing events, as described in the policy literature above, are mostly exogenous. An example of an endogenous event could be the debate around a national policy or the involvement of a local or national politician in an international climate treaty or infrastructure project.

We posit that if the instrumental perspective holds, then, contrary to the policy literature, exogenous events should be unrelated to changes in polarisation. Our argument is that a polarisation entrepreneur can only mobilise participation if a salient event is tied to an opposing actor who can be blamed—i.e., if the event is endogenous. If a focusing event is exogenous, there is less scope to assign blame, rally support and drive mobilisation, or draw attention to the issue, making visible polarisation less likely. If no one can be held responsible, the event fails to serve as a rallying point for division. For example, the insurgent Republican Party could react to the incumbent Democratic Party’s prior signature of the Paris Agreement (a partly endogenous political action) by increasing polarisation on the issue. In contrast, there would be little incentive to send contrarian messages in opposition to an international, exogenous event without a prior platform announcement by the domestic political opponent. Without political ownership, the event does not offer much strategic value for polarisation.

We would expect intrinsic polarisation to be affected more strongly by exogenous focusing events because individuals should update their beliefs when extreme events are reported—by believing a report or rejecting the scientific evidence, either way increasing attitudinal polarisation in the background.

We investigate these conjectures using empirical data by compiling a list of events, partitioning them—to the best of our abilities—into exogenous and endogenous types, and overlaying them onto the polarisation and structural trends observed in a time series generated from discourse networks in Congress and four states. Thus, we present our second research question:

RQ2: Are increases in polarisation associated with endogenous or exogenous focusing events?

2. Data

Henrichsen et al. (2025) found that elite climate ideology varies across political arenas, reflecting audience-dependent filtering of expressed positions. To mitigate such arena effects, we conduct two studies of elite opinion, among legislators and other political actors, in different settings. This comparative approach helps avoid overinterpreting a single outlier case. The study is exploratory and does not advance specific expectations about cross-case differences.

The first study measures polarisation dynamics in the US Congress and relates temporal phases and polarisation peaks to exogenous and endogenous events. The second study measures polarisation dynamics in news articles in leading and ideologically diverse print media in four different US swing states and relates each state's polarisation dynamics to focusing events. This selection allows us to assess the research questions across different contexts (national and subnational), in settings where politicians or journalists set the agenda (legislative agenda setting in Congress vs media logic in print media), and across states that have a history of supporting both Democrats and Republicans in office. This matters because the period of analysis covers debates involving alleged federal overreach regarding the CPP.

Our analysis includes the years from 2013 to early 2017, which coincide with the 113th and 114th Congress and cover the second term of the Democrat-led Obama administration, both before and after the mid-term election in November 2014, which resulted in the Republican Party taking the majority in the Senate in 2015. This selection ensures different political constellations are covered. The selected interval is long enough potentially to see ups and downs in polarisation.

For the first study, we searched the Government Printing Office's FDSys search engine using the terms "global warming," "greenhouse gas," and "climate change" to identify political elites who were engaged in climate discussions in the US Congress and analysed the perspectives they presented in their testimonies. We manually annotated all statements by all political actors who gave Congressional testimony during the time period, which comprised a set of 1,150 testimonies, using the Discourse Network Analyzer software (Leifeld, 2017). We included only formal statements and ignored comments made during the question-and-answer portion of the hearings.

For the second study, we searched the Nexis database specifically for content from the top three newspapers in each of the four swing states selected during the same period (from June 2013 through April 2017). These states were selected because they were experiencing internal conflicts regarding their efforts to transition away from fossil fuels to clean and renewable sources of energy during the period of inquiry. After searching for the following terms in the leads of newspaper articles: "climate change," "global warming," "greenhouse gases," "Clean Power Plan," "energy efficiency," "renewable portfolio standards," "renewable energy," "net metering," and "coal," we identified all speakers who were quoted within these articles and analysed their quotes. We manually annotated all statements by political actors in the resulting set of 5,256 news articles using the software Discourse Network Analyzer.

In both studies, each annotated text portion contained four variables: (a) the name of the speaker, (b) the organisation of the speaker, (c) one of nine possible beliefs covering economic, scientific, governance-related, and policy instrument aspects, and (d) a binary variable indicating whether the speaker

agreed with or rejected the stated belief. The speeches were annotated deductively by a multi-person research team after creating an initial codebook. The codebook was refined during the initial phase of the annotation as part of continuous training and review. For quality control, parts of the resulting annotation were cross-checked by other annotators from the team, and the entire content analysis was validated by the principal investigator. While there is no formal measure of intercoder reliability, the set of variables was clearly specified without much room for speculation. In rare cases of disagreement between a coder and the supervisor, a consensual solution was sought among team members. The data collection followed earlier studies on previous time periods of climate debate in the US Congress (Fisher, Leifeld, & Iwaki, 2013; Fisher, Waggle, & Leifeld, 2013). More details on the exact procedure, including actor types and belief codes, can be found in Fisher and Leifeld (2019) and Henrichsen et al. (2025), who employed the Congressional part of the same dataset to answer different questions.

3. Methods

The analysis uses innovations in discourse network analysis (Leifeld, 2017) to measure structural phases and polarisation across the time span. For each case separately, we created a time series of actor congruence networks and another time series of actor conflict networks (Leifeld, 2017) and applied phase detection methods (Vandenhoe et al., 2025) and polarisation measurement developed for this data structure.

3.1. *Time Windows of Congruence and Conflict Networks*

To create an actor congruence network, we extracted all organisation names from a subset of the annotated dataset and interpreted them as nodes in a network. For all pairs of nodes, we counted how many belief–agreement combinations they co-expressed over the selected subset of the timespan and created an edge between the node pair with the count as its edge weight. We furthermore normalised these edge weights by dividing each count by the average number of different beliefs expressed by the two nodes in the respective pair (“average activity normalisation”; see Leifeld, 2017). To create an actor conflict network, we followed the same procedure but only counted instances where one node expressed a positive view on the respective belief while the other actor expressed a negative view on the same belief. Congruence networks capture expressed belief similarities between actors while conflict networks capture expressed differences in beliefs. Both are common types of discourse networks.

We created several hundred partly overlapping consecutive discourse networks for each case, starting with the first date in the observation period and moving the time axis forward by one week at a time until the end of the observation period was reached. At each weekly iteration, we created a congruence and a conflict network around the current mid-point on the time axis with a pre-specified length. For the state media analysis, we chose a time window of 25 weeks. For Congress, we chose 50 weeks to account for the sparser nature of the data. It is worth noting that this difference matters only for smoothing kinks in the time series curve; it does not affect substantive interpretation. This procedure resulted in 198 discourse networks that overlapped with the previous network by 24 and 49 weeks, respectively, and ensured inherent smoothing of the time series. We applied two separate measures to the two discourse network time series: polarisation measurement and phase detection.

3.2. Polarisation

To measure polarisation, we followed a four-step procedure. First, we devised a polarisation measure for assessing the polarisation of a given partitioning of actor nodes into two equal-sized disjoint sets (“coalitions”) given the observed network. The polarisation measure counts how much edge mass must be moved from existing edges to other edges to achieve an ideal type of a perfectly polarised network with the same number of nodes. This ideal type is defined by several criteria: Congruence ties must be present, their weights must be uniformly distributed among all node pairs within coalitions, and these ties must be absent between coalitions; conflict ties must be present, their weights must be uniformly distributed among all node pairs across coalitions, and these ties must be absent within coalitions. The polarisation measure implicitly penalises for unequal group sizes and for small coalitions in the empirical dataset by virtue of the constraint that the disjoint sets are equal-sized and absolute edge mass shifts are counted. Second, we devised a greedy combinatorial optimisation algorithm to find the actor partitioning that maximises polarisation given the observed networks. Third, after finding the optimal partitioning, we extracted its polarisation measure and used it as the polarisation score of the respective time step. Finally, we applied this algorithm to all pairs of discourse networks in the time series to yield a polarisation time series, which we plotted as a continuous curve.

In this polarisation measure, the equal-size constraint prevents unevenly sized David-vs-Goliath solutions with few nodes in one coalition and many in the other. In cases of unequal group sizes with differing political leanings, the equal-size constraint forces some nodes to be assigned to the smaller coalition, even if their ideology matches the larger one. This reflects the principle that polarisation is greatest when opposition is balanced in size (“size parity”; Bramson et al., 2017). The measure is, therefore, intentionally penalised in such cases, enforcing symmetry by design—even as the difference in coalition sizes approaches zero. The equal-size constraint makes the definition of coalitions in polarisation measurement more restrictive than the policy coalitions often identified in discourse networks (Leifeld, 2017).

The requirement of a uniform edge weight distribution in the ideal type penalises internal substructures, such as sub-coalitions or disproportionately influential nodes. In a maximally polarised state, all members of a coalition should contribute equally to intra-group agreement and inter-group opposition—approximating a uniform degree distribution. This uniformity maximises entropy within coalitions by treating all members as equally aligned and indistinguishable in their structural role. Under this interpretation, the ideal type embodies high internal entropy, while the polarisation measure captures the degree of separation between two such high-entropy groups.

Several polarisation measures have been proposed (Aref & Neal, 2021; Mehlhaff, 2024; Salloum et al., 2022). These measures are generally sensitive to network properties such as size, degree distribution, and degree assortativity, and are often normalised to mitigate such effects (Guimerà et al., 2004; Salloum et al., 2022). In contrast, the entropy-based ideal type used here already penalises deviations in degree distribution and assortativity by design. It could also be normalised for size—but we argue it should not. This is because polarisation and participation are inherently confounded: Actors tend to participate more when polarisation is high, for example to assert a counter-position. A small but highly polarised network offers weaker evidence of systemic polarisation than a large polarised network, which reflects broader mobilisation and constituency engagement. Normalising for size would therefore risk overcorrecting and discarding

meaningful variation in participation driven by polarisation itself. For this reason, we retain a size-sensitive version of the polarisation measure, while acknowledging that participation and issue attention remain difficult to disentangle.

3.3. Structural States and Phases

To measure structural states and phases, we followed the five-step procedure proposed by Vandenhoe et al. (2025). First, at each time step, we created a single discourse network by subtracting conflict from congruence edge weights, where positive edge weights indicated congruence in excess of conflict and negative weights indicated conflict in excess of congruence between pairs of actor nodes. Second, we computed a distance matrix containing absolute differences between any two subtracted network matrices for all pairs of time points. Third, we employed hierarchical cluster analysis to find clusters of time points exhibiting similar discourse network structure. Fourth, we interpreted the clusters as time periods of relatively stable network structures (“structural states”) and coloured the background of the polarisation time series with colours representing the different structural states.

Both novel methods were implemented in version 3.0.11.5 of the Discourse Network Analyzer software and its companion R package rDNA.

We then compiled lists of plausible endogenous and exogenous focusing events with brief descriptions (see Tables 1 and 2) and highlighted them in the time series plots to assess qualitatively whether any changes in polarisation coincided temporally with any endogenous or exogenous events.

4. Results

4.1. Polarisation Dynamics in the US Congress

Figure 1 shows the polarisation of the policy debate in the US Congress as a time series. Table 1 shows endogenous events temporally coinciding with peak polarisation phases across the swing states and in the US Congress. Selected events from Table 1 coinciding with high polarisation are also shown as vertical bars in Figure 1, with red and blue lines representing events associated with the Republican and Democratic Party, respectively. The background colours in Figure 1 indicate structural phases and states detected in the dataset. This analysis was independent of the polarisation analysis, but both results are displayed together and reinforce one another’s dynamics.

Turning to Figure 1, we can see that peak polarisation was reached between May and September 2015, with a smaller peak in February 2015. The summer peak was driven by testimony on the CPP, which was released on 3 August 2015 by the Environmental Protection Agency. The Plan was controversial because it required utilities to reduce their carbon emissions, which critics especially from fossil-fuel mining states argued would lead to the closure of coal plants and significant job losses in the coal industry (Fisher & Leifeld, 2019). States that were heavily reliant on coal to fuel their power sector were also critical of the CPP. Temporally, this peak in polarisation also coincided with the announcement of Donald Trump’s candidacy to become president of the US on 16 June 2015. During this time, Trump made speeches about his support for expanded fossil fuel extraction.

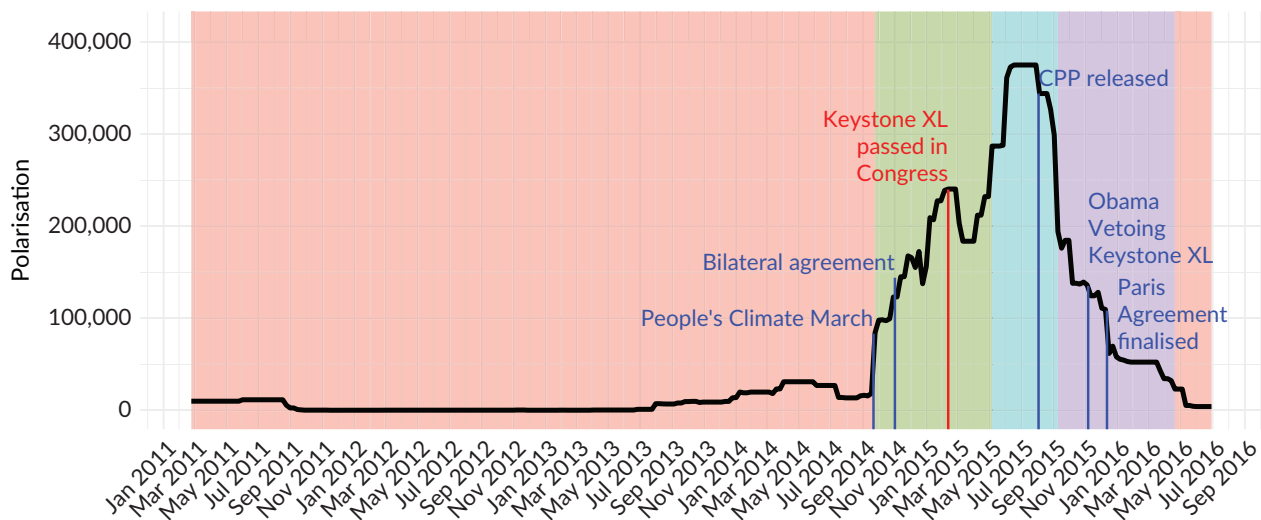


Figure 1. Structural states and polarisation over time in the US Congress. Note: Vertical lines indicate selected key events coinciding with phases of high polarisation, and they are associated with Democrats (blue) or Republicans (red) and are listed with details in Table 1.

Table 1. Endogenous focusing events in US climate politics temporally coinciding with phases of high polarisation.

Date	Short label	Description
2 Jun 2014	CPP announced	The Environmental Protection Agency unveiled the Clean Power Plan (CPP) to reduce carbon emissions from power plants by 30% by 2030.
23 Jul 2014	OH Senate Bill 310	Ohio Governor John Kasich (D) signed Senate Bill 310, which froze Ohio's renewable energy standards for two years.
21 Sep 2014	People's Climate March	The People's Climate March took place in New York City.
23 Sep 2014	UN Climate Summit	The UN Climate Summit convened in New York, where President Obama reaffirmed US commitments to reducing emissions.
4 Nov 2014	Midterm elections	Republicans gained control of the US Senate in the midterm elections, intensifying polarization over climate policy.
12 Nov 2014	Bilateral agreement	The US and China announced a bilateral climate agreement in Beijing, where both nations committed to emissions reductions.
11 Feb 2015	Keystone XL passes Congress	The Republican-controlled Congress passed a bill approving the construction of the Keystone XL Pipeline.
30 Apr 2015	NC ITC Extended	The North Carolina governor signed the bill extending the clean energy Investment Tax Credit for two years.
5 Jun 2015	NV Senate Bill 374	The Nevada Legislature passes a bill that asks the Public Utility Commission to review net metering policies in the state.
16 Jun 2015	Trump announces candidacy	Donald Trump announced his intention to run for president.
3 Aug 2015	CPP released	Obama formally released the CPP, which put the US on the path to reduce emissions and be able to ratify the Paris Agreement when it was finalised.
5 Aug 2015	NC H571 passed	This bill limits the implementation of the CPP in the state of North Carolina.

Table 1. (Cont.) Endogenous focusing events in US climate politics temporally coinciding with phases of high polarisation.

Date	Short label	Description
13 Oct 2015	Democratic presidential debate	The first Democratic presidential debate of the 2016 election cycle took place in Las Vegas (Nevada).
6 Nov 2015	Obama Vetoes Keystone XL	President Obama vetoes the Keystone XL
1 Dec 2015	Congress blocks CPP	The House of Representatives passed a companion resolution to block the implementation of the Clean Power Plan
12 Dec 2015	Paris Agreement finalised	The Paris Agreement was finalised at the end of the two-week COP-21. The Obama administration contributed significantly through active participation and diplomatic efforts.
18 Dec 2015	Obama Vetoes CPP-blocking Resolution	President Obama vetoes the Congressional Resolution that was passed to block the implementation of the Clean Power Plan
22 Dec 2015	NV PUC net metering change	The Nevada state Public Utility Commission reduced the rate that residential solar power generators received for their energy generation.
9 Feb 2016	CPP stayed	The CPP was stayed by the US Supreme Court, preventing its implementation.
3 Sep 2016	Paris Agreement ratified	The US and China ratified the Paris Agreement.
8 Nov 2016	Trump's election victory	Donald Trump won the presidential election.
8 Nov 2016	FL Amendment 1	Florida's Amendment 1, which would limit sales of solar power only to utilities, failed to reach the 60% vote threshold and pass in the general election.
20 Jan 2017	Trump takes office	Donald Trump was inaugurated as the 45th president of the US.

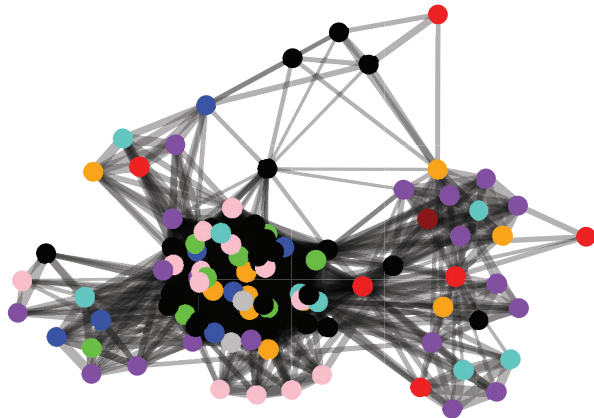
Notes: In Figures 1 and 3, events coinciding with high polarisation are highlighted as blue or red vertical lines.

The first phase, until October 2014, and the last phase, after April 2014, correspond to the same network structure and are thus partitioned into the same structural state and both coloured in red. The three phases/structural states in between (yellow, blue, and purple) correspond to different visible polarisation levels, with the summer 2015 peak in polarisation being singled out as a separate phase.

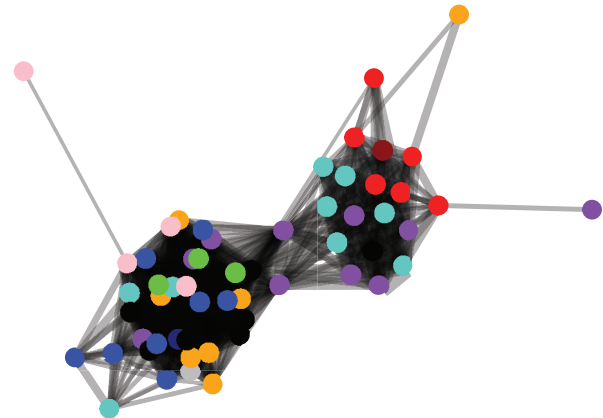
Turning to Figure 2, we see the aggregated networks corresponding to the first four phases. Phase 3, the peak polarisation phase in the summer of 2015, indeed shows significant polarisation in the network. Phases 2 and 4 from Figure 1 exhibit strong polarisation, but less than Phase 3. Despite the visual separation of the two coalitions, polarisation in these time periods is less pronounced than in Phase 3 because the two coalitions are each much smaller than in Phase 3. Arguably, at equal levels of conflict between two groups, a time period that has more participants on both sides of the conflict deserves a higher polarisation score, and this fact is reflected in the higher polarisation score for Phase 3.

In the network for Phase 3, a group of red and purple nodes at the bottom of the network diagram displays cohesive belief congruence ties in excess of conflict. Red nodes are Republican legislators, and purple nodes are business actors, for example from the energy industry. A slightly larger cohesive group of nodes in the middle of the network is dominated by blue nodes, which represent Democratic legislators in Congress,

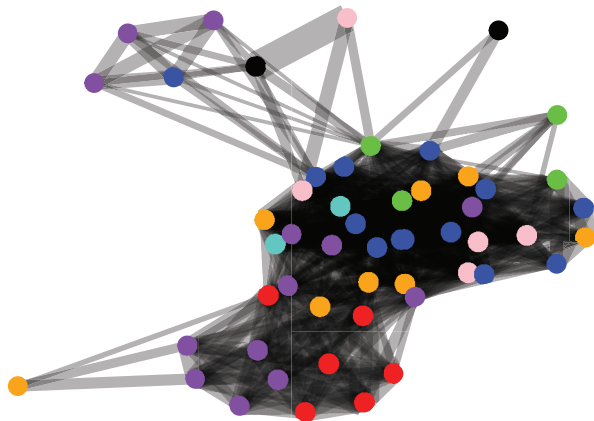
Phase 1: Feb 2011 to Sep 2014



Phase 2: Sep 2014 to Apr 2015



Phase 3: May 2015 to Sep 2015



Phase 4: Sep 2015 to Apr 2016

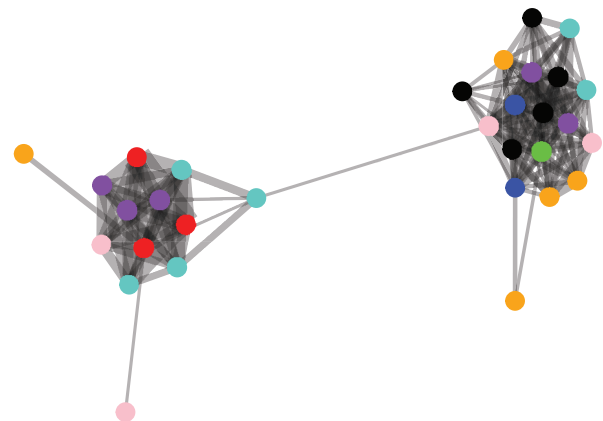


Figure 2. Discourse networks in the US Congress, corresponding to the first four phases shown in the first panel of Figure 1. Notes: Line width represents connection intensity; connections indicate belief congruence in excess of conflict between two actor nodes; red nodes = Republican legislators; blue nodes = Democratic legislators; purple nodes = business actors; orange nodes = NGOs excluding environmental groups; green nodes = environmental groups; pink nodes = government agencies and departments; cyan = subnational government actors; black nodes = scientific actors; grey nodes = others.

supported by environmental NGOs (green nodes) and the executive branch of government, which represents the Obama Administration (pink nodes). There is a visual separation between the two coalitions, though both also show some connectivity, indicating belief overlap on some issues. The strong polarisation measured in this network is mostly due to the significant amount of within-group agreement, lack of within-group conflict, and the presence of between-group conflict. In other words, the coalitions are cohesive while there is substantial disagreement between coalitions.

The first phase, corresponding to the long low-polarisation period highlighted in red in Figure 1, in contrast, exhibits visibly lower polarisation in the network in the first panel of Figure 2. While there is a substantial amount of congruence in excess of conflict within the Democratic legislator-led cluster in the middle, the periphery of the network consists of approximately six large disjoint groups with business involvement and sometimes Republican legislator involvement.

The 2014 part of Phase 2 shown in Figure 1 is also mostly concerned with debating the CPP. The debates included discussion of the content of the Plan, along with Congressional testimony regarding the broader question about the science of climate change, particularly whether climate change is caused by greenhouse gas emissions. This component of the debate provides a link between the Congressional CPP debate, the events unfolding outside of Congress in the political arena, as well as debates in many states around the US, which we will turn to in the following section.

Somewhat disconnected from the immediate contents of the Congressional debate, several political developments listed in Table 1 temporally coincided with this phase. Polarisation began shortly before the UN Climate Summit in New York City (23 September 2014, only two days after the People's Climate March in the same location, highlighted in Figure 1 in blue). At the UN Climate Summit, President Obama (Democrat) reaffirmed US goals to reduce emissions. During the midterm elections, Republicans gained control of the US Senate and vowed to fight the CPP. They proposed and passed their joint resolution that would block the CPP in 2015 once both houses of Congress were under Republican majority. President Obama vetoed the Resolution in December 2015. The second blue event marks a bilateral climate agreement between the US and China, which was criticised by Republicans.

In addition to the resistance to the CPP in Congress, we see further polarisation during this second phase caused by disagreement over the Keystone XL Pipeline, which came to a head in early 2015 when both houses of the Republican-controlled Congress passed a bill approving the pipeline. At the end of February, President Obama vetoed the bill. The debate in Congress focused directly on the issue of the pipeline but contained highly polarised discussions on various economic and scientific policy beliefs as well as policy instruments.

Phase 4 marks a relative decline in polarisation, though the network diagram shows that this decline is, in part, due to a lack of involvement of actors on both sides of the debate. The nexus between participation and polarisation offers a possible link to the political attention literature discussed in the introduction. Polarisation is high when there is significant attention, which is associated with participation by actors on both sides. However, it is equally if not more plausible that issue attention is caused by polarisation and fragmented actor involvement. In any case, political actions and reactions, rather than exogenous events, seem to be the focusing events associated with high polarisation. During Phase 4, there was a relative stalemate between the Obama Administration and the Republican-led Congress as the 2016 election cycle got underway. But the debate in Congress still had the CPP as its anchor point, although policy beliefs on the science of the issue and policy instruments more generally were also heavily discussed and contributed to climate polarisation.

The results shown here broadly support the instrumental view of climate polarisation outlined in the introduction. First, polarisation did not monotonically increase. It decreased again even before the CPP was stayed by the Supreme Court on 9 February 2016 and during a period where Congress and the government were under the control of different political parties. Even in the summer of 2016, which was during the election campaign period, polarisation in Congress was low. This finding suggests a decoupling of polarisation in legislative speech and testimony from election campaigning on climate issues, despite Trump's later repeal of the CPP and reversal of various climate policies during his first three months in office in the spring of 2017.

Second, several events were associated with varying levels of polarisation in Congress. The events most clearly associated with high polarisation in legislative speech or testimony were related to the CPP and the Keystone

XL Pipeline, two partisan projects. In other words, endogenous events gave the largest impetus for polarisation, while it seems less plausible that exogenous events caused any of these polarisation patterns. Table 2 shows a list of exogenous focusing events. A number of exogenous events occurred during the analysis period, such as the release of the first and second parts of the IPCC 5th Report in September 2013 and March 2014, the Super Typhoon Haiyan in November 2013, which raised international awareness, but was framed more as a humanitarian crisis in the US, the polar vortex in January 2014, which prompted media coverage related to climate change, as well as the UN climate conferences (COP-19, COP-20), but they all occurred during time periods where polarisation in the Congressional debate was low. Scientific aspects were discussed in Congress, but they coincided with the two key partisan debates. COP-21, i.e., the Paris Meeting, in December 2015, falls into the polarisation period but is classified as an endogenous event given the fact that US President Obama's political leadership was instrumental in the adoption of the Paris Agreement.

Table 2. Exogenous focusing events in US climate politics.

Date	Short label	Description
27 Sep 2013	IPCC 5th report WGI	The IPCC released the first part of its 5th Assessment Report.
8 Nov 2013	Super Typhoon Haiyan	Super Typhoon Haiyan devastated the Philippines.
11 Nov 2013	COP-19	COP-19 begins in Warsaw, Poland. The conference provided the groundwork for the Paris Agreement.
6 Jan 2014	Polar vortex	An extreme cold wave due to a "polar vortex" affected much of the US.
31 Mar 2014	IPCC 5th report WGII	The IPCC released the second part of its 5th Assessment Report.
12 Apr 2014	IPCC 5th report WGIII	The IPCC published the third part of its 5th Assessment Report.
1 Dec 2014	COP-20	The UN climate conference (COP-20) was held in Lima, Peru.
4 Oct 2016	Paris Agreement ratified	The Paris Agreement reached the threshold for global ratification.

Note: WG = Working group.

4.2. Polarisation Dynamics in the Media Debates of Four US States

Figure 3 displays structural states/phases and polarisation with focusing events in the same manner as Figure 1, but for the media debates in the four swing states. Like before, the phase detection algorithm picks up on varying levels of polarisation and classifies them into distinct structural states.

Although not a top coal-producing state, Ohio extracts coal and natural gas. It is the only fossil fuel-extracting state in our selection of cases. Ohio was also the most coal-consuming state in our selection. Ohio's media polarisation curve had the highest peak around two endogenous events: the CPP announcement by the Environmental Protection Agency during the Obama Administration in June 2014, and a specific state-level event, Senate Bill 310 in Ohio in July 2014, which froze Ohio's renewable energy standards for two years, representing state-level backlash against the CPP.

Florida does not produce fossil fuels, and only 20% of its electricity was generated by coal-burning power plants in 2015 (U.S. Department of Energy, 2015). Nonetheless, it has a similar media polarisation curve to Ohio. In addition to the events at the national level, the peak in 2014 also coincides with significant debate about how the CPP would affect the state, along with the close race for governor. Florida experienced two more peaks in polarisation. One of them temporally coincided with the Paris Agreement in December 2015

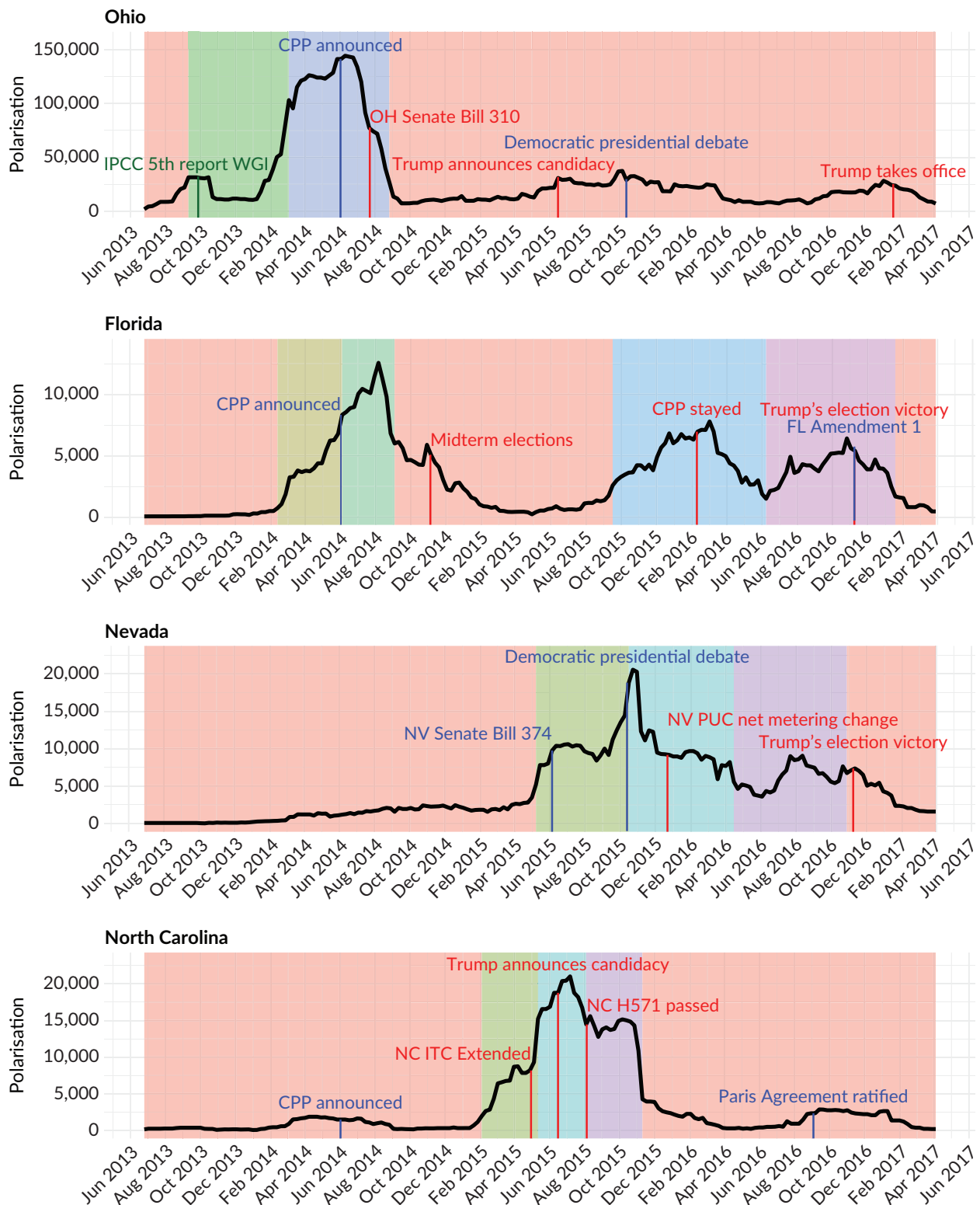


Figure 3. Time series of structural states and polarisation in four US states. Notes: The black curve represents polarisation; vertical lines indicate selected key events coinciding with phases of high polarisation, and they are associated primarily with Democrats (blue), Republicans (red), or international scientific assessments (green) and are listed in Tables 1 and 2; background colours indicate different structural states.

and the decision to stay the CPP. The other peak was associated with the defeat of state Amendment 1, which would have limited solar power sales, along with Trump's campaign and the presidential election in November 2016.

North Carolina's polarisation time series differs from the other curves. The media debate is polarised throughout 2015 with two peaks but no significant polarisation during the other years of the observation period. The polarisation peaks are associated with the response to the Dan River coal ash spill, which released toxic chemicals into the waterways of the state. It coincides with the period when Duke Energy, which was responsible for the spill, pleaded guilty to violating the national Clean Water Act, announcing that it would close the remaining coal ash ponds, and then the federal Environmental Protection Agency updating its requirements for the discharge of toxic chemicals associated with coal ash in late 2015 (Patel, 2016).

In Nevada, there were also periods of moderate polarisation. However, since the state was on track to meet its requirements under the CPP, having already transitioned away from coal as a source of most electricity generation, the polarisation was driven predominantly by debates over who benefits from solar power generation. The peak at the end of 2015 is driven by debates around net-metering in the state after the Nevada legislature passed a law requiring the state Public Utility Commission to examine the electric rate structure, which led to a decision for residential solar power generators to receive a lower rate for their energy. In September 2016, the state accepted a deal that restored the original rates for solar power generators (Shallenberger & Bade, 2016).

Ohio is the only case where moderate to high levels of polarisation temporally coincide with two exogenous events: the release of two sections of the IPCC's 5th Assessment Report. Like in the US Congress, our state-level analysis provides very little evidence in favour of associating exogenous events with increases in polarisation in the policy debate, while polarisation is temporally more likely linked with partisan or endogenous political events. The evidence presented from these four swing states supports the instrumental view of polarisation, where polarisation is not constantly high or ever increasing, but strategically amplified by key actors. In the case of these four media debates, the media had an interest in playing up polarisation ("media logic"; see Esser, 2013), perhaps in addition to partisan actors, while in the case of the US Congress, partisan actors had an interest in amplifying polarisation when opportunities arose. In both types of venues and data sources (see also Henrichsen et al., 2025), there was little temporal association between exogenous focusing events like international scientific reports or extreme weather and heightened polarisation in the debate. Elite polarisation in climate policy debates is political, not attitudinal.

5. Conclusion

The aim of the study was to measure elite polarisation in US climate policy debates and link it to endogenous ("instrumental polarisation") or exogenous focusing events ("intrinsic polarisation"). We contribute to the literature on elite climate polarisation (Chinn et al., 2020; Egan & Mullin, 2024; Fisher, Leifeld, & Iwaki, 2013; Fisher, Waggle, & Leifeld, 2013; Guber, 2017; Guber et al., 2021; Jasny & Fisher, 2019; Merkley & Stecula, 2018), group polarisation in networks (Aref & Neal, 2021; Salloum et al., 2022) and ideology (Bramson et al., 2017; Mehlhaff, 2024), and the dynamics of issue attention and policy entrepreneurship (Birkland, 1997; Downs, 1972; Kingdon, 1984).

Expressed elite polarisation on climate change in the US displayed considerable temporal variation over a four-year period both in subnational print media and Congressional testimony. Phases of high polarisation coincided with endogenous, political events in the sense that one side reacted to prior actions by the other side, while exogenous and hydrometeorological focusing events mostly occurred during phases of low observed elite polarisation. This pattern is consistent with a view of climate polarisation as an instrument partisan actors choose to activate for electoral gains when an endogenous opportunity presents itself.

This view suggests that there is an important element of public and political attention in climate polarisation. Like in issue-attention cycles (Downs, 1972) and windows of opportunity (Kingdon, 1984), attention to the issue—and associated observable polarisation—cycles up and down. However, unlike the previous studies, the up cycles are not caused by exogenous focusing events; they are manufactured internally. This finding suggests that instrumental polarisation acts as a new theoretical mechanism for issue-attention cycles and multiple streams in established policy fields: Partisan actors do not *follow* the news and attention cycle; they *manufacture* conflict and attention when it serves a particular political purpose. Research on issue-attention cycles needs to distinguish between attention as a cause and a consequence. Future research on issue-attention entrepreneurship should also complement our approach by measuring the interests and motivations of political actors directly.

Our findings are compatible with the possibility that actors hold continuously (or even increasingly) polarised opinions but choose not to express them, which we call intrinsic polarisation. While we find support for the instrumental, rather than the intrinsic, view in elite policy debates, the two perspectives should be reconciled by factoring in the difference between expressed speech and the beliefs actors hold but do not find opportune to express. Initial results indicate that actors strategically choose what to say where (Henrichsen et al., 2025), and this conclusion may extend to the dynamics of political opportunities for amplifying conflict. Future research should assess elite opinion during times of low expressed polarisation. The return of the Trump Administration to office in 2025 and its efforts to limit climate policies and remove the US from the Paris Agreement once again creates an opportunity for replication with a similar case but more recent data.

The definition of polarisation should be expanded to account for mobilisation and the resulting participation it generates. While some scholars have called for normalising polarisation by network size (Salloum et al., 2022), which can be a sensible adjustment in some contexts, we argue that participation must not be separated from systemic polarisation when political actors actively mobilise support and thereby amplify polarisation. Ignoring this relationship would risk underestimating the extent of polarisation. Future research should also explore this nexus between polarisation, mobilisation, issue attention, and participation.

Finally, the two novel methods for discourse networks introduced here shed light on political discourse dynamics. They work well together and promise data-driven analyses of temporal trends in ideological networks. Here, they were applied to public discourse, rather than privately held opinions. Future research should also apply these tools to longitudinal observations of privately held opinions.

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Conflict of Interests

The authors declare no conflict of interests.

Data Availability

The data are available from the authors upon request.

LLMs Disclosure

The authors used ChatGPT 4 by OpenAI to generate suggestions for focusing events listed in Tables 1 and 2. The authors reviewed and edited the text as needed and take full responsibility for the content of the publication.

References

- Aref, S., & Neal, Z. P. (2021). Identifying hidden coalitions in the US House of Representatives by optimally partitioning signed networks based on generalized balance. *Scientific Reports*, 11(1), Article 19939.
- Birkland, T. A. (1997). *After disaster: Agenda setting, public policy, and focusing events*. Georgetown University Press.
- Bramson, A., Grim, P., Singer, D. J., Berger, W. J., Sack, G., Fisher, S., Flocken, C., & Holman, B. (2017). Understanding polarization: Meanings, measures, and model evaluation. *Philosophy of Science*, 84(1), 115–159.
- Chen, T. H. Y., Fariss, C. J., Shin, H., & Xu, X. (2024). Disaster experience mitigates the partisan divide on climate change: Evidence from Texas. *Global Environmental Change*, 89, Article 102918.
- Chinn, S., Hart, P. S., & Soroka, S. (2020). Politicization and polarization in climate change news content, 1985–2017. *Science Communication*, 42(1), 112–129.
- De Pryck, K., & Gemenne, F. (2017). The denier-in-chief: Climate change, science and the election of Donald J. Trump. *Law and Critique*, 28, 119–126.
- Del Ponte, A., Shino, E., Gellers, J. C., & Truelove, H. B. (2025). Personal damage from tropical disasters increases Republicans' support for climate change policies. *Journal of Environmental Psychology*, 102, Article 102552.
- DeLeo, R. A., Taylor, K., Crow, D. A., & Birkland, T. A. (2021). During disaster: Refining the concept of focusing events to better explain long-duration crises. *International Review of Public Policy*, 3(1), 5–28.
- Downs, A. (1972). Up and down with ecology—The "issue-attention cycle." *The Public Interest*, 28, 38–50.
- Dunlap, R. E., McCright, A. M., & Yarosh, J. H. (2016). The political divide on climate change: Partisan polarization widens in the US. *Environment: Science and Policy for Sustainable Development*, 58(5), 4–23.
- Egan, P. J., & Mullin, M. (2024). US partisan polarization on climate change: Can stalemate give way to opportunity? *PS: Political Science & Politics*, 57(1), 30–35.
- Esser, F. (2013). Mediatization as a challenge: Media logic versus political logic. In H. Kriesi, S. Lavenex, F. Esser,

- J. Matthes, M. Bühlmann, & D. Bochsler (Eds.), *Democracy in the age of globalization and mediatization* (pp. 155–176). Palgrave Macmillan.
- Fiorina, M. P., & Abrams, S. J. (2008). Political polarization in the American public. *Annual Review of Political Science*, 11(1), 563–588.
- Fisher, D. R., & Leifeld, P. (2019). The polycentricity of climate policy blockage. *Climatic Change*, 155(4), 469–487.
- Fisher, D. R., Leifeld, P., & Iwaki, Y. (2013). Mapping the ideological networks of American climate politics. *Climatic Change*, 116(3), 523–545.
- Fisher, D. R., Waggle, J., & Leifeld, P. (2013). Where does political polarization come from? Locating polarization within the US climate change debate. *American Behavioral Scientist*, 57(1), 70–92.
- Fraune, C., & Knodt, M. (2018). Sustainable energy transformations in an age of populism, post-truth politics, and local resistance. *Energy Research & Social Science*, 43, 1–7.
- Guber, D. L. (2017). Partisan cueing and polarization in public opinion about climate change. In H. von Storch (Ed.), *Oxford research encyclopedia of climate science*. <https://doi.org/10.1093/acrefore/9780190228620.013.306>
- Guber, D. L., Bohr, J., & Dunlap, R. E. (2021). ‘Time to wake up’: Climate change advocacy in a polarized Congress, 1996–2015. *Environmental Politics*, 30(4), 538–558.
- Guimerà, R., Sales-Pardo, M., & Amaral, L. A. N. (2004). Modularity from fluctuations in random graphs and complex networks. *Physical Review E*, 70(2), Article 025101.
- Henrichsen, T., Leifeld, P., Jasny, L., Weaver, I., & Fisher, D. R. (2025). Ground-truthing political elites in the public sphere: Measuring the arena effects of elite opinion. *Research & Politics*, 12(1). <https://doi.org/10.1177/20531680241307940>
- Iyengar, S., Lelkes, Y., Levendusky, M., Malhotra, N., & Westwood, S. J. (2019). The origins and consequences of affective polarization in the United States. *Annual Review of Political Science*, 22(1), 129–146.
- Jasny, L., Dewey, A. M., Robertson, A. G., Yagatich, W., Dubin, A. H., Waggle, J. M., & Fisher, D. R. (2018). Shifting echo chambers in US climate policy networks. *PLoS ONE*, 13(9), Article e0203463.
- Jasny, L., & Fisher, D. R. (2019). Echo chambers in climate science. *Environmental Research Communications*, 1(10), Article 101003.
- Jones, M. D., & Jenkins-Smith, H. C. (2009). Trans-subsystem dynamics: Policy topography, mass opinion, and policy change. *Policy Studies Journal*, 37(1), 37–58.
- Kalla, J. L., & Broockman, D. E. (2020). Reducing exclusionary attitudes through interpersonal conversation: Evidence from three field experiments. *American Political Science Review*, 114(2), 410–425.
- Kingdon, J. W. (1984). *Agendas, alternatives, and public policies*. Brown and Company.
- Leifeld, P. (2017). Discourse network analysis: Policy debates as dynamic networks. In J. N. Victor, A. H. Montgomery, & M. N. Lubell (Eds.), *The Oxford handbook of political networks* (pp. 301–326). Oxford University Press.
- Mehlhoff, I. D. (2024). A group-based approach to measuring polarization. *American Political Science Review*, 118(3), 1518–1526.
- Merkley, E., & Stecula, D. A. (2018). Party elites or manufactured doubt? The informational context of climate change polarization. *Science Communication*, 40(2), 258–274.
- Oreskes, N., & Conway, E. M. (2011). *Merchants of doubt: How a handful of scientists obscured the truth on issues from tobacco smoke to global warming*. Bloomsbury Publishing.
- Oreskes, N., & Conway, E. M. (2023). *The big myth: How American business taught us to loathe government and love the free market*. Bloomsbury Publishing.

- Patel, S. (2016, March 1). A brief history of U.S. coal ash since the Kingston spill. *POWER*. <https://www.powermag.com/a-brief-history-of-u-s-coal-ash-since-the-kingston-spill>
- Salloum, A., Chen, T. H. Y., & Kivelä, M. (2022). Separating polarization from noise: Comparison and normalization of structural polarization measures. *Proceedings of the ACM on Human-Computer Interaction*, 6(CSCW1), Article 115.
- Sarathchandra, D., & Haltinner, K. (2021). How believing climate change is a “hoax” shapes climate skepticism in the United States. *Environmental Sociology*, 7(3), 225–238.
- Shallenberger, K., & Bade, G. (2016, September 16). Updated: Nevada regulators approve NV Energy, SolarCity grandfathering proposal. *Utility Dive*. <https://www.utilitydive.com/news/updated-nevada-regulators-approve-nv-energy-solarcity-grandfathering-prop>
- Smith, E. K., Bognar, M. J., & Mayer, A. P. (2024). Polarisation of climate and environmental attitudes in the United States, 1973–2022. *npj Climate Action*, 3(1), Article 2.
- Sornette, D. (2006). Endogenous versus exogenous origins of crises. In S. Albeverio, V. Jentsch, & H. Kantz (Eds.), *Extreme events in nature and society* (pp. 95–119). Springer.
- Steffen, B., & Patt, A. (2022). A historical turning point? Early evidence on how the Russia–Ukraine war changes public support for clean energy policies. *Energy Research & Social Science*, 91, Article 102758.
- Sunstein, C. R. (2009). *Going to extremes: How like minds unite and divide*. Oxford University Press.
- U.S. Department of Energy. (2015). *State of Florida: Energy sector risk profile*. <https://www.energy.gov/sites/prod/files/2015/05/f22/FL-Energy%20Sector%20Risk%20Profile.pdf>
- Vandenhoe, K., Garic, K., & Leifeld, P. (2025). When does discursive change happen? Detecting phase transitions in discourse networks of sustainability transitions. *Energy Research & Social Science*, 122, Article 104020.
- Webb, R. M., & Kurtz, L. (2022). Politics v. science: How President Trump’s war on science impacted public health and environmental regulation. *Progress in Molecular Biology and Translational Science*, 188(1), 65–80.

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The “Hottest Ever January” in Germany: Farmers’ Protests and the Discourse on Agriculture and Food Production

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Abstract

Following the German Federal Government’s announcement of agricultural subsidy cuts in November 2023, farmers mobilized unprecedented protests, creating what their associations celebrated as a “hot January with more protests than the country has ever seen” (“Bauern wollen ‘Kampfansage’ der Ampel annehmen,” 2023). These actions ultimately forced the government to withdraw the proposed policy changes. Our study applies the politicization/depolicitization – policy change model to analyze the theoretical connections between politicization and policy change announcements. Using discourse network analysis, we examine the evolution of politicization/depolicitization dynamics through newspaper articles published between the initial subsidy cut announcement on November 17, 2023, and March 26, 2024. Our findings reveal a dynamic politicization process that farmers strategically amplified through protests to achieve policy reversal. Our research also identifies concerning behavioral patterns of right-wing actors and ideological infiltration within these protests, opening avenues for further investigation.

Keywords

agri-food policy; climate change; farmers’ protests; politicization

1. Introduction

Agri-food production in Germany and across the European Union (EU) contributes significantly to biodiversity loss, soil degradation, water and air pollution, and global heating (Intergovernmental Panel on Climate Change,

2019; Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019). At the same time, the sector is highly vulnerable to the ecological impacts of these crises, placing farmers in a “trilemma” of land use: balancing the urgent demands of mitigating climate change, ensuring food security, and preserving biodiversity (Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen, 2020). While the EU’s Common Agricultural Policy (CAP) has incorporated some “green” elements into recent reform cycles, the need for a comprehensive greening of the CAP remains critical (Alons, 2017), including in the German context (Matthews, 2023; Pe’er et al., 2019).

Aside from calls for green transformation, European rural areas are undergoing a profound socio-economic restructuring marked by demographic decline, persistent poverty, and the loss of small farms (European Commission, 2022; Hobbis et al., 2023). This has created a feeling of being “left behind” among both farmers and the rural population (Kenny & Luca, 2021; Rodríguez-Pose, 2018). Once central to rural social and cultural life, many farmers now feel marginalized and existentially threatened (Heinze et al., 2021) and long for greater appreciation and recognition (see also van Der Ploeg, 2020).

This constellation has created tension between proponents of sustainability transformation in agriculture and those directly affected by the corresponding measures, such as farmers and rural communities (Hobbis et al., 2023). As a result, public debate over the future of agriculture has intensified (Heinze et al., 2021) and agri-food policy has undergone progressive politicization, with discourse and media playing an increasingly influential role (Hobbis et al., 2023). Although there is substantial research on (the lack of) sustainability transformation within European agri-food governance, a critical gap remains in understanding the media discourse surrounding rural areas, particularly in relation to farmers and their protests. Despite the growing significance of the politicization of agri-food policy and the rise of agricultural protests, there remains a notable gap in empirical research examining the organizational strategies and network dynamics that underpin these movements, with a notable exception being Heinze et al. (2021).

Our study addresses this gap by examining the strategies and dynamics of the farmers’ protests in Germany, focusing on the discourse in one central news outlet surrounding disagreements between farmers’ associations and the Federal Government. On November 17, 2023, the Federal Government—composed of the Social Democratic Party of Germany (SPD), Alliance 90/the Greens (Greens), and the Free Democratic Party (FDP)—announced plans to cut climate-damaging agricultural subsidies as part of a broader budget renegotiation mandated by the Federal Constitutional Court just two days earlier (“Ampel darf 60 Milliarden Euro nicht verschieben,” 2023). The announcement sparked widespread protests, with farmers’ associations mobilizing nationwide and declaring a “hot January with more protests than the country has ever seen” (“Bauern wollen ‘Kampfansage’ der Ampel annehmen,” 2023).

This mobilization in response to announced subsidy cuts politicized both this specific issue and broader agri-food policy. Therefore, we draw on the theoretical politicization/depoliticization – policy change (PDPC) model to connect politicization to the (lack of an) announcement of policy change (Feindt et al., 2021). We argue that protests successfully prevented the implementation of the announced policy changes through the strategic escalation of politicization levels. We investigate instances of politicization/depoliticization by applying discourse network analysis. By mapping how competing political networks mobilize around environmental agri-food policies—particularly as a backlash—we contribute to research on the politics of environmental networks. Our dataset consists of newspaper articles published between the Federal Government’s announcement of the subsidy cuts on November 17, 2023, and March 26, 2024.

In this context, we are asking the following research questions: How did the farmers' protests in Germany shape the (hyper-)politicization of the agri-food policy transition? How effectively were they used as a politicization strategy to influence decision-making coalitions? To what extent did escalating levels of politicization contribute to the eventual withdrawal of the announced policy change?

The remainder of this article situates the research within the current literature, presents the theoretical framework linking (de)politicization to policy change, and describes the case selection and method. Our findings show that the public discourse shifted from depoliticized to politicized and back. We then discuss and conclude these findings.

2. Context of the Farmers' Protests in Germany

Historically, agri-food policy in the EU has followed an "exceptionalist" logic, prioritizing the special needs and interests of the farm sector (Skogstad, 1998). Today, a significant portion of the EU's budget supports farmers through the CAP (Grohmann & Feindt, 2024). This reflects a tradition of "agricultural welfare states," where state measures address market failures and boost farm income, recognizing the role of farmers in ensuring food security (Knudsen, 2011; Sheingate, 2021). However, trade and environmental pressures have challenged this traditional approach to agri-food policy, alongside emerging actors advocating for climate responsibility and the preservation of biodiversity. Consequently, agri-food policy has been partially modified, with exceptionalist legacies now co-existing alongside new arrangements in a system called/known as "post-exceptionalism" (Daugbjerg & Feindt, 2017).

German agri-food policy also reflects post-exceptionalism. Its tenets are anchored in the Agricultural Act of 1955. This Act's objectives still apply today, such as the participation of agriculture in national economic development, the best possible food security, the compensation of any natural and economic disadvantages, increasing productivity, and ensuring social equality. The implementation of the German agricultural strategy for a sustainable transformation of agriculture within the framework of the EU's CAP (2023–2027) is managed by the federal ministries of agriculture using an array of policy instruments.

In many agricultural regions, large-scale agribusinesses have expanded at the expense of small and medium-sized family farms. In fact, the number of German farms decreased from 905,000 in 1975 to 256,000 in 2022, despite stable agricultural land area, due to technological advances and economies of scale (Deutscher Bauernverband, 2024).

The German agri-food policy operates within the framework of EU policies, particularly the CAP and the more recent Farm to Fork Strategy, which is part of the European Green Deal. The latter especially mandates shifting toward more environmentally friendly agricultural practices, which farmers worry will increase their operational costs. Heinze et al. (2021, p. 363) analyzed the initial German farmers' protests that took place in the fall of 2019, identifying three primary triggers: economic existential concerns, excessive bureaucratic requirements, and socio-cultural status loss. The authors note that recent years have seen the food industry shift toward lower product prices, driven by large retail chain power and consumer behavior. While German food prices generally align with EU averages, the situation has become particularly dire due to exceptionally low prices for milk and meat (Heinze et al., 2021, p. 364). Their research also revealed that farmers' associations were increasingly distancing themselves from established political entities, with agricultural protesters showing a tendency to adopt right-wing populist perspectives.

In addition to the detrimental economic developments mentioned above, the consequences of climate change will exacerbate the situation of farmers, as acknowledged by organizations such as the Intergovernmental Panel on Climate Change (Rivera-Ferre, 2020).

Against this backdrop, in November 2023 the German Federal Government proposed cuts in the agricultural sector as part of the general budget cuts in response to the ruling of the Federal Constitutional Court. Among these were the abolition of subsidies for diesel and the introduction of a vehicle tax for agricultural vehicles. The result was nationwide protests by farmers on a scale not previously seen. These intensified on January 4 2024, when protesters confronted Federal Economics Minister Robert Habeck (Greens) at the Schlüttsiel ferry terminal in Schleswig-Holstein, leading to clashes with police. While investigations into coercion charges continue, evidence suggests that far-right groups orchestrated these protests (Fuchs & Pausch, 2024). The same day, the Federal Government partially backtracked, announcing a three-year phase-out of agricultural vehicle tax concessions rather than immediate implementation, although the diesel subsidy cuts remained in place. Farmers argue that misguided agricultural policies threaten their survival, particularly those running small farms. While existing subsidies help to offset challenges from war in Ukraine, inflation, and volatile grain prices, their proposed reduction has triggered strong opposition from farmers.

3. The PDPC model

This study aims to examine how agricultural subsidies became a politicized issue within the discourse on farmers' protests. Politicization describes the phenomenon whereby a previously apolitical matter becomes the subject of political and/or public discussion, creating demand for action (Broekema, 2016; De Wilde & Zürn, 2012). Depoliticization denotes the opposite phenomenon: A political matter ceases to be a matter of political and/or public debate. Potential objects of politicization are the process of decision-making (politics), the content of a decision (policy), and the decision-making venue (polity). The subjects of politicization are all the individual and collective actors who participate in the political process, including those in a position to organize political protests (De Wilde & Zürn, 2012).

Given our interest in the instrumentalization of farmers' protests as a politicization strategy to influence decision-making coalitions and policy change, we follow the conceptual framework developed by Feindt et al. (2021). The authors identify three interconnected dimensions of (de)politicization: (a) as a process in which issues become subjects of intensified public debate, (b) as a strategy where actors deliberately frame issues as matters of public policy, and (c) as an outcome measuring how established an issue is within public policy domains and political governance mechanisms. Moreover, political actors may employ politicization strategies to counter depoliticization processes, addressing participation barriers and political apathy to use depoliticization strategies to combat increasing sector politicization.

Feindt et al. (2021, pp. 512–513) link politicization to policy change, arguing that moderate politicization facilitates change, while excessive politicization hinders it (see Figure 1). In high-conflict scenarios, dominant policy networks tend to resist concessions to external actors and new ideas (Bang & Marsh, 2018; Feindt et al., 2021).

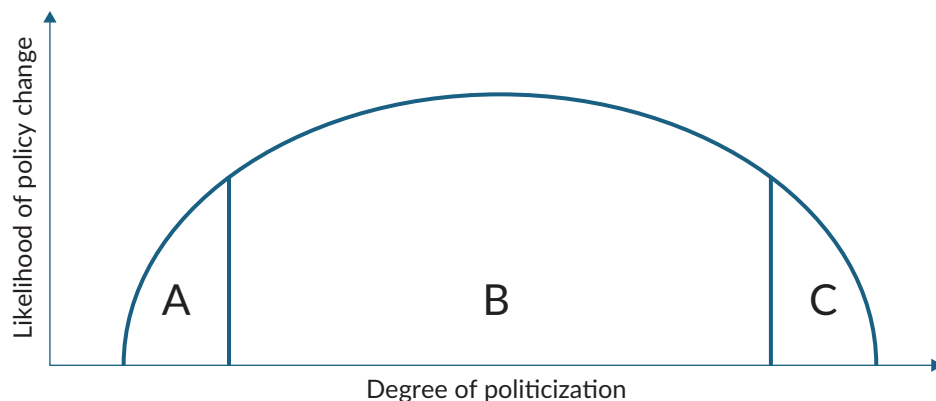


Figure 1. PDPC model. Notes: A = low level of politicization and low likelihood of policy change; B = medium degree of politicization and high likelihood of policy change; C = high level of politicization and low likelihood of policy change. Source: Adapted from Feindt et al. (2021, p. 516).

Given that the farmers' protests were triggered by the announcement of a policy change, we consider the framework put forth by Feindt et al. (2021) as fitting for guiding our research. We argue that the framework facilitates reflection on all the dimensions of politicization (process, strategy, and outcome) visible in the observed timeframe. However, it is important to emphasize that the framework does not provide guidance for explaining the dynamics of politicization.

Much of our understanding of politicization processes is rooted in the literature on European integration, which offers different conceptualizations of politicization processes. Most definitions subscribe to the crucial role of awareness (or issue salience), meaning an increasing or decreasing engagement or interest in an issue, and the polarization of actors. Actor polarization is evident when conflicts increase in scale or intensity and politicization dynamics can be observed (De Wilde, 2011; Hutter, 2016; Hutter & Kriesi, 2019; Marquardt & Lederer, 2022). Thirdly, a large strand of the literature emphasizes the role of actor expansion, which is the range of actors involved in these processes (Hutter, 2016; Marquardt & Lederer, 2022). Thus, we conceptualize politicization in terms of awareness, actor expansion, and actor polarization.

We concur with the literature that argues that politicization strategies may be used to counter depoliticization processes and vice versa (c.f. Feindt et al., 2021) and argue that these politicization strategies may also be deployed to accelerate politicization processes. Hence, we focus on the role of strategic actions that actors use to bring about or impede policy change (e.g., Boasson & Huitema, 2017; Faling et al., 2018; Kriesi et al., 2007). We conceptualize strategic actions as deliberately employed and dynamic, meaning that the underlying strategy may adapt to contextual changes or in response to learning (Faling & Biesbroek, 2019; Faling et al., 2018).

Building on the previously discussed interconnection of the three dimensions of politicization (process, strategy, and outcome), we propose to view protests as a potential (hyper-)politicization strategy in response to increasing politicization, with the aim of averting the implementation of the announced policy change. We contend that the role of protests is to escalate pre-existing politicization into hyper-politicization, thereby increasing the likelihood of vested policy elites taking over and decreasing the likelihood of announced policy changes being implemented.

To conceptualize politicization, we draw on Grande and Hutter's (2016) four typologies of politicization, which reflect varying levels of issue salience, actor expansion, and polarization. Together with the three levels of politicization (Feindt et al., 2021), this creates the following variations:

1. Low Politicization: limited issue salience, minimal actor expansion, and low polarization;
2. Medium Politicization: increased issue salience, with either a limited range of actors adopting a broad range of positions or a broad range of actors engaging in debate but sharing similar positions;
3. Hyper-Politicization: high issue salience, a broad range of actors, polarized and contested public debate.

Dolezal et al. (2016) make four arguments as to why the study of protests is essential for understanding the dynamics of politicization—a perspective we build on to operationalize the role of farmers' protests. First, if the media reports on farmers' protests, this indicates rising public issue awareness. Following this, we contend that an increase in the media coverage of farmers' protests indicates increasing issue awareness, which is one of the three key dimensions underlying politicization processes.

Second, new protest waves point to an involvement of actors that has expanded beyond political elites. Thus, the mere coverage of farmer protests by the media indicates the presence or changing dynamics of the second key dynamic underlying politicization processes. Moreover, an increasing number of diverse actors participated in the discourse surrounding the media coverage of these protests. Therefore, we contend that in addition to regarding protest as an indicator of an increase in the number and type of actors involved, the numerical expansion of actors partaking in the discourse surrounding farmers' protests provides a deeper insight into this dimension/aspect of politicization.

Third, the move from a contained form to a more contested style of politics clearly indicates increasing polarization (among actors). Here again, we contend that the polarization of discourse coalitions around farmers' protests serves as another in-depth observation of this key dynamic.

Fourth, we posit that the effectiveness of protests as a (hyper-)politicization strategy can be assessed by changes in the discourse—specifically, through shifts in the central topics and the discourse coalitions over the observed timeframe. Typically, the effectiveness of actors' strategizing is observed in its impact on policy change (e.g., Meijerink & Huitema, 2010). In examining the intersection of protests and discourse, we consider protests an effective politicization strategy when they successfully challenge the discourse surrounding either the announcement or withdrawal of policy changes.

4. Method and Data

To study how discourse (de)politicizes, we use dynamic data to track how discourse evolves over time. Discourse network analysis is a frequently used and established method to investigate public discourse. It enables researchers to empirically trace the development of actors and issues over time (Leifeld, 2020) and has been used in numerous studies (such as Nagel & Bravo-Laguna, 2022; Nagel & Schäfer, 2023; Schaub, 2021). Discourse network analysis combines content-based text analysis and relational network analysis (Leifeld, 2017). Within the discourse, the actors and the links between them can be visualized in network graphs, represented as nodes and links (Brandes & Wagner, 2004).

As our text data source, we use newspaper articles from the *Frankfurter Allgemeine Zeitung*, a newspaper of record respected internationally. Its rigorous fact-checking and high journalistic standards ensure accurate and trustworthy information and balanced reporting, while its conservative bias is well suited to the topic under study. Farmers' interests have traditionally been strongly supported by more conservative politicians. Therefore, we expect to find an appropriately wide range of articles that cover the topic of farmers' protests in Germany. We also conducted random checks of other press outlets to compare their topic coverage but found no significant deviations among newspapers sharing similar political orientations.

Our analysis covers the period from November 17, 2023, to March 26, 2024. This timeframe begins with the German government's announcement of subsidy cuts following the Federal Constitutional Court's budget ruling. Nationwide farmers' protests commenced on November 23, 2023. Two significant events occurred on January 4, 2024: The protests at the Schlüttsiel ferry terminal intensified upon Habeck's arrival, and the government announced a three-year phase-out plan for diesel tax concessions in agriculture. The analysis period concludes on March 26, when media coverage of the issue effectively ceased after the withdrawal of the previously announced policy changes.

We selected articles using the keywords "Bauern" (farmers) AND "Protest" (protest) for the specified timeframe. The analysis included 184 articles with 804 coded concepts. Using the framework by Schaub (2021), we categorized the concepts under problem perception, policy instrument, and policy position (see the codebook in Appendices A2 and A3 in the Supplementary File). Two coders used an iteratively refined codebook, with intercoder reliability testing for quality assurance. Coding captured actor names, affiliations, concept categories, and agreement/disagreement for both direct and indirect speech.

We delineated distinct time periods to better analyze the conflict's evolution. T1 covers the initial phase of the protests and the earliest published articles on this topic, extending from November 23, 2023, until just before the Christmas period.

The second time period (T2) contains a particularly dense network with numerous nodes and links due to the heightened discourse intensity around January 4, 2024 (the day of both the ferry incident and the announcement of the subsidy phase-out plan). To manage this complexity, we divided this period into two distinct two-week sub-periods: T2.1 covering December 24, 2023, to January 5, 2024, and T2.2 spanning January 6, 2024, to January 22, 2024. T3 encompasses a one-month period ending on February 22, 2024, while T4 extends from February 23, 2024, to March 26, 2024. The final two one-month periods were established based on the duration of the initial period (T1) and to facilitate clearer observation of the dynamic developments throughout the conflict.

The analysis uses one-mode networks to connect organizations through shared issues, and issues through shared mentions of organizations. Organization names, types, and a typology of actors (and corresponding color codes used in the network graphs in Section 5: politics – black; NGOs – blue; government/administration – red; science – yellow; light blue – media; purple – grassroots/civil society) are detailed in Table A3 in the Supplementary File; emphasis is placed on organizations representing farmers' interests. Table 1 provides an overview of the most relevant organizations and the acronyms used in the network graphs in Section 5.

Table 1. Overview of acronyms most relevant for this study.

Acronym	Name of Organization in English (and in German)
ABL	Working Group for Rural Agriculture (Arbeitsgemeinschaft bäuerliche Landwirtschaft)
AfD	Alternative for Germany (Alternative für Deutschland)
BMEL	Federal Ministry of Nutrition and Agriculture (Bundesministerium für Ernährung und Landwirtschaft)
BMF	Federal Ministry of Finance (Bundesministerium für Finanzen)
BMI	Federal Ministry of Interior (Bundesinnenministerium)
BMWK	Federal Ministry of Economy and Climate Protection (Bundesministerium für Wirtschaft und Klimaschutz)
BReg	Federal Government (Bundesregierung)
BT	German Bundestag
CDU	Christian Democratic Union (Christlich-Demokratische Union)
CSU	Christian Social Union (Christlich-Soziale Union)
DBV	German Farmers' Association (Deutscher Bauernverband)
FaBLF	Family Businesses in Agriculture and Forestry (Familienbetriebe Land und Forst)
FDP	Free Democratic Party (Freie Demokratische Partei)
Landwirtschaft schafft Verbindung	Farming Creates Connection (Landwirtschaft schafft Verbindung)
STMWI	Bavarian Ministry of Economic Affairs (Bayerisches Staatsministerium für Wirtschaft, Landesentwicklung und Energie)
SPD	Social Democratic Party Germany (Sozialdemokratische Partei Deutschland)
ZKL	Commission for the Future of Agriculture (Zukunftskommission Landwirtschaft)

We are aware of the limitations of this approach. While newspaper data are readily available, they are not created for scientific purposes and are therefore biased. Consequently, our results must be interpreted with caution, particularly as they only pertain to the discourse in the selected *Frankfurter Allgemeine Zeitung* articles.

The results of this study are presented in the different phases (T1, T2.1, T2.2, T3, and T4) to trace the development over time and to observe (de)politicization as well as any changes in the most dominant actors and issues. In the network graphs, the size of the node represents the frequency and the link's strength represents the weight, that is, the number of concepts shared by the actors. The radial layout presents the concept nodes according to their values of degree centrality; put differently, the highest values are in the center and the lowest in the periphery. The combination of node size and link strength gives an overview of the relevant information. We then use qualitative content from other sources as an aid to interpret the findings.

5. Results

Our empirical analysis reveals several interesting patterns. First, we observe increased awareness of the issue of farmer's protests and a notable expansion in the range of participating actors. Second, we find changes in actor constellations during the (hyper-)politicization process, which was characterized by polarization and contestation around January 4, 2024; then the discourse depolarized. Third, we note changes in the content of the discourse.

5.1. Changes in the (Hyper-)Politicization Process

In line with our conceptualization of politicization, we start by examining the progression of issue awareness and actor expansion over time. Figure 2 illustrates the weekly development of these two key indicators of politicization. As shown, both the volume of publications per week and the number of statements made per week rose markedly, quickly reaching their highest levels in January. This suggests a significant increase in issue awareness, which then swiftly reduces after peaking in the observed timeframe. The sudden increase in the number of newspaper articles and lack of data starting from March 26 (13th calendar week, 2024) represents the completion of declining issue awareness, and with it, one of the key dimensions of politicization.

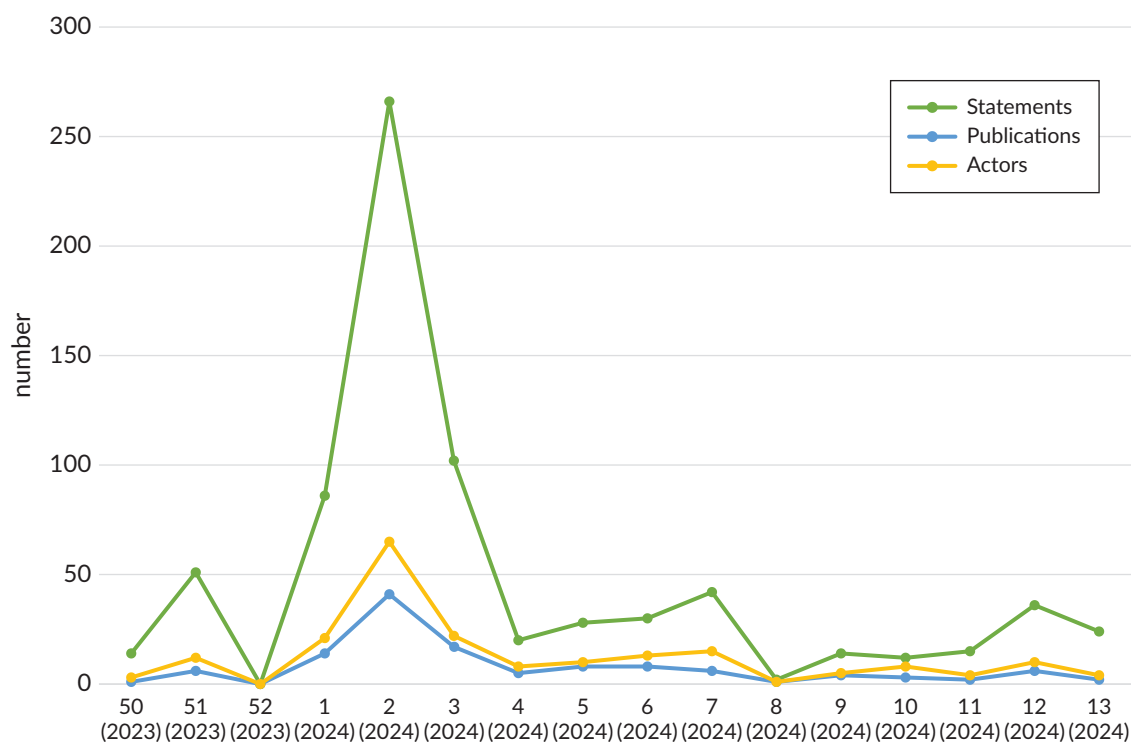


Figure 2. Issue awareness and actor expansion over time. Note: Own compilation based on DNA data, retrieved from Discourse Network Analyzer (Leifeld, 2024; Nagel, 2024).

In line with issue awareness, our data reveal a similar peak in the range of actors involved in the discourse in the second week of January, which levels off over the following eight weeks. This pattern indicates that, alongside heightened issue awareness, there was also a notable expansion in the range of participating actors, particularly during T2.1 and T2.2. Our analysis suggests that the initially low politicization levels in

December 2023 rose rapidly throughout January 2024, resulting in a phenomenon we can justifiably regard as/term hyper-politicization. To substantiate this trend and provide a more comprehensive understanding of these observations, the subsequent analysis will delve into the levels of polarization and depolarization between actors.

Consistent with the other dimensions underlying politicization processes, we also observed increasing polarization between two different discourse coalitions, namely the farmers' interest coalition and the Federal Government coalition. An overview of the processual development of politicization dynamics is provided in Figure 3.

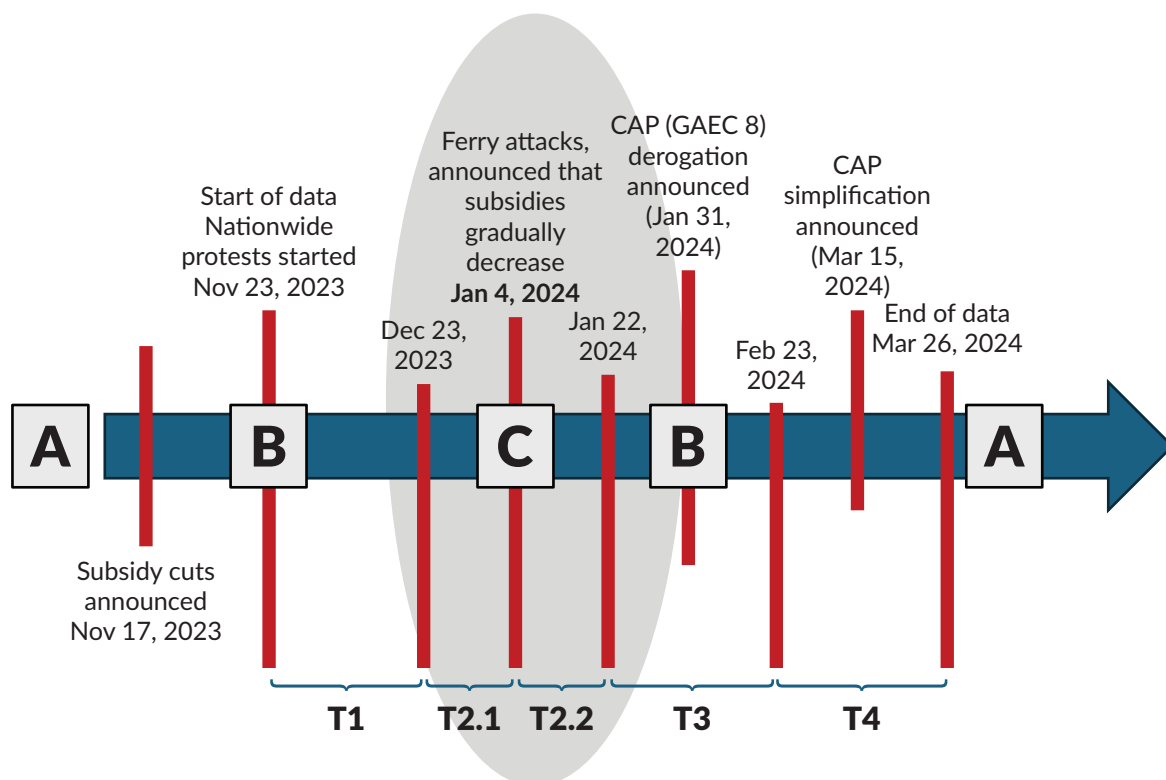


Figure 3. Timeline of the successive events between the announcement of the subsidy cuts (November 17, 2023) and the resulting decision of the European Commission to weaken the CAP (May 5, 2024). Notes: T1 = Nov 23, 2023–Dec 23, 2023; T2.1 = Dec 20, 2023–Jan 5, 2024; T2.2 = Jan 6, 2024–Jan 22, 2024; T3 = Jan 22, 2024–Feb 22, 2024; T4 = Feb 23, 2024–March 26, 2024; A = low level of politicization and low likelihood of policy change; B = medium degree of politicization and high likelihood of policy change; C = high level of politicization and low likelihood of policy change; GAEC 8 = maintain non-productive areas and landscape features, and ensure the retention of landscape features.

5.2. T1: Two Competing Discourse Coalitions

From the inception of the discourse on the farmers' protests in November and December 2023 (T1; see Figure 4), we observe two discourse coalitions. The first one consists of the conservative parties Christian Democratic Party (CDU) and Bavarian Christian Social Party (CSU), the liberal party FDP, the Ministry of Agriculture, the German Farmers' Association (DBV), the state-level farmer's association (Farmers and Winegrowers Association Rheinhessen), and the Federal Ministry of Finance (BMF).

The second, smaller coalition consists of other government bodies, NGOs, and scientific actors. This includes the Federal Ministry of Economy and Climate Protection (BMWK), the Federal Government (BReg), and the environmental organization Greenpeace. The Weihenstephan-Triesdorf University of Applied Sciences (FH-WST) is located between the two coalitions.

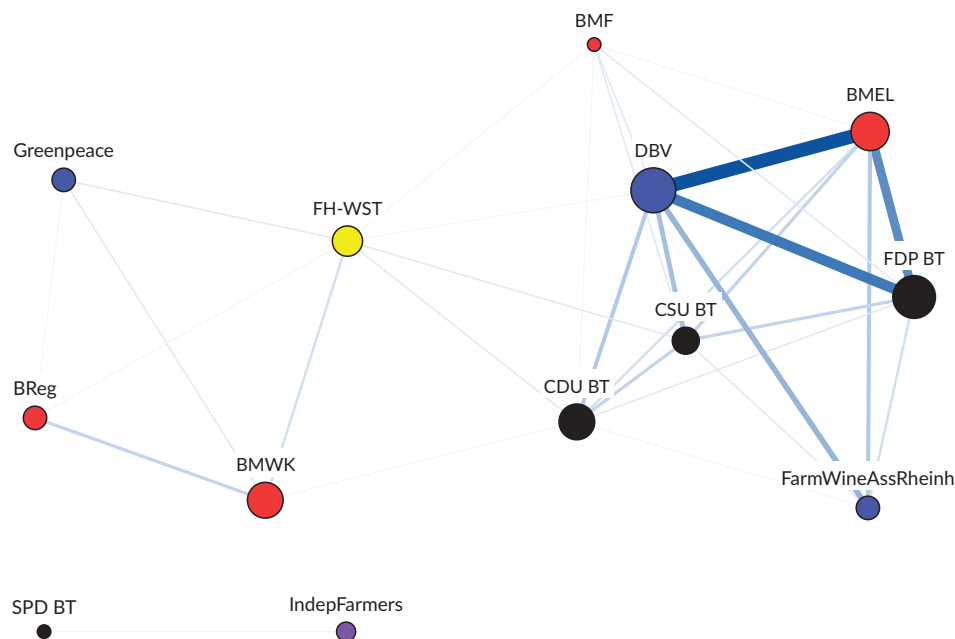
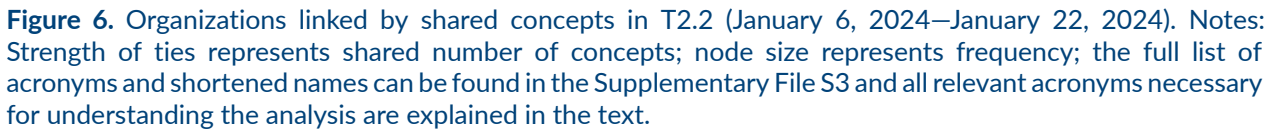
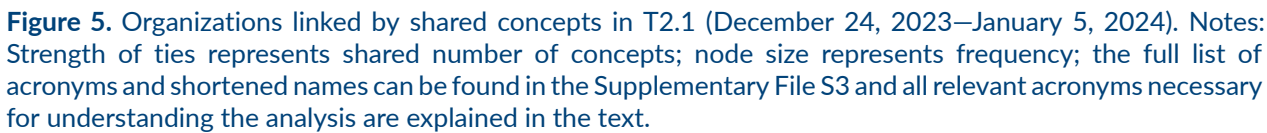


Figure 4. Organizations linked by shared concepts in T1 (November 23, 2023–December 23, 2023). Notes: Strength of ties represents shared number of concepts; node size represents frequency; the full list of acronyms and shortened names can be found in the Supplementary File S3 and all relevant acronyms necessary for understanding the analysis are explained in the text.

5.3. T2.1 and T2.2: Polarization and Contestation

Polarization is visible between the two actor groups from December 24, 2023, to January 5, 2024 (see Figure 5). The strongly connected group on the right side of the network consists of actors from government/administration and politics. Interestingly, the conservative CDU and the more liberal Greens are connected within this group. The Federal Government as well as the State Government of Lower Saxony (GovNS) connect this coalition with the group of actors on the left-hand side, which consists of three interest groups: Family Businesses in Agriculture and Forestry (FaBLF), the DBV, and the Hessian Farmers' Association (HessFarmersAss). The Bavarian Ministry of Economic Affairs (STMWI) is also linked to this discourse coalition dominated by interest groups.

In the time phase T2.2—from January 6, 2024, to January 22, 2024, shortly after the escalating event on January 4—the discourse became heavily politicized, with many actors stating their positions on the farmers' protests. The network graph in Figure 6 visualizes this situation using a threshold of the link weights that are higher than two (only links that appear in the data at least two times are visible). Two organizations are particularly dominant due to their high frequency (visible through bigger nodes): the Federal Ministry of Nutrition and Agriculture (BMEL) and the DBV. These two organizations are linked by shared concepts in the discourse. Each of them is also discursively connected (visible through high centrality values like a star) to other like-minded organizations with lower frequency (visible through smaller nodes).



The BMEL is connected to the BMF, the BMWK, the Federal Environment Agency (BMU), and the political parties SPD and the FDP. The DBV is the center of farmers' interests and is connected to the state-level farmers' interest group HessFarmersAss and to other regional farmers' associations. It is also connected to the conservative political parties CDU and CSU. Interestingly, the Future Commission for Agriculture is connected to both central organizations: the DBV and the BMEL. This commission aims to create an equitable, sustainable future for German agri-food policy and could be interpreted as a mediating organization between the two opposing groups.

Even if there is a clear divide between the two groups of actors, we must acknowledge that the polarization is not as strong as expected and that the DBV and the BMEL are discursively linked. However, two new organizations emerge in the discourse: Farming Creates Connection (LsV), a farmer movement with close ties to right-wing actors and ideas; and the right-wing populist party Alternative for Germany (AfD). The fact that the AfD blamed the Federal Government's "energy price extremism" for farmers' discontent and made other statements compatible with right-wing extremist group slogans indicates that organizations with more polarizing opinions emerged in the discourse.

5.4. T3 and T4: Depolarization of the Discourse

The actor networks evolved strongly between T3 and T4 (see Figures 7 and 8). Initially, on the upper right-hand side in Figure 7, they featured a strongly connected discursive coalition dominated by government/administration and political parties (Greens), alongside a fragmented discourse network of actors consisting mainly of farmers' interest groups on the left-hand side. Over time, this shifted to a fragmented and less polarized discourse network graph centered around the DBV, the CDU, and the BMEL in T4 (see Figure 8).

The development from a dense discourse network in T2.2 to a more polarized one in T3 and a fragmented and less dense network in T4 illustrates the depoliticization of the discourse. Interestingly, the BMEL changed coalitions over time: In the first phase (T1; see Figure 4), it formed part of the farmers' group, but in the second time period (T2.1; see Figure 5), it formed part of the governmental actors' group; following the escalation in T2.2 (Figure 6), it moved to the center of the discourse; then in T3 (Figure 7), it shifted closer to the government coalition, before becoming closely connected to the farmers' association in T4 (Figure 8).

We therefore conclude that a stable coalition of government actors is observable throughout our analysis, with the exception of the BMEL, which changed its position as the discourse depoliticized.

Overall, we conclude that following the announcement of subsidy cuts in T1, the discourse progressively polarized in T2.1 (December 24, 2023, to January 5, 2024; see Figure 5). The announcement of a policy change, which entailed the removal of climate-damaging subsidies for farmers, resulted in a sharp rise in issue politicization, peaking on January 4. This exceptionally high level of politicization after the events of January 4 can also be described as hyper-politicization. The escalation of the protesting farmers with Minister Habeck on the ferry further politicized the discourse, which soon reached its climax (T2.2; January 6, 2024–January 22, 2024; Figure 6). In this T2.2 period, we observed the highest intensity and frequency of actors, with the BMEL, the BMF, and the DBV as the most dominant ones.

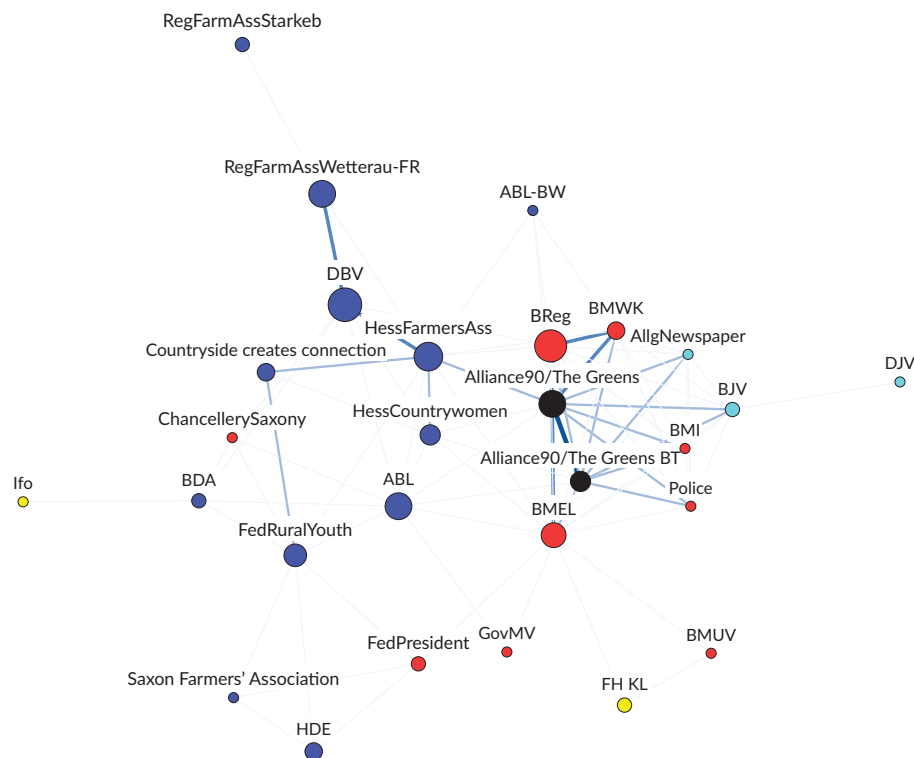


Figure 7. Organizations linked by shared concepts in T3 (January 23, 2024–February 22, 2024). Notes: Strength of ties represents shared number of concepts; node size represents frequency; the full list of acronyms and shortened names can be found in the Supplementary File S3 and all relevant acronyms necessary for understanding the analysis are explained in the text.

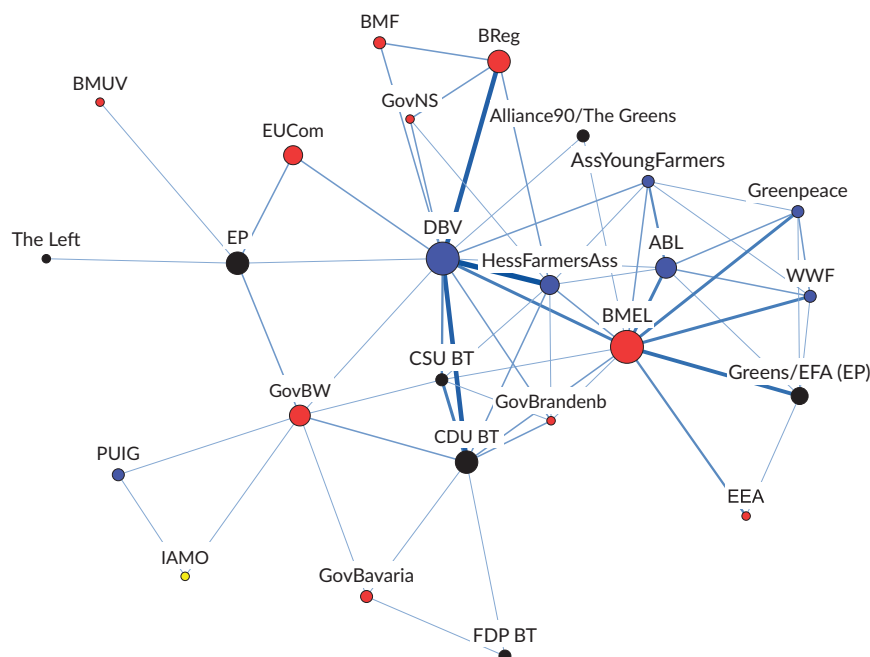


Figure 8. Organizations linked by shared concepts in T4 (February 23, 2024–March 26, 2024). Notes: Strength of ties represents shared number of concepts; node size represents frequency; the full list of acronyms and shortened names can be found in the Supplementary File S3 and all relevant acronyms necessary for understanding the analysis are explained in the text.

5.5. Changes in the Discourse Content

In the following, we examine changes in the discourse throughout the timeframe T1. The dominant concepts (Figure 9) discussed at the inception of the nationwide protests were the financial situation of farmers, the agri-motor tax exemption, and criticism of the Federal Government. The cut of diesel subsidies was also mentioned frequently but not in combination with many other concepts. The financial situation of farmers formed the nucleus of the debate, underscoring the existential threat to farmers posed by the policy change.

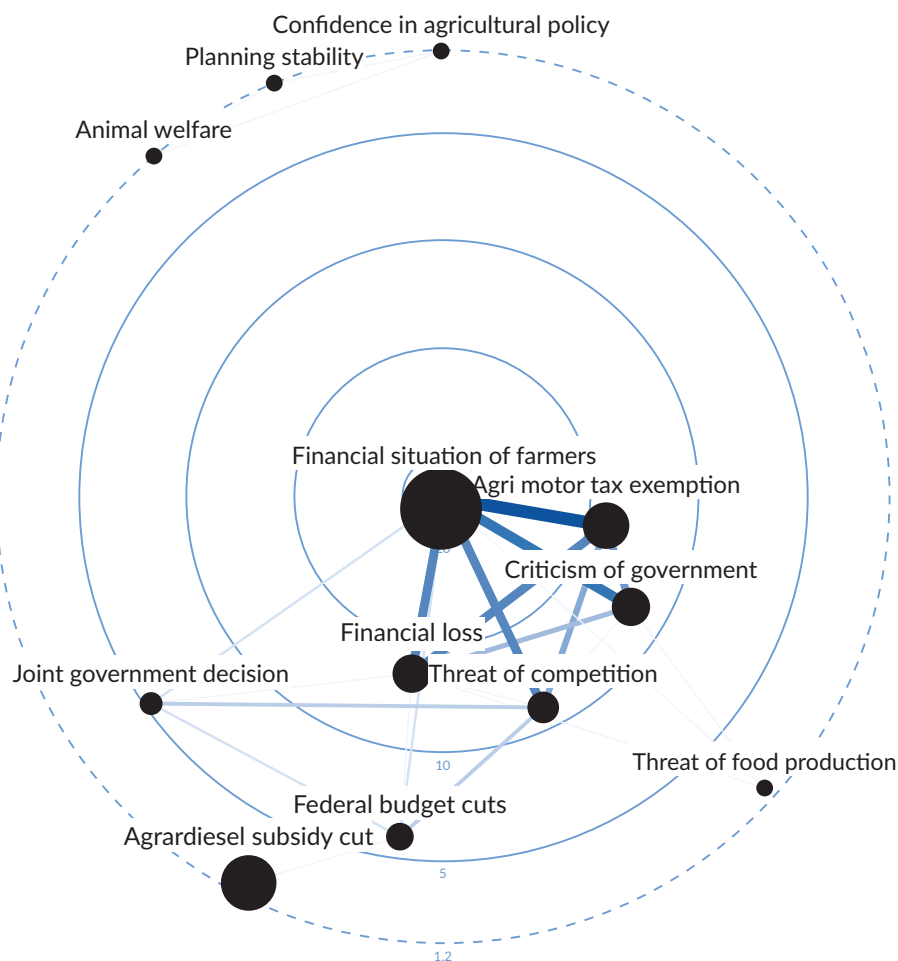


Figure 9. Concepts linked by organizations that mention both concepts in the debate (contains policy proposal, policy instrument, problem perception) in T1 (November 23, 2023–December 23, 2023). Notes: The figure visualizes the top 10, ranked by degree centrality; the full list of acronyms and shortened concept names can be found in the Supplementary File S2 and all relevant concepts necessary for understanding the analysis are explained in the text.

In this debate, DBV president Joachim Rukwied told the German Press Agency (December 18, 2024) that the plans for agricultural diesel and vehicle tax exemptions had to be withdrawn completely, stating, “If not, there will be massive resistance from January. We will not put up with that.” Federal Agriculture Minister Cem Özdemir (December 18, 2024), who was closely connected to the farmers’ interest group during this period, expressed understanding for the discontent caused by the planned abolition of tax breaks for agriculture: “I know that you have come here to Berlin with a huge amount of anger,” he said, reiterating his

own criticism of the Federal Government's decisions. Peter Breuning, professor of agricultural economics at FH-WST (December 19, 2024) criticized the relief measure itself, stating that subsidizing fossil fuels was outdated, but acknowledged that farmers are still dependent on diesel. This statement illustrates the bridging position of the FH-WST in the discourse between the two coalitions in Figure 4 (yellow node).

There are two different discourse streams during T2.1 (see Figure 10). The most dominant one was protest culture following incidents during the protests and offensive symbolism. For instance, the protestors often erected gallows with a traffic light hanging from them (symbolizing the governing coalition, which consisted of the social democrats in red, the Greens in green, and the liberal party in yellow).

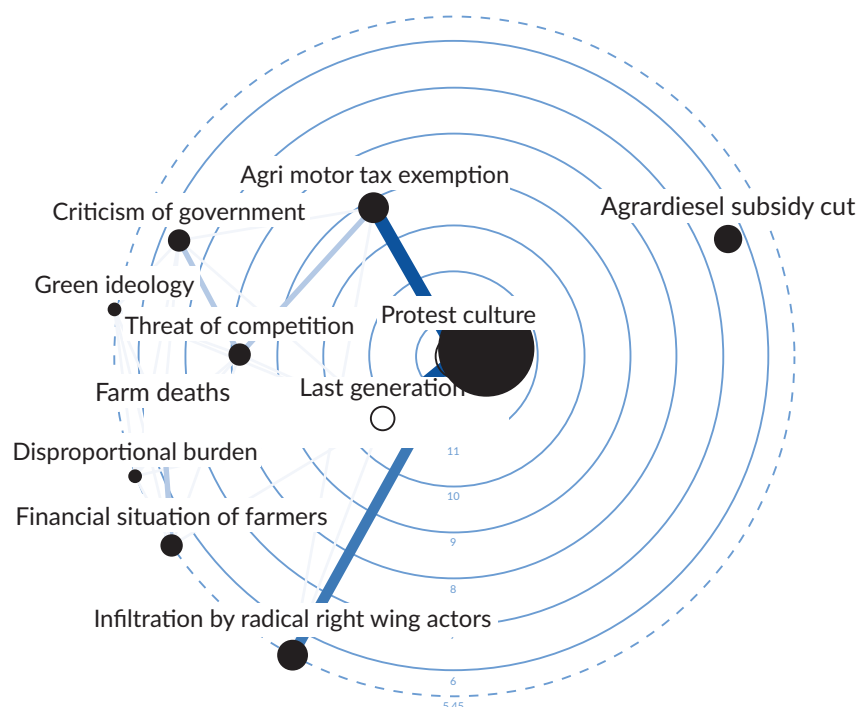


Figure 10. Concepts linked by organizations that mention both concepts in the debate (contains policy proposal, policy instrument, problem perception) in T2.1 (December 24, 2023–January 5, 2024). Note: The full list of acronyms and shortened concept names can be found in the Supplementary File S2 and all relevant concepts necessary for understanding the analysis are explained in the text.

In this context, actors participating in the discourse compared farmer protest culture to left-wing, radical climate activism. For instance, Herbert Reul (January 5, 2024), CDU interior minister of North Rhine-Westphalia, warned farmers of certain actions: “Not every form of protest benefits the cause. That applies to sticker campaigns as well as tractor blockades.” The politician of the Greens Misbah Khan (January 4, 2024) raised concerns about the undermining of the planned farmers’ action week. She noted that while the farmers’ protest was initially successful due to strong arguments, it was now being infiltrated by right-wing extremists, and groups with ties to Russia, which were inciting violence and coup fantasies.

The farmers’ protests, however, often received more support. In a different and less dominant discourse stream, diesel subsidy cuts and federal budget cuts were the focus of discussion. For example, Max von Elverfeldt (January 5, 2024), chairman of FaBLF, emphasized that avoiding this tax increase would be crucial to maintaining a competitive agricultural and forestry sector in Germany.

In the following two weeks—that is, in T2.2 (January 6, 2024–January 22, 2024; see Supplementary File, Figure 11)—we observed a strong focus on diesel subsidy cuts and the federal budget cuts, which were the central issue of the negotiations between farmers’ interest groups and the Federal Government. Additionally, the animal welfare tax featured prominently in the discourse and was framed by farmers’ interest groups as an additional “burden” on the farmers. As the Federal Government has partially withdrawn the planned cuts, the conflict would appear resolved. These developments indicate that the discussion is shifting in January 2024, with strategic attempts being made to obtain further concessions. That includes the animal welfare tax, which is unpopular for some—mainly conventional or industrial representatives of agriculture. Conservative actors, like Bavaria’s Minister of Economic Affairs Hubert Aiwanger (January 20, 2024), opposed the animal welfare tax, framing it as a “farmers’ tax” meant to redirect public anger toward farmers. In contrast, Martin Schulz (January 23, 2024), a farmer and national spokesman for the Working Group for Rural Agriculture (ABL), supports the levy, arguing it is essential for farms to finance the transition to higher husbandry standards, even if this impacts income. Without this tax, regulatory laws could force more farms to shut down, as seen with sow farming.

Figure 12 (see Supplementary File) covers the concepts categorized as policy proposals or policy instruments. At the center of the discourse is the argument that concessions should be granted to farmers (further relief for farmers). There is a cross-party consensus on this issue, as illustrated by the following statements. Federal Minister of Agriculture Cem Özdemir (Greens; March 9, 2024) has proposed relieving the burden on farms in other areas of more sustainable working, such as when converting stables for animal welfare reasons. “Any possible compromise to pacify the situation now must be discussed with the farmers,” said CDU and CSU parliamentary group deputy Steffen Bilger (March 9, 2024). Further concepts are the downsizing of bureaucracy, of the GAEC (good agricultural and environmental conditions) standards, and of the EU set-aside extension. “Tax smoothing” refers to the conflict in the then-governing coalition between the economically oriented FDP and the more environmentally oriented SPD and Greens on the abolition of climate-damaging subsidies.

Regarding the tax smoothing issue, Federal Finance Minister Christian Lindner (FDP; March 20, 2024) announced plans to reintroduce tax smoothing for agricultural businesses. This measure, which averages income over several years for tax purposes, is estimated to provide relief of around 50 million euros annually. Tax smoothing was previously available to farmers and foresters until 2022. Likewise, the Federal Government (March 26, 2024) addressed this issue, promising farmers tax smoothing in a protocol statement. This means that tax burdens will be based on the multi-year average rather than the profit of a potentially very good year. Additionally, some environmental regulations and bureaucratic hurdles will be removed. Downsizing bureaucracy and the GAEC standards are also central. Despite the ongoing prominence of discussions surrounding the cut of diesel subsidies, recent discourse has increasingly isolated or peripheralized this topic. As part of the CAP from 2023, there are a total of nine GAEC standards for land; these refer to a set of EU standards aiming to achieve a sustainable transformation of agriculture.

5.6. Impact of Politicization on Policy Change

We now examine how varying levels of politicization influenced the announcement of policy withdrawal. Earlier, we presented a timeline (Figure 3) detailing the successive events that occurred within our observation period. Figure 3 includes an overview of the accumulated indicators of politicization alongside

Feindt et al.'s (2021) conceptualization (see Figure 3: A = low level of politicization and low likelihood of policy change; B = medium degree of politicization and high likelihood of policy change; C = high level of politicization and low likelihood of policy change) per time period. In response to pressure from farmers in Germany, Belgium, and France, the European Commission proposed on January 31, 2024, to postpone set-aside requirements for one year, citing heightened pressure on international agricultural markets resulting from the war in Ukraine (Kafsack, 2024). Following this, Regulation (EU) 2024/587, which included the derogation of GAEC 8 (fallow land) for another year, was adopted on February 12, 2024. Considering that this announcement came after a hyper-politicized period just a few months prior to the European Parliament elections, when the need to downsize bureaucracy was playing a prominent role in the discourse, we interpret this as an effective instance of protest serving as a hyper-politicizing strategy.

Within the timeframe of observation, the Simplification Regulation was announced on March 15, 2024. With an eye on reducing the regulatory burden on farmers, the European Commission proposed a further review of the CAP. The resulting Simplification Regulation (EU) 2024/1468 was adopted on May 14, 2024, and included derogations of or exemptions from multiple GAEC standards (GAEC 5: low tillage; GAEC 6: soil cover; GAEC 7: crop rotation; and GAEC 8: fallow land), the exemption of small farms from conditionality, and amendments to the CAP Strategic Plans (Articles 120 and 159). This development intersected with an already highly politicized context and prominent demands for additional concessions to farmers, including reduced GAEC standards. We interpret this as further evidence of the effectiveness of the farmers' protests. Additionally, this suggests that politicization originally occurring at the member state level escalated to the EU level—though our data cannot provide further explanation of this phenomenon.

Following our expectation of a relationship connecting protest—as a hyper-politicizing strategy that has an impact on discourse—to the withdrawal of announced policy change, we observed the use of reliefs from EU policy to de-escalate the protests and depoliticize the discourse. This underlines how farmers' protests were highly effective in (hyper-)politicizing the issue of an agricultural transformation during the observed timeframe, as they contributed to averting (announcements of) policy change.

6. Discussion and Conclusions

In this study, we focused on farmers' protests in Germany and employed discourse network analysis based on newspaper articles published between November 17, 2023, and March 26, 2024. Our study complements the insights provided by Finger et al. (2024), who outlined the policy responses to farmer protests by providing insights into the dynamic discourse underlying the policy processes. Beyond this specific contribution to the literature focusing on farmers' protests, our study contributes to the theoretical and empirical refinement of politicization in the agri-food policy domain. Empirically, we contribute to the emerging field of agri-food politicization by examining the role of protests in these processes and the interplay between both institutional and non-institutional arenas. Theoretically, our findings refine the PDPC model (Feindt et al., 2021) by showing that protests can result in (hyper-)politicization and that policymakers in such situations maintain the status quo by actively withdrawing their policy proposals—an aspect which the authors of the original model did not explicitly outline.

The withdrawal of policy change represents another mechanism of depoliticization, further refining the PDPC model. While our analysis centered on Germany, this finding aligns with policy responses to farmers' protests

in other regions. Notably, even the European Commission made concessions to farmers in response to these protests (Tosun et al., 2024).

Furthermore, this research contributes empirically to improving our understanding of how the mobilization of farmers' protests in Germany forms part of a changing protest landscape (see Heinze et al., 2021), demonstrating that policy studies and protest research can benefit from integration.

We examined which actors drive various issues in agri-food policy and how their efforts politicize discourse, elevating farmers' concerns on the political agenda. What stands out is the fear among small and medium-sized farms of economic losses resulting from subsidy cuts or animal welfare taxes, alongside concerns about bureaucratic burdens and the financial investments required for agricultural transformation.

While one-sided cuts to environmentally harmful subsidies faced strong resistance, effective change must address all aspects and alleviate farmers' financial anxieties. The German farmers' protests strengthened similar movements across the EU, creating unified pressure on agri-food policy before the European Parliament elections on June 9, 2024. This pressure ultimately weakened the CAP and diluted environmental legislation.

This short-term solution undermines successful transformation, allowing problems to grow rather than diminish. Given the urgent need to accelerate food system transformations, such temporary measures are counterproductive. Additional research must explore appropriate interventions and identify communication and policy instruments that can overcome current fears and break existing deadlocks.

Finally, we contribute to the growing scholarship on post-exceptionalism that sheds light on increasing issue politicization and the role of discourse in shaping policy change (Daugbjerg & Feindt, 2017; Skogstad, 1998). Our findings indicate that the discourse on agricultural transformations in the context of German farmers' protests has further politicized this issue. Instead of facilitating policy change, policy elites have established discursive hegemony under these heightened levels of politicization. This has triggered a backlash against previously announced changes. Our data further illustrate that in the German case, hyper-politicization significantly constrained the influence of emerging green discourses.

Moreover, our data reveal that this backlash coincides with the infiltration of farmer protests and the growing presence of right-wing actors in agri-food policy discourse networks, as illustrated in T2.2. Alongside the emergence of green ideas and interests that have been discussed widely in post-exceptionalist scholarship (e.g., Daugbjerg & Feindt, 2017; Tosun, 2017), we identify an emerging right-wing coalition (Mamonova & Franquesa, 2020; Sheingate, 2021) partially tied to entrenched actors—a phenomenon we term “populist post-exceptionalism.” This aligns with recent studies on climate backlash and policy dismantling, which involves the reversal of existing decarbonization policies (Förell & Fischer, 2025; Schaub et al., 2024). Future research should explore the emergence, dynamics, and impacts of right-wing networks at both national and EU levels, including how these seek to co-opt protests and influence both discourse and policy outcomes.

In a broader sense, our study advances research on the politics of environmental networks in two ways. First, we examine how actors' interests and beliefs shape interactions—ranging from cooperation to conflict over

land use—and how these dynamics influence policy formulation (Brockhaus & Di Gregorio, 2014). Second, we advance discourse network analysis studies in climate change policy (Durel & Gosselin, 2024; Kukkonen et al., 2021).

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Conflict of Interests

The authors declare no conflict of interests.

Supplementary Material

Supplementary material for this article is available online in the format provided by the authors (unedited).

References

- Alons, G. (2017). Environmental policy integration in the EU's Common Agricultural Policy: Greening or greenwashing? *Journal of European Public Policy*, 24(11), 1604–1622. <https://doi.org/10.1080/13501763.2017.1334085>
- Ampel darf 60 Milliarden Euro nicht verschieben. (2023, November 15). *Tagesschau*. <https://www.tagesschau.de/inland/bundesverfassungsgericht-schuldenbremse-102.html>
- Bang, H., & Marsh, D. (2018). Populism: A major threat to democracy? *Policy Studies*, 39(3), 352–363. <https://doi.org/10.1080/01442872.2018.1475640>
- Bauern wollen “Kampfansage” der Ampel annehmen. (2023, December 18). *ntv*. <https://www.n-tv.de/politik/Bauern-wollen-Kampfansage-der-Ampel-annehmen-article24608498.html>
- Boasson, E. L., & Huitema, D. (2017). Climate governance entrepreneurship: Emerging findings and a new research agenda. *Environment and Planning C: Politics and Space*, 35(8), 1343–1361. <https://doi.org/10.1177/2399654417730713>
- Brandes, U., & Wagner, D. (2004). Analysis and visualization of social networks. In M. Jünger & P. Mutzel (Eds.), *Graph drawing software* (pp. 321–340). Springer.
- Brockhaus, M., & Di Gregorio, M. (2014). National REDD+ policy networks: From cooperation to conflict. *Ecology and Society*, 19(4), Article 14. <https://doi.org/10.5751/ES-06643-190414>
- Broekema, W. (2016). Crisis-induced learning and issue politicization in the EU: The *Braer*, *Sea Empress*, *Erika*, and *Prestige* oil spill disasters. *Public Administration*, 94(2), 381–398. <https://doi.org/10.1111/padm.12170>
- Daugbjerg, C., & Feindt, P. H. (2017). Post-exceptionalism in public policy: Transforming food and agricultural policy. *Journal of European Public Policy*, 24(11), 1565–1584. <https://doi.org/10.1080/13501763.2017.1334081>
- De Wilde, P. (2011). No polity for old politics? A framework for analyzing the politicization of European

- integration. *Journal of European Integration*, 33(5), 559–575. <https://doi.org/10.1080/07036337.2010.546849>
- De Wilde, P., & Zürn, M. (2012). Can the politicization of European integration be reversed? *JCMS: Journal of Common Market Studies*, 50, 137–153.
- Deutscher Bauernverband. (2024). *Situationsbericht 2024/25. Fakten zur wirtschaftlichen Lage der Landwirtschaft*. <https://www.situationsbericht.de/inhalt>
- Dolezal, M., Hutter, S., & Becker, R. (2016). Protesting European integration: Politicisation from below? In S. Hutter, E. Grande, & H. Kriesi (Eds.), *Politicising Europe* (1st ed., pp. 112–134). Cambridge University Press. <https://doi.org/10.1017/CBO9781316422991.006>
- Durel, L., & Gosselin, L. (2024). Timely climate proposals. Discourse networks and (dis) continuity in European policies. *Journal of European Public Policy*, 31(11), 3839–3866.
- European Commission. (2022). *Farms and farmland in the European Union—Statistics*. Eurostat. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Farms_and_farmland_in_the_European_Union_-_statistics
- Faling, M., & Biesbroek, R. (2019). Cross-boundary policy entrepreneurship for climate-smart agriculture in Kenya. *Policy Sciences*, 52(4), 525–547. <https://doi.org/10.1007/s11077-019-09355-1>
- Faling, M., Biesbroek, R., & Karlsson-Vinkhuyzen, S. (2018). The strategizing of policy entrepreneurs towards the global alliance for climate-smart agriculture. *Global Policy*, 9(3), 408–419. <https://doi.org/10.1111/1758-5899.12547>
- Feindt, P. H., Schwindenhammer, S., & Tosun, J. (2021). Politicization, depoliticization and policy change: A comparative theoretical perspective on agri-food policy. *Journal of Comparative Policy Analysis: Research and Practice*, 23(5/6), 509–525. <https://doi.org/10.1080/13876988.2020.1785875>
- Finger, R., Fabry, A., Kammer, M., Candel, J., Dalhaus, T., & Meemken, E. M. (2024). Farmer protests in Europe 2023–2024. *EuroChoices*, 23(3), 59–63. <https://doi.org/10.1111/1746-692X.12452>
- Förell, N., & Fischer, A. (2025). Climate backlash and policy dismantling: How discursive mechanisms legitimised radical shifts in Swedish climate policy. *Environmental Policy and Governance*. Advance online publication. <https://doi.org/10.1002/eet.2160>
- Fuchs, C., & Pausch, R. (2024, January 10). Wer organisierte die Blockade gegen Habeck? *ZEIT Online*. <https://www.zeit.de/politik/deutschland/2024-01/bauern-schluettsiel-habeck-rechte-demonstration>
- Grohmann, P., & Feindt, P. H. (2024). Realigning state-farmer relations in agricultural post-exceptionalism: Direct payment implementation in the Common Agricultural Policy post-2022 in Germany. *Journal of Rural Studies*, 110, Article 103363. <https://doi.org/10.1016/j.jrurstud.2024.103363>
- Heinze, R. G., Bieckmann, R., Kurtenbach, S., & Küchler, A. (2021). Bauernproteste in Deutschland: Aktuelle Einblicke und politische Verortung. *Forschungsjournal Soziale Bewegungen*, 34(3), 360–379. <https://doi.org/10.1515/fjsb-2021-0035>
- Hobbis, G., Esteve-Del-Valle, M., & Gabdulhakov, R. (2023). Rural media studies: Making the case for a new subfield. *Media, Culture & Society*, 45(7), 1489–1500. <https://doi.org/10.1177/01634437231179348>
- Hutter, S. (2016). Methodological appendix: Measuring politicisation, benchmarks and data. In S. Hutter, E. Grande, & H. Kriesi (Eds.), *Politicising Europe* (1st ed., pp. 301–313). Cambridge University Press. <https://doi.org/10.1017/CBO9781316422991.013>
- Hutter, S., & Kriesi, H. (2019). Politicizing Europe in times of crisis. *Journal of European Public Policy*, 26(7), 996–1017. <https://doi.org/10.1080/13501763.2019.1619801>
- Intergovernmental Panel on Climate Change. (2019). *Summary for policymakers*. https://www.ipcc.ch/site/assets/uploads/sites/4/2019/12/02_Summary-for-Policymakers_SPM.pdf

- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. (2019). *Global assessment report on biodiversity and ecosystem services* (Version 1). <https://doi.org/10.5281/ZENODO.3831673>
- Kafsack, H. (2024, January 31). Brüssel gibt Bauernprotesten nach. *Frankfurter Allgemeine*. <https://www.faz.net/aktuell/wirtschaft/klima-nachhaltigkeit/eu-gibt-bauernprotesten-nach-bauern-koennen-gesamtes-ackerland-nutzen-19487407.html>
- Kenny, M., & Luca, D. (2021). The urban–rural polarisation of political disenchantment: An investigation of social and political attitudes in 30 European countries. *Cambridge Journal of Regions, Economy and Society*, 14(3), 565–582.
- Knudsen, A.-C. L. (2011). *Farmers on welfare: The making of Europe's Common Agricultural Policy*. Cornell University Press.
- Kriesi, H., Tresch, A., & Jochum, M. (2007). Going public in the European Union: Action repertoires of Western European collective political actors. *Comparative Political Studies*, 40(1), 48–73. <https://doi.org/10.1177/0010414005285753>
- Kukkonen, A., Stoddart, M. C., & Ylä-Anttila, T. (2021). Actors and justifications in media debates on Arctic climate change in Finland and Canada: A network approach. *Acta Sociologica*, 64(1), 103–117.
- Leifeld, P. (2017). Discourse network analysis: Policy debates as dynamic networks. In J. N. Victor, A. H. Montgomery, & M. Lubell (Eds.), *The Oxford handbook of political networks* (pp. 301–326). Oxford University Press.
- Leifeld, P. (2020). Policy debates and discourse network analysis: A research agenda. *Politics and Governance*, 8(2), 180–183. <https://doi.org/10.17645/pag.v8i2.3249>
- Leifeld, P. (2024). *Discourse network analyzer* (Version 3.0.11) [Computer-Software]. <https://github.com/leifeld/dna>
- Mamonova, N., & Franquesa, J. (2020). Populism, neoliberalism and agrarian movements in Europe. Understanding rural support for right-wing politics and looking for progressive solutions. *Sociologia Ruralis*, 60(4), 710–731. <https://doi.org/10.1111/soru.12291>
- Marquardt, J., & Lederer, M. (2022). Politicizing climate change in times of populism: An introduction. *Environmental Politics*, 31(5), 735–754. <https://doi.org/10.1080/09644016.2022.2083478>
- Matthews, A. (2023). An ambitious CAP is needed to underpin the green transition. *Recht der Landwirtschaft*, 75(11/12), 290–297.
- Meijerink, S., & Huitema, D. (2010). Policy entrepreneurs and change strategies: Lessons from sixteen case studies of water transitions around the globe. *Ecology and Society*, 15(2), Article 21.
- Nagel, M. (2024). *Farmers' protest* (Version 1.0) [Data set]. Universität Heidelberg.
- Nagel, M., & Bravo-Laguna, C. (2022). Analyzing multi-level governance dynamics from a discourse network perspective: The debate over air pollution regulation in Germany. *Environmental Sciences Europe*, 34(1), Article 62. <https://doi.org/10.1186/s12302-022-00640-0>
- Nagel, M., & Schäfer, M. (2023). Powerful stories of local climate action: Comparing the evolution of narratives using the “narrative rate” index. *Review of Policy Research*, 40(6), 1093–1119. <https://doi.org/10.1111/ropr.12545>
- Pe'er, G., Zinngrebe, Y., Moreira, F., Sirami, C., Schindler, S., Müller, R., Bontzorlos, V., Clough, D., Bezák, P., Bonn, A., Hansjürgens, B., Lomba, A., Möckel, S., Passoni, G., Schleyer, C., Schmidt, J., & Lakner, S. (2019). A greener path for the EU Common Agricultural Policy. *Science*, 365(6452), 449–451. <https://doi.org/10.1126/science.aax3146>
- Rivera-Ferre, M. G. (2020). From agriculture to food systems in the IPCC. *Global Change Biology*, 26(5), 2731–2733. <https://doi.org/10.1111/gcb.15022>

- Rodríguez-Pose, A. (2018). The revenge of the places that don't matter (and what to do about it). *Cambridge Journal of Regions, Economy and Society*, 11(1), 189–209.
- Schaub, S. (2021). Public contestation over agricultural pollution: A discourse network analysis on narrative strategies in the policy process. *Policy Sciences*, 54(4), 783–821. <https://doi.org/10.1007/s11077-021-09439-x>
- Schaub, S., Tosun, J., & Jordan, A. J. (2024). Climate action through policy expansion and/or dismantling: Country-comparative insights: An introduction to the special issue. *Journal of Comparative Policy Analysis: Research and Practice*, 26(3/4), 215–232. <https://doi.org/10.1080/13876988.2024.2369640>
- Sheingate, A. D. (2021). The rise of the agricultural welfare state: Institutions and interest group power in the United States, France, and Japan. In A. D. Sheingate (Ed.), *The rise of the agricultural welfare state* (pp. 1–32). Princeton University Press.
- Skogstad, G. (1998). Ideas, paradigms and institutions: Agricultural exceptionalism in the European Union and the United States. *Governance*, 11(4), 463–490. <https://doi.org/10.1111/0952-1895.00082>
- Tosun, J. (2017). Party support for post-exceptionalism in agri-food politics and policy: Germany and the United Kingdom compared. *Journal of European Public Policy*, 24(11), 1623–1640. <https://doi.org/10.1080/13501763.2017.1334083>
- Tosun, J., Schaub, S., Marek, C., Kellermann, L., & Koch, M. A. (2024). Attributing responsibility to farmers for environmental protection and climate action: Insights from the European Union. *Journal of Environmental Studies and Sciences*. Advance online publication. <https://doi.org/10.1007/s13412-024-00981-7>
- van Der Ploeg, J. D. (2020). Farmers' upheaval, climate crisis and populism. *The Journal of Peasant Studies*, 47(3), 589–605. <https://doi.org/10.1080/03066150.2020.1725490>
- Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen. (2020). *Landwende im Anthropozän: Von der Konkurrenz zur Integration*. https://www.wbgu.de/fileadmin/user_upload/wbgu/publikationen/hauptgutachten/hg2020/pdf/WBGU_HG2020.pdf

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Germany's Energy and Climate Policy as an Ecology of Games

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Abstract

This article analyses a key shift in German energy and climate policy. Following the Fukushima disaster in Japan, the German government decided to shut down eight old nuclear reactors in the short term, and to phase-out the remaining reactors within the next seven years. At the same time, its ambitious climate policy goals relied on energy security through a growing share of renewable energies, an expanded energy grid, improved energy efficiency, and technological innovations, as well as the use of natural gas as a so-called “bridging technology.” In this context, this article provides an overview of competing explanations circulating in the political and social science literature for this path-breaking policy shift, and demonstrates how network analysis can be used to offer an alternative explanation—one in which this policy shift was decisively shaped by both the structural context and situational dynamics.

Keywords

climate policy; energy policy; issue competition; social network analysis

1. Introduction

German energy and climate policy, and its intersection with political processes, generate intriguing dynamics. Since the 1990s, Germany has been a pioneer of climate policy, but its leading position had declined by the mid-2010s. A critical turning point was Germany's decision in 2011 to phase out nuclear energy following the Fukushima disaster in Japan. While several countries tightened safety regulations and temporarily suspended nuclear operations, only a few opted for long-term phase-outs. Germany's response to Fukushima was exceptional in its speed, legal finality, and scale, marking a paradigm shift in energy production, governance, and justification, breaking with the pro-nuclear, fossil-based consensus, and sending ripple effects across Europe and global climate debates. The immediate shutdown of eight reactors and the legally binding commitment to exit nuclear energy by 2022 constituted one of the most far-reaching

shifts in nuclear policy among industrialized countries. Even Japan, despite the accident occurring on its own soil, eventually resumed nuclear power generation after a temporary suspension (Rinscheid, 2015; Rinscheid et al., 2020).

The *Energiewende* (energy transition), as it is known in Germany, is not merely a retreat from one energy source, but a strategic transformation of the entire energy system. Some have even characterized this shift as an “ecological modernization” to emphasize the scale of this social and industrial transformation (Jänicke & Jörgens, 2023). It was certainly a broad-based policy change that encompassed several policy areas. Following the phase-out decision, a series of new policy packages were adopted: replacing nuclear energy and fossil fuels with renewable energies; expanding the power grid; and promoting energy efficiency through building insulation, electricity savings, and massively promoting research and development (R&D) in the climate and energy sector (the author was involved in one of these projects: Brohmann et al., 2012). An important component of the new policy was the increased use of natural gas as a “bridge technology,” with the side effect of a growing dependence on Russian natural gas. Russia then attempted to use this dependence to influence German foreign policy in the wake of its invasion of Ukraine in 2022. In the resulting energy crisis, the German government was forced to make a series of adjustments—such as the use of liquefied natural gas (LNG) and a change of course with regard to the use of carbon capture and storage (CCS) technologies in some economic sectors—that would have been unthinkable just a few years ago.

From a climate policy perspective, it is difficult to understand why a country would completely abandon a carbon-neutral energy source like nuclear power, when it was still heavily dependent on some of the worst climate killers, such as lignite and hard coal. When Germany proclaimed that it would phase out coal in 2019, only eight years after announcing the nuclear phase-out, a *Wall Street Journal* editorial called it “the world’s dumbest energy policy” (Editorial Board of The Wall Street Journal, 2019). The nuclear exit presented Germany with a dilemma due to the different orientational logics of the two policy areas: energy policy scores with a comprehensive, secure, and affordable energy supply, while climate policy scores primarily on reducing greenhouse gas (GHG) emissions, although adaptation targets have also been added recently.

The aim of this analysis is to explain Germany’s systemic policy turnaround of 2011 in its situational and structural context, using policy network analysis within the “ecology of games” interpretative frame. The study adopts a mixed-methods perspective that integrates qualitative case study analysis with quantitative network analysis and the visual representation of time series (Sale et al., 2002; Teddlie & Tashakkori, 2009). The case study approach provides contextual depth and historical nuance, enabling a detailed understanding of developments within two policy domains as well as broader political dynamics at the macro level. Network analysis complements this by uncovering relational structures and patterns of interaction among actors. To trace changes over time, time series highlight temporal developments and key events. Together, these methods offer a comprehensive analytical framework that bridges interpretive insight and structural explanation.

In the next section, the policy turnaround is first specified in more detail as the central research question. Section 3 presents a variety of competing explanations for this policy shift, providing the background for an explanatory framework in Section 4, which combines some of these approaches and tests them with network data. The final section summarizes the most important findings, discusses some limitations of the analysis, and offers an outlook on the climate and energy policy of the newly elected government.

2. Germany's *Energiewende* as a Policy Puzzle

The 2011–2012 energy transition in Germany presents a compelling puzzle. It marked a paradigmatic shift, as nuclear energy was still Germany's leading electricity source at the time. In 2011, the main sources were nuclear (28%), lignite (25%), and hard coal (18%; IEA, 2024). Just a few years earlier, the government had launched a climate strategy focused on renewables and emissions reduction. The 2011 phase-out commitment reversed decades of nuclear policy, and the *Energiewende* established a new paradigm combining climate protection, renewable expansion, and efficiency. It redefined energy security by favouring decentralization, renewables, and citizen participation over centralized fossil–nuclear systems.

The trigger for the policy turnaround was a natural and technological disaster. On 11 March 2011, one of Japan's worst earthquakes occurred with a magnitude of 9.0. This triggered a tsunami that not only destroyed large parts of the coast but also led to a meltdown at the Fukushima nuclear power plant. This reignited the global debate on the safety of nuclear energy, prompting Germany to dramatically reorient its energy policy amid intense media coverage (Kepplinger & Lemke, 2016). A few months later, the German government decided to phase out nuclear energy completely by 2022. This was not the first such decision. In the late 1990s, a red–green coalition had already agreed on a gradual nuclear exit with reactor lifetime limits. That plan was reversed shortly before Fukushima, when a new governmental coalition between the Christian Democratic Union (CDU) and its Bavarian affiliate (CSU) with the Free Democratic Party (FDP) extended operating times—a move widely seen as an “exit from the exit.” The 2011 reversal marked a more radical shift than the original decision and became known as the *Energiewende*, a term that had circulated in environmentalist circles since the 1980s (Renn & Marshall, 2016; Schreurs, 2012).

The policy reversals following the Fukushima disaster were not an isolated response to energy security concerns, but part of a broader paradigm shift that not only linked energy and climate policy but increasingly integrated them. The accelerated phase-out of nuclear energy was in line with the 2010 Energy Concept, which set the course for a low-carbon future by promoting energy efficiency and renewable energies. The strategic shift linked decarbonization and sustainable energy policy, thereby transforming Germany's approach to governing the once separate areas of energy and climate policy into a more integrated framework, which was strongly supported by developments at the EU level (Rogge & Johnstone, 2017; Szulecki et al., 2016; Tews, 2015).

In the aftermath of the 2011 decision, the German federal government launched a series of legislative reforms and policy instruments designed to operationalize this integrated approach. These included substantial public programmes as well as voluntary agreements with industry to foster innovation and investment in sustainable energy technologies. The continuity of this policy trajectory was reaffirmed after the 2013 federal election, which resulted in the formation of a new grand coalition between the CDU/CSU, and the Social Democratic Party (SPD). Key measures enacted during this period included: the legally binding phase-out of nuclear power by 2022; an amendment to the EEG to ensure continued support for renewables; the adoption of the National Action Plan for Energy Efficiency; the expansion of renewable electricity generation and the development of reserve power capacities; a ban on hydraulic fracturing (“fracking”) for oil extraction; and the designation of natural gas as a bridging technology to facilitate the energy transition. The unwavering commitment to phasing out nuclear power and the actual shutdown in 2022—despite the acute energy crisis triggered by Russia's war against Ukraine—astonished international observers and sparked sharp criticism abroad. A Wall

Street Journal editorial characterized the decision as a deliberate worsening of the crisis, emphasizing the paradox that Germany, in the name of environmentalism, chose to shut down its last nuclear reactors while ramping up coal power production (Editorial Board of The Wall Street Journal, 2022). This move, which defied both economic pressures and energy security arguments, can be understood less as a rational response to short-term supply shocks and more as a reflection of the Green Party's enduring ideological opposition to nuclear energy. Opposition to nuclear power has long served as a foundational element of Green identity, and this ideational commitment—rooted in post-Fukushima political consensus—proved resilient even under extraordinary geopolitical and economic duress.

Together, these developments underscore the extent to which the 2011 policy shift represented not a reactive intervention but a comprehensive reorientation of Germany's energy and climate governance architecture. In summary, the energy transition phased out nuclear power while accelerating renewables, energy efficiency, and innovation.

Figure 1 provides a timeline illustrating the development of German energy and climate policy across six dimensions, also highlighting other important events. The time series on the Climate Policy Performance Index (CPPI) shows that climate policy performance deteriorated significantly between 2012 and 2021. Climate policy only returned to the top of the policy agenda towards the end of the decade when environmental movements raised public awareness of global warming, even prompting the German constitutional court to call on the federal government to do more for climate protection.

The time series in Figure 1 encompasses the entire policy cycle, from the input side of topic salience to the outputs and outcomes in these policy areas:

- *Politbarometer* surveys, conducted for many decades by Forschungsgruppe Wahlen, describe issue salience as the percentage of respondents who consider the topic to be important relative to other issues (for data and methodology, see <https://www.gesis.org/wahlen/politbarometer> and the Annex available at <https://github.com/vsunikon>).
- Policy events indicate a fluctuating number of annual measures in Germany (laws, regulations, programmes, etc.) that have been registered by a climate policy database (Nascimento et al., 2022).
- Energy efficiency looks at GHG emissions (mostly CO₂) in relation to economic development (using GDP). Emissions have fallen steadily in recent decades despite GDP growth, indicating rising energy efficiency (AGEB, 2023).
- The share of fossil fuels in primary energy consumption, an important climate policy indicator for reducing GHG emissions, fell continuously for many years and then rose again temporarily around 2010. (AGEB, 2023).
- The CPPI scores Germany's climate policy in comparison to about 60 countries (for data and methodology, see <https://www.germanwatch.org/en> and the Annex previously mentioned).
- The development of electricity prices shows an important output effect of energy policy—one that made Germany one of the most expensive countries in Europe with respect to end consumer electricity prices (for data and methodology, see: <https://ec.europa.eu/eurostat/de>).

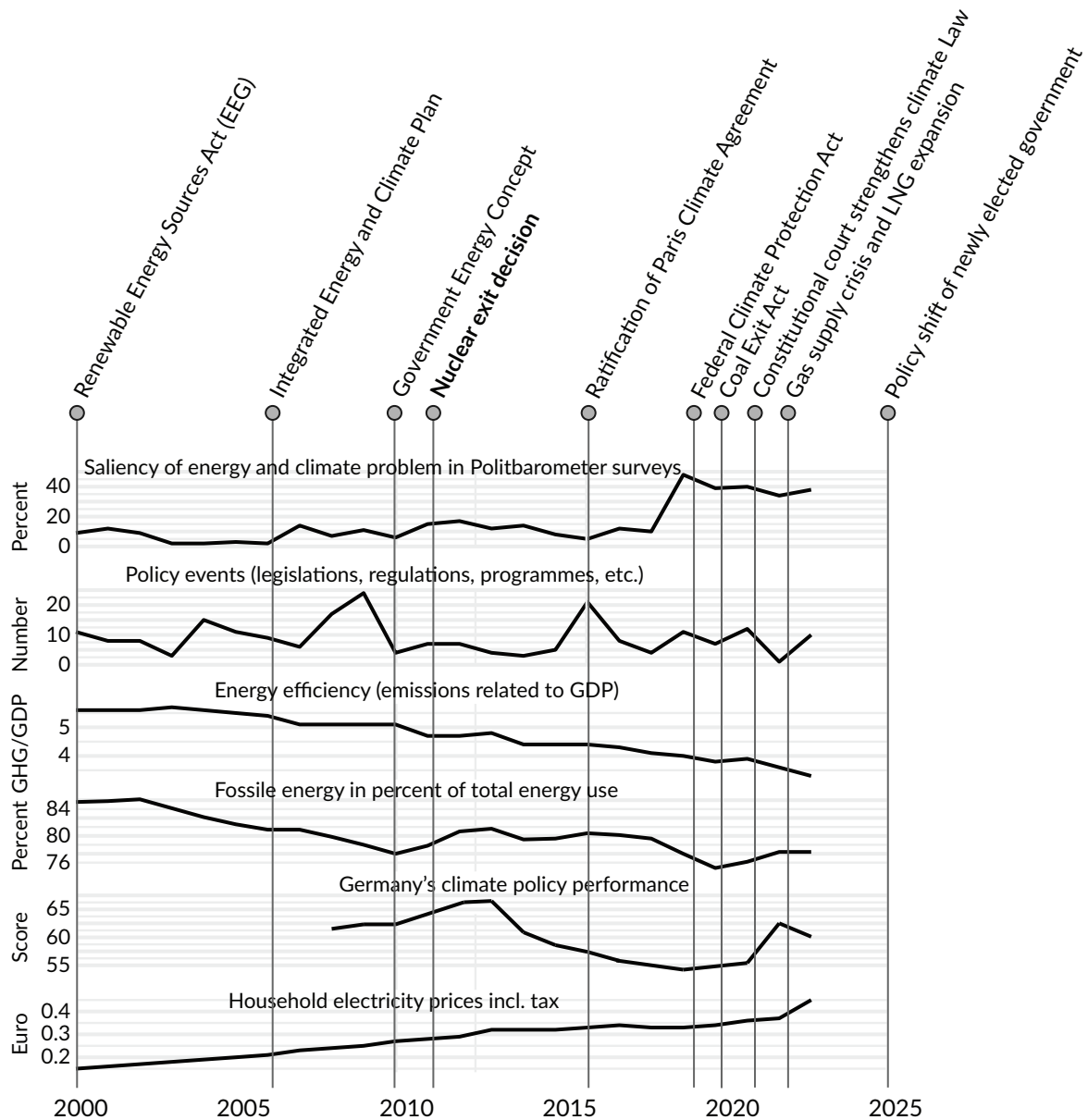


Figure 1. German energy and climate policy events and indicators 2000–2022.

The nuclear phase-out decision and subsequent energy transition policies constituted a Copernican change in energy and climate policy-making. In climate policy, Germany has never been at the top in international comparisons. Its CPPI came close to frontrunners Sweden and Denmark in 2012 and 2013, but then fell back again between 2014 and 2021. The increased proportion of natural gas in the German energy mix and its increasing displacement of lignite improved the emissions balance but led to a growing geo-economic dependence on Russia, which tried to weaponize this relationship after invading Ukraine. The two Nord Stream pipelines played an important role in this. As a result of Russia's full-scale invasion of Ukraine and the sanctions imposed in response, a significant portion of the EU's fuel had to be replaced by coal and more emission-intensive LNG to ensure energy security. Significantly, given this serious situation, the nuclear reactors that were still in operation at the time were shut down.

3. Germany's Copernican Policy Change and Its Explanations

As emphasized at the outset, Germany's energy transition is exceptional among industrialized nations. It is the only major economy to have undergone such a radical policy shift (Jahn & Korolczuk, 2012). It is important to note that the risk of nuclear accidents and the general risk of natural disasters such as earthquakes or tsunamis is relatively low in Germany compared to other OECD countries. Rinscheid et al. (2020) analyse nuclear risk along two dimensions: (a) technical risk (using nuclear energy use per capita) and (b) natural disaster risk (earthquakes, tsunamis, etc., measured using an indicator from the UNDDR). Despite Germany's low risk in both categories, its reaction to Fukushima was the most extreme. The mystery behind this policy change has led to a veritable academic industry analysing this policy change. Many books (Haas, 2017; Radtke & Kersting, 2018; Von Hirschhausen et al., 2018), articles (review articles include Schiffer & Trüby, 2018; Yang, 2022), and even handbooks (Ekardt, 2014; Holstenkamp & Radtke, 2017) cover this policy process. The various explanations for this policy change can be categorized at different levels and across multiple areas, as summarized in Table 1.

Table 1. Explanations of Germany's energy transition 2011.

Levels	Situational explanation	Structural explanation
Political	Coalition-building, political realignment, and Fukushima as a window of opportunity	Historical role of the Green Party and Germany's environmental movements
Ideational	Belief shifts among political elites after intensive media coverage of Fukushima	Long-standing anti-nuclear sentiment and risk perception
Economic	Fukushima-empowered renewable energy lobbies, weakened nuclear interests	Growth of the renewables sector since the 1990s, shifting corporate power
Technical	Fukushima challenged the belief in nuclear safety	Technological evolution and niche innovations promoting green energy

Fukushima transformed nuclear energy into a central election issue, forcing the governing coalition to shift its stance. Some scholars interpret the shift as a case of electoral realignment (Jahn & Korolczuk, 2012; Wittneben, 2012; Zohlnhöfer & Engler, 2014). An in-depth analysis of the decision-making process convincingly shows that eliminating nuclear energy as a political issue from the German policy agenda was an important goal (Tratzmiller, 2018).

Another situational explanation applies the multiple streams approach, arguing that Fukushima created new opportunity structures for long-standing anti-nuclear advocates. The Baden-Württemberg state election, held shortly afterward, served as a critical moment in linking nuclear policy debates to the broader political agenda (Fischer, 2017).

Structurally focused approaches indicate that Fukushima's impact was amplified by long-term shifts in Germany's party system. Since the 1980s, the Green Party and environmental civil society have gained political influence, forming a strong anti-nuclear coalition that shaped the response (Rinscheid et al., 2020; Stefes, 2016).

Explanations also emphasize ideational factors, with some using the Advocacy Coalition Framework (ACF), which highlights belief changes following external shocks (Sabatier, 1988). After Fukushima, the German

pro-nuclear coalition collapsed as key political actors changed their stance overnight (Rinscheid, 2015; Rinscheid et al., 2020). Media discourse further amplified the shift, with Fukushima receiving far more media coverage in Germany than elsewhere (Kepplinger & Lemke, 2016).

Some ideational explanations combine situational and structural components. Studies using the critical threshold approach suggest a broad anti-nuclear coalition that has existed for decades (Stefes, 2016; Weber & Cabras, 2017). In addition, some perspectives emphasize historically influenced cultural peculiarities in risk perception that give rise to the typically German *angst* around technological risks (Biess, 2020).

Some explanations point to economic changes. Fukushima created new lobbying opportunities for renewable energy companies and weakened nuclear and fossil fuel interests (Gründinger, 2017; Strunz, 2014). Notably, even the insurance sector turned against nuclear power, as the disaster reshaped risk assessments (Von Hirschhausen et al., 2018).

Economic transformations are accompanied by sectoral changes, with businesses (in this case) also promoting innovations in renewable energies, creating new interest groups that reinforce these trends through lobbying strategies. A similar explanation draws on neo-Marxist and Gramscian perspectives, stating that the energy transition represents a new hegemonic green-capitalist project (Haas, 2017; Rest, 2011). One study even uncovers a network of transnational corporations promoting global climate capitalism (Sapinski, 2016).

Finally, there are approaches highlighting the technological dimension, from both situational and structural perspectives. Chancellor Merkel framed Fukushima as proof that even an advanced nation like Japan could not fully control nuclear risks (for a repetition and nuanced contextualization of the statement made at that time, see Merkel & Krahmann-Baumann, 2024). This aligns with Perrow's "normal accidents" thesis, which argues that nuclear energy is inherently uncontrollable (Perrow, 1984). In Germany, both Chernobyl and Fukushima solidified public distrust in nuclear power (Beck, 1992; Hoffman & Durlak, 2018).

In addition to this situation-related technological perspective, there is a structural perspective in which energy transition is a long-term trend in socio-technical evolution, where radical niche innovations are important drivers of an overall transformation of the energy system (Geels et al., 2016; Li et al., 2015).

The sketch above shows that the energy transition of 2011 can plausibly be explained and interpreted from many perspectives. While some explanations compete with one another, others complement each other and can therefore be combined. This is the aim of the next section, in which situational and structural explanatory factors are combined into a complex relational explanation supported by network analysis.

4. Connecting Dots and Levels: Networks, Politics, and Nested Policy Games

One of the most popular political approaches is the advocacy coalition model, which offers a rather parsimonious explanation of political change and depicts the political process—somewhat exaggeratedly—as a kind of religious war in which groups of actors with different shared beliefs communicate with each other and form coalitions in favour of (or against) certain political measures, which they then implement once they win (Ingold, 2011; Sabatier, 1988; Satoh, Gronow, et al., 2023). The task of the researcher is then to ascertain which coalition was victorious, along with its relative strength. However, such an explanation

remains superficial if the underlying forces and conditions of coalition-building are not revealed. In our case, two questions arise: First, why was such a large and powerful coalition able to form in Germany in the first place? And, second, why could this policy change be implemented so quickly and radically, overcoming all political and social hurdles? Contrary to the consensus view of the *Energiewende* policy shift, numerous conflicts continued to exist in various areas and at various levels of Germany's complex political system (Chemnitz, 2018). On the other hand, the energy transition of 2011 triggered a radical change that completely contradicts the traditional image of consensus-oriented German politics, with its many veto players and decision-making blockades (Czada & Radtke, 2018; Saalfeld, 2003).

A comprehensive model must thus consider both the situational and structural factors shaping the coalition that implemented the policy switch. Situational factors include actors' issue positions and relational discourse dynamics, while structural factors encompass long-term trends shaping the composition of the actor set and its network relations.

4.1. Policy Networks in an “Ecology of Games” Framework

In the following discussion, the context for this paradigmatic policy shift is conceptualized as a political network where relevant policy actors interact through multiple network ties to jointly address political problems (Kenis & Schneider, 1991; Schneider, 2024). The network nodes are policy actors with significant roles and positions in both energy and climate policy areas. The relations among actors can be direct, such as cooperation or exchange of information, or indirect, such as shared interests, beliefs, or institutional affiliations to policy bodies or social subsystems.

Furthermore, we pursue an ecosystem-inspired perspective in which the network of actors is not subject to a single homogeneous rationality, but rather consists of network segments comprising different “political species” that play distinct roles based on their different interests and institutional positions (Ronit, 2024). A policy network thus integrates facets that are emphasized in complexity theories: a multitude of heterogeneous actors, networked by a variety of relationships that include both conflict and cooperation, whose joint action is structured by complex sets of rules, and who are involved in political problem-solving and decision-making processes (Schneider, 2010, 2012).

This complex situation can be understood as overlapping games in which actors operate across different decision-making contexts and must choose appropriate strategies. Rather than isolated arenas, policy games are nested, interwoven, and mutually permeable. The metaphor of an “ecology of games” aptly captures this complexity (Long, 1958). Emerging from eco-perspectives in the social sciences—such as human, population, and organizational ecology—Norton Long argued that local politics should be seen as a network of intertwined policy processes. He rejected views of centrally controlled politics (e.g., power elite models) and game theory's assumption of unified rationality, instead promoting a heterogeneous perspective. Games are role-typical action contexts oriented toward specific goals, like scoring in football or shooting baskets in basketball. Long (1958) identified multiple local games, such as banking, media, and civic organization games, each with distinct objectives and rules. This perspective has since been applied in various forms, using both qualitative and quantitative methods, to analyse the interdependence of political processes across domains (Cornwell et al., 2003; Dutton et al., 2012; Kimmich et al., 2023; Lubell, 2013).

In his seminal book *Crisis and Choice*, Scharpf (1991) offers a strikingly similar perspective. Analysing West Germany's policy response to the economic crisis of the 1970s, Scharpf conceptualizes economic policymaking as an interplay of games involving fiscal and monetary policy, industrial relations, and electoral competition. Decisions in one domain influence the constraints and opportunities in others. By highlighting how strategic interactions across these institutional arenas shape policy outcomes, Scharpf applies core ideas of the ecology of games approach, where overlapping policy processes evolve in dynamic tension.

Applied to Germany's energy transition, at least three interlinked games can be identified: a climate policy game focused on emissions reduction; an energy policy game ensuring supply security and affordability; and an electoral game in which both are embedded, with parties competing for issue ownership. Policy decisions imply power struggles; even committed policymakers must seek electoral support, often prioritizing power retention over problem-solving. These dynamics are shaped by institutional structures that influence party and interest group behaviour, and by temporal contexts—such as clustered elections in Germany's federalist system—that intensify competition.

By 2011, Germany had evolved into a multiparty system with a strong Green Party and a more pluralistic interest group landscape (Schneider, 2015). Civil society had also gained expertise through independent think tanks and research institutes (Satoh, Nagel et al., 2023). A key driver of the energy transition was the historical strength of the anti-nuclear movement, which the Greens represented in parliament during key decision phases and earlier sustainability reforms (Weidner & Eberlein, 2010; Weidner & Mez, 2008). Institutional features like proportional representation, federalism, and bicameralism also enabled diverse societal interests to shape public policy. Germany's system thus favours inclusive policy networks linking state and civil society actors (Schneider, 2015).

Policy domains can also be viewed as differentiated subsystems involving a division of labour and distinct problem-solving orientations (Mayntz, 1988). Climate and energy policy each follow unique logics, shaped by different histories and institutional settings. Traditional energy policy, handled by the Ministry of Economic Affairs, emphasized security and affordability, especially during the oil crises of the 1970s and 1980s. Climate policy emerged later. Rooted in environmental policy and focused on emission reductions, it gained prominence after Chernobyl with the creation of the Ministry of the Environment in 1986.

Initially centred on coal and oil, German energy policy later embraced nuclear power to enhance security. But anti-nuclear protests of the 1980s and the rise of the Greens led to convergence with environmental concerns. Global environmental awareness and Germany's support for initiatives such as feed-in tariffs and the Kyoto Protocol gave climate policy increasing weight from the late 1980s onward. Under the red-green coalition of the late 1990s, climate and energy policies became more integrated. This period saw the introduction of the Renewable Energy Sources Act and the first nuclear phase-out. A shift occurred under the CDU/FDP coalition in 2009, which extended nuclear plant lifespans, only to reverse course after Fukushima in 2011. This marked a turning point: the launch of the *Energiewende*, which phased out nuclear energy, expanded renewables, and increased dependence on Russian natural gas.

Despite major advances, tensions between the two policy areas persist. The energy policy focus on affordability and security often clashes with climate policy's emission reduction goals. The following political network analysis (Schneider, 2024) reconstructs the interaction of 2011–2012, when these dynamics overlapped in a multi-level ecology of games.

4.2. Germany's Climate and Energy Policy Network and the Energy Transition

As part of an international comparative study (Broadbent, 2016; Ylä-Anttila et al., 2018), we conducted quantitative policy network analysis to identify actor constellations and associated influence structures in German climate policy during this turbulent period. We surveyed the most important actors in this policy field just a few months after the watershed event in Fukushima (from August 2011 to October 2012). Although originally framed from a climate policy perspective, the 2011–2012 actor survey also included key energy policy issues. Despite some thematic bias, the dataset enables an integrated analysis of climate and energy policy by identifying overlapping actor constellations and their positions in the broader issue space.

Following the classic approach of quantitative policy network research (Knoke et al., 1996; Laumann & Knoke, 1987), we surveyed all relevant organizations involved in German climate and energy policy (for details, see the Annex previously mentioned). For boundary specification, we used discourse network analysis based on print media (Schneider & Ollmann, 2013). Of the national actors identified in this process, only 50 were interviewed, and only 48 organizational datasets could be used for this analysis. The full network includes 92 actors, including 42 international organizations. Data was collected on relationships such as influence reputation, collaboration, and information exchange, and on issue perceptions and policy positions, but also on actors' attributes and affiliations with societal sectors.

The network analysis enables both a situational view of issue orientations and a structural view of cooperation and information exchange. Figures 2 and 3 present the results: Figure 2 displays dissimilarities

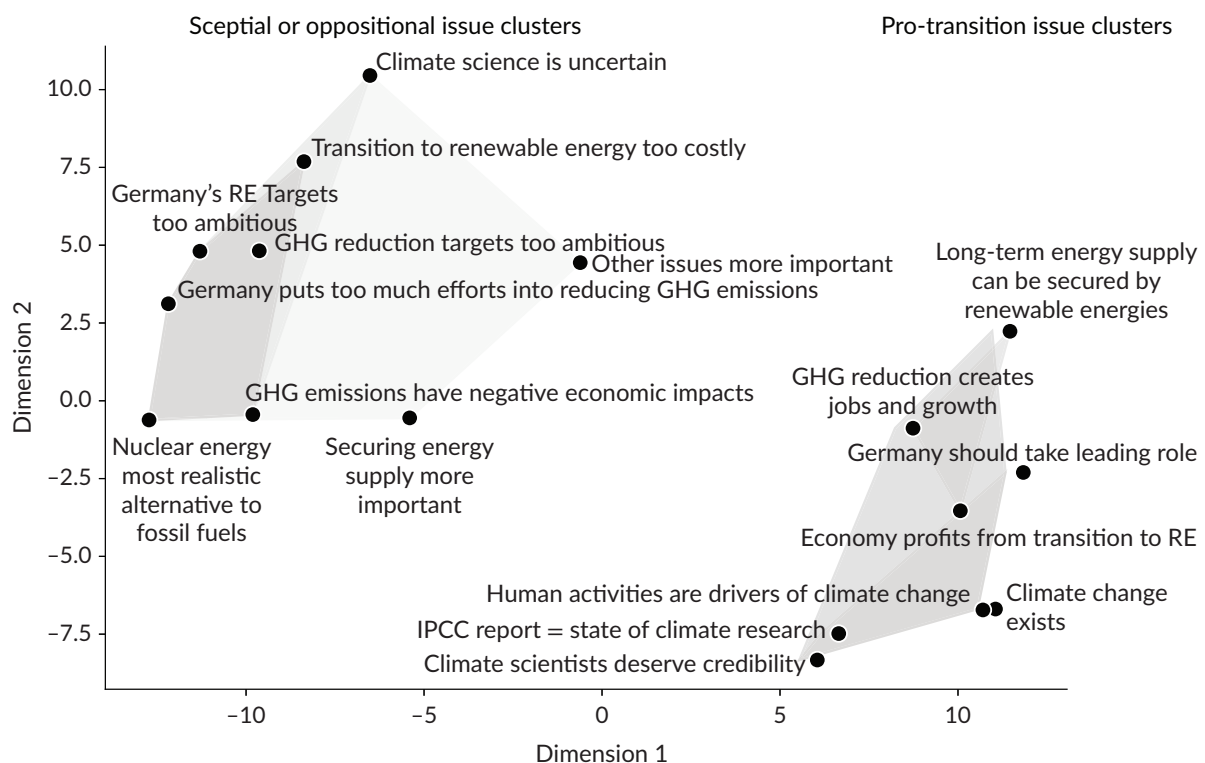


Figure 2. Nested clustering of beliefs and preferences in the energy and climate issue space. Notes: RE = Renewable energy; IPCC = Intergovernmental panel on climate change; methods used: metric multidimensional scaling and clustering based on Ward's minimum variance method.

in issue positions, while Figure 3 links these positions to the information and cooperation network. Figure 2 visualizes the issue space—reflecting beliefs and preferences—using multidimensional scaling (MDS) combined with hierarchical clustering. Multiple cluster levels are shown as nested convex hulls in increasingly darker grayscale, creating a Venn-style diagram that reveals overlaps and groupings. Euclidean distances between topic profiles determine the placement of issue nodes, with proximity indicating similar issue orientations.

Figure 3 maps 48 actors within the same issue space using MDS, based on their thematic positions from Figure 2. Geometric distances reflect the dissimilarity of their issue positions. Lines between actors represent confirmed information exchange, defined as mutual acknowledgement of sending and receiving information. These relationships were identified through matrix transposition and multiplication. Node shapes denote actor categories and node size reflects influence reputation. The constellation of actors and their positions in the issue space, as depicted in both diagrams, reflect the situation between August 2011 and October 2012—the period following intense political and social debates on the nuclear phase-out and the subsequent launch of the energy transition, which was accompanied by a series of further policy choices in the years that followed.

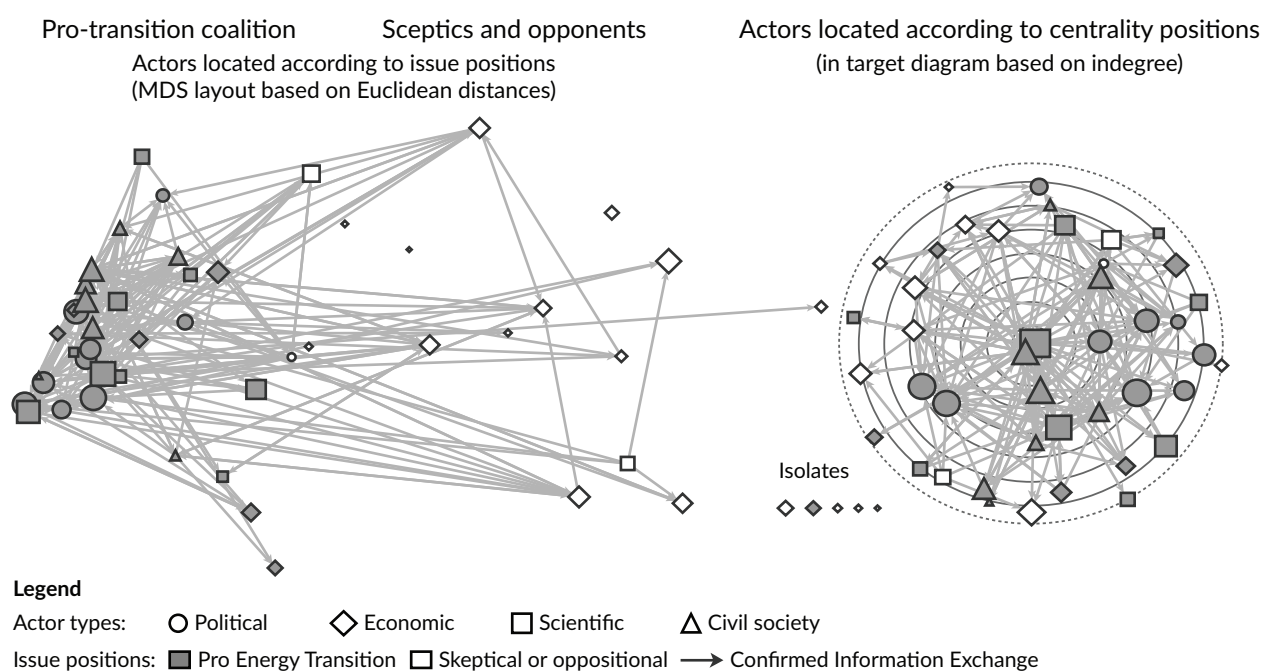


Figure 3. Germany's climate and energy policy: Issue positions and information exchange. Notes: Size of symbols corresponds to eigenvector centrality based on influence reputation; visualized with the help of visone (Brandes & Wagner, 2004).

The actors and their influence are shaped not only by the immediate aftermath of Fukushima but also by broader political, economic, and scientific developments over recent decades. These shifts have transformed Germany's energy mix and consumption patterns, while also reshaping science, civil society, politics, and the economy. Ecological modernization and related R&D programmes have fostered new economic sectors and scientific fields with growing political influence. The expansion of the renewable energy sector has created new interests and centres of power. Notably, the environmental movement and the Green Party have become major political actors at both the federal and state levels. Many organizations from these spheres now play key

roles in the policy network. The impact of these long-term structural dynamics becomes particularly evident when comparing policy networks across countries (Rinscheid et al., 2020; Satoh, Nagel, et al., 2023).

Figure 3 (left side) divides the issue space into two halves, with the pro-energy transition coalition comprising 36 actors on the left. These account for more than three-quarters of the weighted influence reputation based on eigenvector centrality (Bonacich, 1982). This metric assigns higher scores to those endorsed by other influential actors, recursively weighting centrality. While most actors opposed nuclear energy, some dispersed business actors remained sceptical or even oppositional. All political parties supported the phase-out and focus on renewables, though the FDP did not participate in the survey. Industrial and business actors were split between pro and contra positions. Notably, sceptics on the right were less connected than the cohesive pro-transition alliance on the left. The right-hand diagram in Figure 3 shows that nearly all actors are part of the information exchange network, except for five economic actors, all are embedded in a dense web of information exchange. Political and civil society actors occupy central positions, while economic actors—such as trade associations and large firms—tend to be more peripheral.

Both analyses show that not all actors in the policy network supported the new energy transition strategy, but an overwhelming majority did, including almost all parliamentary parties and governmental institutions. Furthermore, many civil society organizations and scientific actors influenced agenda-setting and policy formulation in the new direction (Satoh, Nagel, et al., 2023).

To understand the positional and ideational orientation of this network at this time, it is important to consider the dynamics of political discourse in spring 2011. Based on German press coverage, Haunss et al. (2013), Rinscheid (2015), and Rinscheid et al. (2020) analysed the energy discourse before and after the Fukushima accident using “discourse network analysis” (Leifeld, 2020). This involves examining a two-mode network of political actors and their debated positions, which statements (interpreted either as claims or beliefs) the various actors support or reject. Indirectly, this creates a network of shared statements that can be interpreted as discourse coalitions. Both research teams found a complete reconfiguration of German discourse coalitions after the nuclear disaster. Beforehand, the debate had been polarized, with the CDU/CSU and FDP in favour, the opposition parties, and many civil society organizations opposed to nuclear energy. After Fukushima, almost all actors in government and civil society took an anti-nuclear stance. According to Haunss et al. (2013), the demand for a phase-out became dominant in the discourse because (a) its advocates held central positions in the discourse network, (b) they quickly formulated a coherent and broadly connectable set of claims, and (c) pro-extension actors failed to secure central positions or develop similarly integrative demands. Rinscheid (2015) concludes from his analysis that political mediators also helped to bridge the divide, leading to broad support for the phase-out of nuclear energy by June 2011.

In a recent reanalysis, Haunss and Hollway (2023) provide a formally elegant account of discourse coalition transformation, highlighting micro-mechanisms such as actor prominence, cross-party support, and cluster formation. It concludes that the nuclear phase-out “cannot be explained by factors such as political economy, party politics, or power shifts, but was largely the result of an intense and controversial debate.” Yet this interpretation may overreach what microanalysis can truly explain. A key limitation lies in treating political claims as discrete, observable links between actors and positions, without accounting for why these links change over time. While the model shows when actors support or drop demands, it overlooks the

causal mechanisms behind these shifts. Attributing change solely to discourse risks idealizing communicative interaction à la Habermas. Without considering actors' cognitive, ideological, or strategic reasoning, the model remains descriptively rich but explanatorily thin.

In contrast, Rinscheid et al. (2020) explain the policy shift through changes in beliefs, offering a more robust theoretical account that incorporates political feedback and ideational learning. The German government's repositioning is attributed to belief changes among key actors, notably Chancellor Angela Merkel, Markus Söder (then Bavarian Environment Minister, now CSU Chairman), Christian Lindner (FDP Chairman), Stephan Mappus (then Baden-Württemberg Minister-President), and Norbert Röttgen (then Federal Environment Minister).

In an in-depth analysis based on interviews with high-ranking experts (Tratzmiller, 2018), Markus Söder is also cited as one of the leading voices calling for an immediate moratorium, and one is tempted to interpret this as policy learning. In retrospect, however, the diagnosis of Söder's change of heart seems implausible, as the "master of political U-turns" changed his convictions several times in the years that followed. These switches always took place before important elections, depending on the opinion polls (Westenberger & Schneider, 2022). Without direct access to the thinking of key politicians, it remains unclear whether their repositioning reflected genuine policy learning or electoral strategy amid a changing media landscape. Given the general strategic orientations of these figures—as discussed in German political science over the past decade—the interest-driven "issue competition" thesis appears more plausible than idea-based learning. Tratzmiller's analysis supports this view and concludes that the decision to phase out nuclear energy was due to the fact that the Greens had made nuclear energy a central campaign issue and the government had to respond in this situation of issue competition.

From the perspective of issue competition theory, nuclear energy has long been the core issue for the German Greens. After Chernobyl, rising public concern over nuclear risks helped them gain entry to the Bundestag. Fukushima brought the issue back to the forefront of political debate. The coalition for phasing out nuclear power was thus not only a situational response but also the outcome of a long-standing process in which the Greens held "issue ownership"—a key factor in Germany's increasingly fragmented party system, and its federal structure with frequent state elections (Spoon et al., 2014; Westenberger & Schneider, 2022).

Green issues came to the fore during these years, not only in the conflict over nuclear energy, but also in a local conflict over the large railway station project Stuttgart 21, which had important environmental and national implications (Nagel & Satoh, 2019). On 27 March, around two weeks after the Fukushima disaster, state elections were held in Baden-Württemberg in which the combination of Stuttgart 21 and the new nuclear policy of the CDU/FDP coalition at the federal level led to a landslide defeat for the incumbents. After 58 years of governing in this federal state, the CDU became the opposition to a new government led by the Greens and the SPD (Keil & Gabriel, 2012).

Campaign and issue competition motives were also examined by Haunss et al. (2013), who queried whether the nuclear phase-out aimed to save the CDU in Baden-Württemberg's state election. This was dismissed, arguing that state elections were secondary for federal strategy. However, Angela Merkel's autobiography offers a more nuanced view (Merkel & Krahnmann-Baumann, 2024). She explicitly mentions the upcoming state elections and the symbolic 45-kilometre human chain between Stuttgart and the Neckarwestheim nuclear

plant. Describing a climate in which “we can’t just carry on as before” (Merkel & Krahmann-Baumann, 2024, p. 577), she highlights the urgency of responding to growing public concern—this suggests that also electoral dynamics did play a role.

Particularly revealing is her reference to the report by the Ethics Commission for a Safe Energy Supply, which she had appointed. The report, entitled *Germany’s Energy Transition—A Collective Project for the Future*, emphasizes that nuclear risk assessments should not be limited to technical dangers but must also consider the consequences for the social climate: “One subject of ethical judgment must also be the consequences that result from a poisonous social climate, which has a justifiable place in nuclear energy discussions in Germany” (cited in Merkel & Krahmann-Baumann, 2024, p. 580).

Merkel’s decision thus appears not only as a response to reactor safety but also as a communicative strategy to restore political legitimacy and social cohesion. In this light, it is difficult to maintain that electoral strategy played no role. Merkel’s account suggests that nuclear energy had become electorally toxic. Given high issue salience and partisan competition, neutralizing the Greens’ central issue became essential for future electoral viability. This approach was later described as “asymmetrical demobilization” (Decker & Adorf, 2018, p.10)—a strategy to weaken or remove issues that energize political opponents (Faas, 2015; Jung, 2019).

In summary, the structural description of issue positions in the policy network presented here does not contradict Haunss et al.’s (2013) description, nor that presented by Rinscheid (2015) or Rinscheid et al.’s (2020) research group. Most stakeholders supported the 2011 nuclear phase-out, with only a few dissenting voices. The positions in Figure 3 reflect the political and societal majority during that period (August 2011–October 2012), which only began to shift a decade later. While these positions may reflect the Copernican policy shift, the overall constellation is not merely situational. The composition of the policy topic’s actor set, their influence reputation, and patterns of cooperation and information exchange are more structural and enduring aspects of the policy network. They illustrate how, in Germany’s intertwined energy and climate policy systems, a broad array of public and private actors is engaged in problem-solving. Civil society and scientific organizations occupy central positions, while many economic actors appear more peripheral.

4.3. Information Exchange as the Backbone of the German Policy Complex

From this perspective, our network analysis offers insights into Germany’s “policy-making engine room,” identifies the relevant actors, and highlights information exchange as the backbone of this complex system of political interaction. By relating actors’ positions on the issues to the exchange of information, we can check whether information exchange is more likely to occur between actors with similar beliefs or policy positions than between opposing coalitions or groups. This is ultimately the central hypothesis of the ACF, according to which information exchange facilitates coalition-building (Satoh, Gronow, et al., 2023). This allows us to check whether the exchange of information was a result of the specific situation after Fukushima, or whether it was independent of the actors’ issue positions and thus a more permanent infrastructure of political interaction. A look at Figure 3 shows that the AFC hypothesis is not supported by the data. Although the analysis is restricted to confirmed information exchange, both visualizations indicate that almost all actors participate in information exchange, even those who hold opposing positions. This is also largely consistent with observations made in other analyses of German policy networks, in which

information exchange relationships are strongly explained by the institutionally supported opportunity structures of the consensus-democratic political system (Leifeld & Schneider, 2012; Schneider, 2015). Interestingly, the later decision to phase out coal in Germany was also the result of a highly inclusive deliberative process. A specially convened commission brought together representatives from politics, industry, trade unions, environmental organizations, and academia to develop a broadly supported roadmap for the coal exit (Reitz, 2024).

Since the similarity of issue positions does not appear to be a decisive factor for information exchange, it is interesting to estimate the probabilities of information exchange and its determinants more systematically. To identify the factors influencing the probability of information exchange between network actors, we applied Exponential Random Graph Models (ERGM), a special regression method for network data (Cranmer et al., 2020; Leifeld & Schneider, 2012) implemented in the *statnet* package in *R* (Hunter et al., 2008). This method takes autocorrelation and multicollinearity in network data into account while integrating node attributes and relational structures into the modelling under control of endogenous network dependencies. Inspired by random graph simulation, ERGMs capture common structural patterns such as preferred connectivity, homophily, transitivity, clustering, and reciprocity. These models estimate the probability of tie formation—analogue to logistic regression—based on node characteristics, edge covariates, and network structures, and provide interpretable coefficients as log odds ratios (see <https://github.com/vsunikon> for further details).

The relationships were examined using three models: a basic, full, and reduced model. All models use the same binary dependent variable—mutually confirmed information exchange between actors in the climate–energy policy network. The basic model includes only the edges term to control for network density. The full model adds endogenous structural effects—mutuality, indegree popularity, and triadic closure—as well as edge covariates capturing external relational structures: issue similarity, collaboration, and advice ties. The reduced model excludes statistically insignificant covariates from the full model for greater parsimony. Each model reports coefficient estimates with standard errors, alongside diagnostics such as Markov Chain Monte Carlo (MCMC) convergence and goodness-of-fit (GoF) statistics to assess model fit. While the GoF statistics in the Annex (previously mentioned) indicate that the models reproduce key structural features of the observed network reasonably well, some deviations remain. Despite some limitations in model fit, as is common in complex network structures, the dataset has already supported robust findings in prior publications in respected journals (Karimo et al., 2022; Satoh, Nagel et al., 2023; Wagner et al., 2023).

Figure 4 uses the *R* package *texreg* (Leifeld, 2013) to visualize the three models that identify factors influencing actors' likelihood of exchanging information in the German climate and energy policy process. The three models show that the quality of the model (Akaike Information Criterion [AIC] and Bayesian Information Criterion [BIC]) can be improved by including a broad spectrum of influencing factors, but that the more parsimonious third model demonstrates even higher quality. The first model appears to confirm the ACF hypothesis to a small degree. However, when the influence of similarity of beliefs is controlled for typical endogenous network processes such as reciprocity (mutual relationships), local clustering (joint partnerships), and popularity (indegree), and when other parallel relationships such as influence reputation attribution, advice, and cooperation are additionally integrated into the model, the effect of the variable *similar beliefs* approaches zero and loses statistical significance. In the reduced third model, the endogenous variables reciprocity and clustering, as well as the relationship variables influence reputation

and cooperation, have a highly significant influence. Notably, actors' affiliation with the economy reduces the probability.

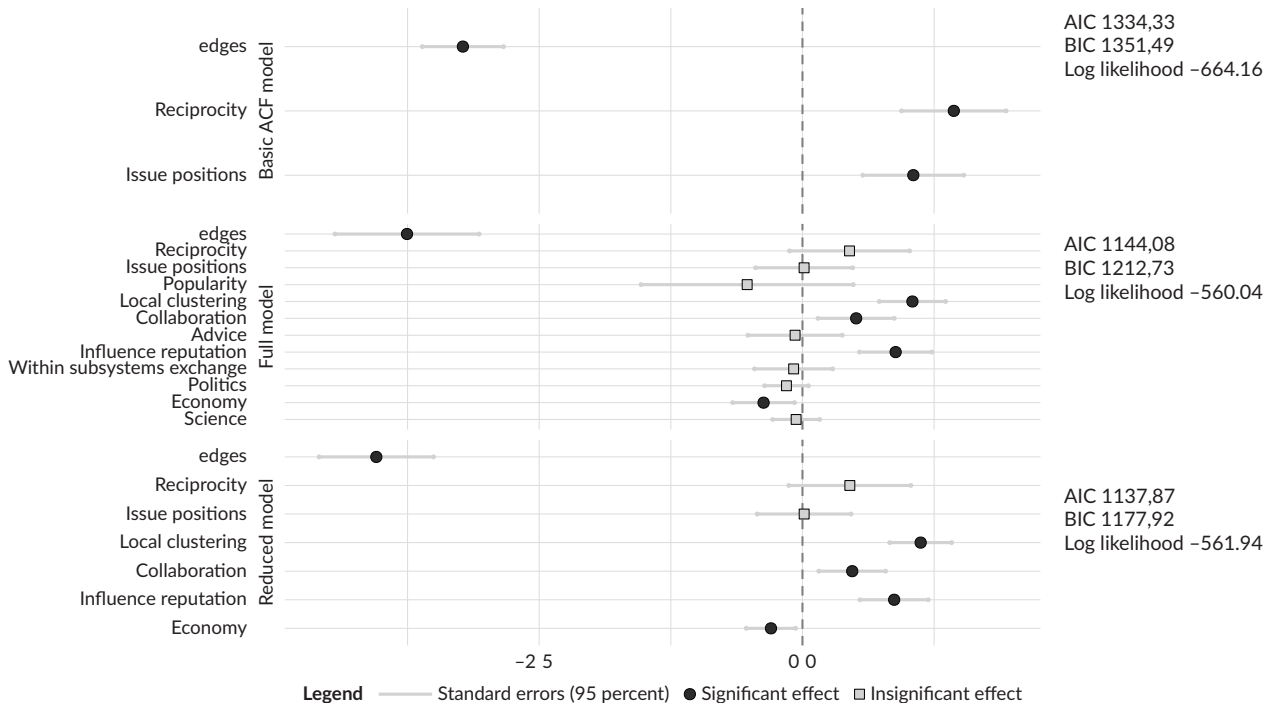


Figure 4. Exponential random graph models: Estimating effects on the likelihood of information sharing.

Actors are therefore more likely to exchange information with those they perceive as influential, and with those who are in collaborative relationships. While collaboration may partly reflect belief homophily, its inclusion also points to the importance of empirically observed relational structures that go beyond shared issue positions (Gronow et al., 2020; Kammerer et al., 2021). The node effect belonging to the business community is moderately significant, but it has a negative effect and tends to reduce the probability of exchanging information. This can also be observed in Figure 3, where economic actors on the right display relatively few connections among themselves.

The general message of Figures 3 and 4 thus is that the German policy network for climate and energy policy was very inclusive, but that a pro-transition coalition dominated completely, despite some sceptical opponents in the business community. It is very interesting to note, however, that many of the driving forces behind the nuclear phase-out at the time, such as Markus Söder, now hold the opposite view. This suggests that the decision to phase out nuclear power in 2011 was not based on policy learning, but on strategic electoral considerations.

Figure 5 strongly supports such an interpretation by showing the context of the issue competition game. Angela Merkel and the CDU ultimately improved their position in the issue space in the period between Baden-Württemberg's shock election and the federal election in the autumn of 2013, with climate and energy policy again taking a back seat. Tracking the polls from 2011 to 2013, the figure highlights the salience of energy and climate compared to unemployment—the most salient issue—and the positions of the various parties. Ten elections were held at the state level between 2011 and 2013, seven of them in the so-called “super election year” of 2011 (Jesse & Strum, 2012). Despite the continued salience of the climate and energy issues,

which showed the highest upward swing during the Bundestag discussions in 2012, the Greens were less and less able to keep up in this competition. Another key issue, namely the euro crisis, dominated the political agenda during this period. In any case, the result was that in 2013, the CDU/CSU achieved their best electoral result since 1990 under the leadership of Angela Merkel, with the Left Party overtaking the Greens and the FDP losing their seats in the Bundestag, failing to reach the 5% threshold. This election resulted in a change of government to a coalition of CDU/CSU and SPD.

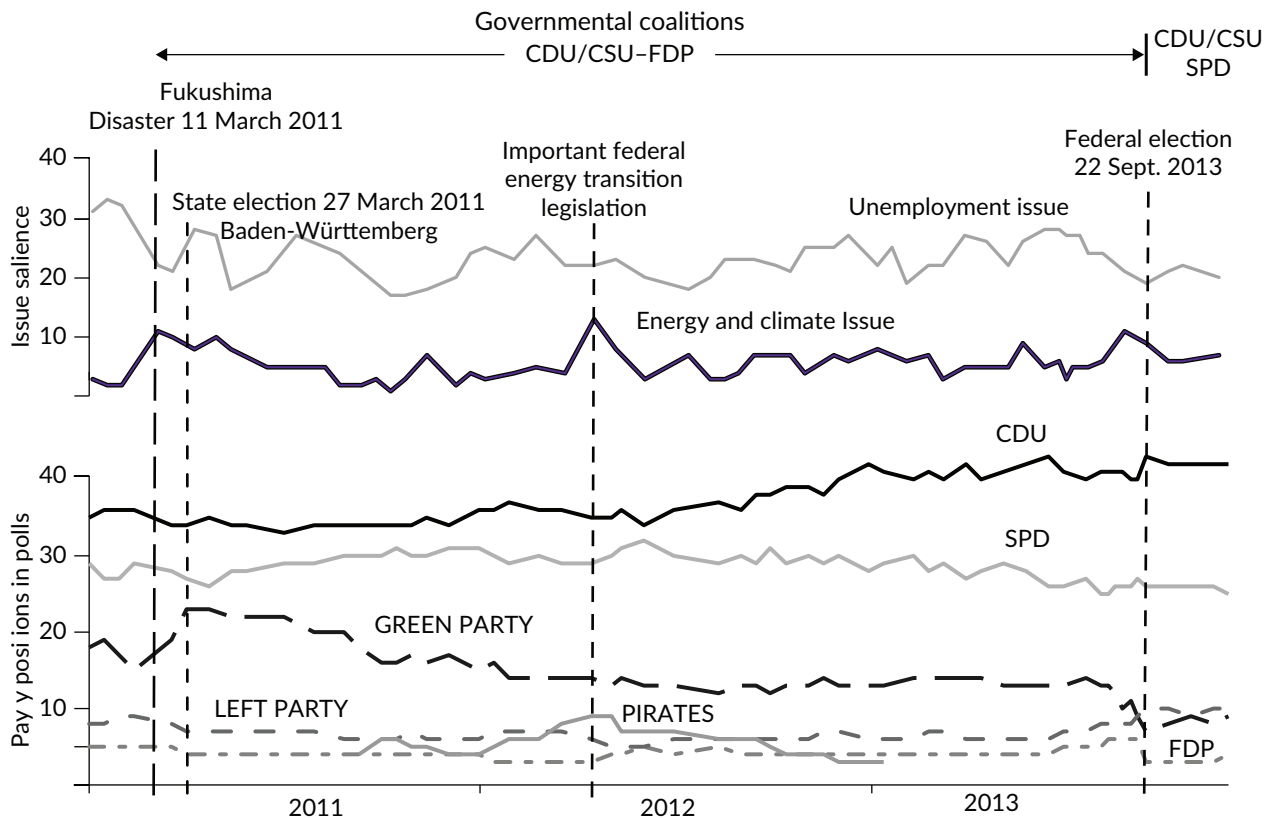


Figure 5. Issue salience and party positions 2011–2013.

The decision to phase out nuclear energy in 2011 is therefore less a result of political learning and belief change, at least as far as the most important players are concerned, and more a product of the competition for environmental issue ownership in the German party system. The analysis therefore supports the interpretation of authors who suspected a realignment of electoral politics (Fischer, 2012; Luhmann, 2012; Skea et al., 2013; Tratzmiller, 2018; Wittneben, 2012; Zohlnhöfer & Engler, 2014). The case shows that party political actors pursue thematic strategies to claim, defend, or neutralize specific issues in media discourse to secure or improve their position in the electoral vote market. From the perspective of the ecology of games, policymaking in energy and climate policy games is thus “overdetermined” by macropolitical electoral competition for control of issue ownership.

5. Conclusions, Limitations, and Outlook

Against the backdrop of Germany’s energy and climate policy, this article explains the extraordinary 2011 decision to phase out nuclear energy and launch the long-term *Energiewende* to shift towards renewables.

Germany aimed not only to eliminate nuclear risks but also to tackle climate change. Despite the Fukushima-triggered phase-out, the government upheld its climate goals, initiating a comprehensive transition strategy and committing to a coal phase-out by the late 2030s. In recent years, however, achieving these goals has become more difficult, especially amid the war in Ukraine and shifting geo-economic conditions.

The explanation combines long-term structural dynamics and the short-term shock of Fukushima. Structurally, the policy shift is seen as emerging from an “ecology of games,” in which interactions across the climate, energy, and political arenas created a window of opportunity in 2011. Since Chernobyl, Germany had developed a powerful anti-nuclear and environmental movement that, by the 2000s, had begun to see climate change as a central issue. Through the Green Party, this issue gained electoral success and eventually governmental power. In alliance with scientific institutes and think tanks, this issue coalition built a strong interest base for climate protection. The Fukushima disaster then acted as a catalyst, prompting a response unmatched in its radicalism by any other country.

The above analysis has shown that this was not an exaggerated panic reaction, but a decision made within the context of strategic election campaigning, which was, however, conditioned by long-term power constellations. Over time, almost all parties had incorporated environmental issues into their election programmes in the context of a historically strong environmental and anti-nuclear movement. To some extent, one could speak of a “greening” of the German political system. In addition, a rapidly growing “green economy” had developed in Germany since the 1990s, in which innovation policy and research policy played a major role. Ultimately, this had an impact not only on the German economy but also on the German science system. Many new scientific organizations and fields of research emerged, which exerted a growing influence on agenda-setting and decision-making. This complex system of actors was analysed as a policy network in which organizations with mutual interests in the relevant policy areas exchange information and collaborate to formulate and implement public policies. Within this policy network, we identified a broad alliance that strongly supported the energy transition decision.

The analysis has some limitations, two of which are particularly noteworthy. First, there is a slight climate policy bias, as the network was defined and surveyed within the scope of an international climate policy study. This bias would likely not exist if energy and climate policy had been equally prioritized from the outset. However, the analysis shows that both areas now overlap significantly and are treated in an integrated way, including in the present issue space. Second, the study faced a moderate and uneven response rate across actor categories. While higher rates are generally preferred in network analyses, this is a common challenge in survey-based research. The particularly low response rate among ministries can be attributed to the high politicization of both policy areas during the study period. This sensitivity required full anonymity for respondents, which is why individual organizations are not named.

Germany’s energy transition, once driven by a strong normative commitment to phasing out nuclear energy and advancing renewables, is facing increasing challenges. Internationally, Germany appears increasingly isolated in its anti-nuclear stance, as many countries reconsider nuclear power as a low-carbon option. Domestically, the continued reliance on coal as a bridging technology and doubts about the feasibility of the coal phase-out raise questions about the policy’s internal coherence. Under the new Federal Minister for Economic Affairs and Energy, Katherina Reiche, the focus has shifted toward energy security and price stability, with expanded gas-fired capacity, targeted renewable subsidies, and revised electricity demand

projections. The inclusion of CCS signals a more pragmatic turn. While the original *Energiewende* reflected a voluntaristic ethos, recent geopolitical shocks—especially the war in Ukraine and gas dependency—have prompted adaptive responses. This raises the question of whether the energy transition is undergoing a strategic recalibration, or even a partial reversal.

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Conflict of Interests

The author declares no conflict of interests.

Data Availability

Annex and data on issue network relations are available at <https://github.com/vsunikon>

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References

- AGEB. (2023). *Evaluation tables of the energy balance for Germany energy data for the years 1990 to 2023*. https://ag-energiebilanzen.de/wp-content/uploads/2023/11/awt_2023_e.pdf
- Beck, U. (1992). *Risk society—Towards a new modernity*. Sage.
- Biess, F. (2020). *German angst: Fear and democracy in the Federal Republic of Germany*. Oxford University Press.
- Bonacich, P. (1982). Power and centrality: A family of measures. *American Journal of Sociology*, 5, 1170–1182.
- Brandes, U., & Wagner, D. (2004). Analysis and visualization of social networks. In M. Jünger & P. Mutzel (Eds.), *Graph drawing software* (pp. 321–340). Springer.
- Broadbent, J. (2016). Comparative climate change policy networks. In J. N. Victor, A. H. Montgomery, & M. Lubell (Eds.), *The Oxford handbook of political networks* (pp. 875–900). Oxford University Press.
- Brohmann, B., Bürger, V., Dehmel, C., Fuchs, D., Hamenstädt, U., Krömker, D., Schneider, V., Mert, W., & Tews, K. (2012). Sustainable electricity consumption in German households—Framework conditions for political interventions. In R. Defila, A. Di Giulio, & R. Kaufmann-Hayoz (Eds.), *The nature of sustainable consumption and how to achieve it* (pp. 399–409). Oekom Verlag.
- Chemnitz, C. (2018). Der Mythos vom Energiewendekonsens. Ein Erklärungsansatz zu den bisherigen Koordinations—und Steuerungsproblemen bei der Umsetzung der Energiewende im Föderalismus. In J. Radtke & N. Kersting (Eds.), *Energiewende: Politikwissenschaftliche Perspektiven* (pp. 155–203). Springer.

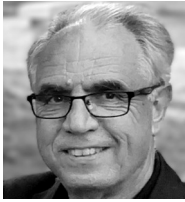
- Cornwell, B., Curry, T. J., & Schwirian, K. P. (2003). Revisiting Norton Long's ecology of games: A network approach. *City & Community*, 2(2), 121–142.
- Cranmer, S. J., Desmarais, B. A., & Morgan, J. W. (2020). *Inferential network analysis*. Cambridge University Press.
- Czada, R., & Radtke, J. (2018). Governance langfristiger Transformationsprozesse. Der Sonderfall „Energiewende.“ In J. Radtke & N. Kersting (Eds.), *Energiewende* (pp. 45–75). Springer.
- Decker, F., & Adorf, P. (2018). Coalition politics in crisis? *German Politics & Society*, 36(2), 5–26.
- Dutton, W. H., Schneider, V., & Vedel, T. (2012). Large technical systems as ecologies of games: Cases from telecommunications to the internet. In J. Bauer, A. Lang, & V. Schneider (Eds.), *Innovation policies and governance in high-technology Industries: the complexity of coordination* (pp. 49–73). Springer.
- Editorial Board of The Wall Street Journal. (2019). World's dumbest energy policy. *The Wall Street Journal*. <https://www.wsj.com/articles/worlds-dumbest-energy-policy-11548807424>
- Editorial Board of The Wall Street Journal. (2022). Germany's nuclear-power implosion. *The Wall Street Journal*. <https://www.wsj.com/opinion/germanys-nuclear-implosion-bundestag-robert-habeck-energy-europe-russia-11657572926>
- Ekardt, F. (2014). *Jahrhundertaufgabe Energiewende: Ein Handbuch*. Ch. Links Verlag.
- Faas, T. (2015). The German federal election of 2013: Merkel's triumph, the disappearance of the Liberal Party, and yet another grand coalition. *West European Politics*, 38(1), 238–247.
- Fischer, S. (2012). Die letzte Runde in der Atomdebatte? Der Parteienwettbewerb nach Fukushima. In E. Jesse & R. Sturm (Eds.), *»Superwahljahr« 2011 und die Folgen* (pp. 365–385). Nomos.
- Fischer, S. (2017). Der „Multiple-Streams-Ansatz“ als Erklärungsmodell für politische Entscheidungsprozesse. In S. Fischer (Ed.), *Die Energiewende und Europa: Europäisierungsprozesse in der deutschen Energie- und Klimapolitik* (pp. 55–65). Springer.
- Geels, F. W., Kern, F., Fuchs, G., Hinderer, N., Kungl, G., Mylan, J., Neukirch, M., & Wassermann, S. (2016). The enactment of socio-technical transition pathways: A reformulated typology and a comparative multi-level analysis of the German and UK low-carbon electricity transitions (1990–2014). *Research Policy*, 45(4), 896–913.
- Gronow, A., Wagner, P., & Ylä-Anttila, T. (2020). Explaining collaboration in consensual and conflictual governance networks. *Public Administration (London)*, 98(3), 730–745.
- Gründinger, W. (2017). *Drivers of energy transition. How interest groups influenced energy politics in Germany*. Springer.
- Haas, T. (2017). *Die politische Ökonomie der Energiewende*. Springer.
- Haunss, S., Dietz, M., & Nullmeier, F. (2013). Der Ausstieg aus der Atomenergie: Diskursnetzwerkanalyse als Beitrag zur Erklärung einer radikalen Politikwende. *Zeitschrift für Diskursforschung*, 1(3), 288–316.
- Haunss, S., & Hollway, J. (2023). Multimodal mechanisms of political discourse dynamics and the case of Germany's nuclear energy phase-out. *Network Science*, 11(2), 205–223.
- Hoffman, S. G., & Durlak, P. (2018). The shelf life of a disaster: Post-Fukushima policy change in the United States and Germany. *Sociological Forum*, 33(2), 378–402.
- Holstenkamp, L., & Radtke, J. (2017). *Handbuch Energiewende und Partizipation*. Springer.
- Hunter, D. R., Handcock, M. S., Butts, C. T., Goodreau, S. M., & Morris, M. (2008). ergm: A package to fit, simulate and diagnose exponential-family models for networks. *Journal of Statistical Software*, 24(3), 1–29.
- IEA. (2024). *World energy statistics and balances*. <https://www.iea.org/data-and-statistics/data-product/world-energy-balances>
- Ingold, K. (2011). Network structures within policy processes: Coalitions, power, and brokerage in Swiss climate policy. *Policy Studies Journal*, 39(3), 435–459.

- Jahn, D., & Korolczuk, S. (2012). German exceptionalism: The end of nuclear energy in Germany! *Environmental Politics*, 21(1), 159–164.
- Jänicke, M., & Jörgens, H. (2023). Ecological modernization and beyond. In H. Jörgens, C. Knill, & Y. Steinebach (Eds.), *Routledge handbook of environmental policy* (pp. 68–87). Routledge.
- Jesse, E., & Strum, R. (2012). »Superwahljahr« 2011 und die Folgen. Nomos.
- Jung, M. (2019). Modernisierung und asymmetrische Demobilisierung: Zur Strategie der Union seit 2005. In K.-R. Korte & J. Schoofs (Eds.), *Die Bundestagswahl 2017* (pp. 323–340). Springer.
- Kammerer, M., Wagner, P. M., Gronow, A., Ylä-Anttila, T., Fisher, D. R., & Sun-Jin, Y. (2021). What explains collaboration in high and low conflict contexts? Comparing climate change policy networks in four countries. *Policy Studies Journal*, 49(4), 1065–1086.
- Karimo, A., Wagner, P. M., Delicado, A., Goodman, J., Gronow, A., Lahsen, M., Lin, T.-L., Ocelík, P., Schneider, V., Satoh, K., Schmidt, L., Yun, S.-J., & Ylä-Anttila, T. (2022). Shared positions on divisive beliefs explain interorganizational collaboration: Evidence from climate change policy subsystems in 11 countries. *Journal of Public Administration Research and Theory*, 33(3), 421–433.
- Keil, S., & Gabriel, O. (2012). The Baden-Württemberg state election of 2011: A political landslide. *German Politics*, 21(2), 239–246.
- Kenis, P., & Schneider, V. (1991). Policy networks and policy analysis: Scrutinizing a new analytical toolbox. In B. Marin & R. Mayntz (Eds.), *Policy networks. Empirical evidence and theoretical considerations* (pp. 25–59). Campus.
- Kepplinger, H. M., & Lemke, R. (2016). Instrumentalizing Fukushima: Comparing media coverage of Fukushima in Germany, France, the United Kingdom, and Switzerland. *Political Communication*, 33(3), 351–373.
- Kimmich, C., Baldwin, E., Kellner, E., Oberlack, C., & Villamayor-Tomas, S. (2023). Networks of action situations: A systematic review of empirical research. *Sustainability Science*, 18(1), 11–26.
- Knoke, D., Pappi, F. U., Broadbent, J., & Tsujinaka, Y. (1996). *Comparing policy networks: Labour politics in the U.S., Germany, and Japan*. Cambridge University Press.
- Laumann, E. O., & Knoke, D. (1987). *The organizational state. The social choice in national policy domains*. University of Wisconsin Press.
- Leifeld, P. (2013). texreg: conversion of statistical model output in R to LATEX and HTML tables. *Journal of Statistical Software*, 55(8), 1–24.
- Leifeld, P. (2020). Policy debates and discourse network analysis: A research agenda. *Politics and Governance*, 8(2), 180–183.
- Leifeld, P., & Schneider, V. (2012). Information exchange in policy networks. *American Journal of Political Science*, 56(3), 731–744.
- Li, F. G. N., Trutnevyte, E., & Strachan, N. (2015). A review of socio-technical energy transition (STET) models. *Technological Forecasting and Social Change*, 100, 290–305.
- Long, N. E. (1958). The local community as an ecology of games. *American Journal of Sociology*, 64(3), 251–261.
- Lubell, M. (2013). Governing institutional complexity: The ecology of games framework. *Policy Studies Journal*, 41(3), 537–559.
- Luhmann, H.-J. (2012). Deutschlands Energiewenden: Motive und Auswirkungen für den europäischen Elektrizitätsmarkt. In J. Piepenbrink (Ed.), *Ende des Atomzeitalters. Von Fukushima in die Energiewende* (pp. 97–108). Bundeszentrale für politische Bildung.
- Mayntz, R. (1988). *Differenzierung und Verselbständigung: Zur Entwicklung gesellschaftlicher Teilsysteme*. Campus.
- Merkel, A., & Krahmann-Baumann, B. (2024). *Freedom: Memoirs 1954–2021*. Macmillan.
- Nagel, M., & Satoh, K. (2019). Protesting iconic megaprojects. A discourse network analysis of the evolution of the conflict over Stuttgart 21. *Urban Studies*, 56(8), 1681–1700.

- Nascimento, L., Kuramochi, T., Iacobuta, G., Den Elzen, M., Fekete, H., Weishaupt, M., Van Soest, H. L., Roelfsema, M., Vivero-Serrano, G. D., Lui, S., Hans, F., Jose De Villafranca Casas, M., & Höhne, N. (2022). Twenty years of climate policy: G20 coverage and gaps. *Climate Policy*, 22(2), 158–174.
- Perrow, C. (1984). *Normal accidents. Living with high-risk technologies*. Basic Books.
- Radtke, J., & Kersting, N. (Eds.). (2018). *Energiewende: Politikwissenschaftliche Perspektiven*. Springer.
- Reitz, S. (2024). Quality control of negotiated multi-source policy advice: The example of the German Coal Exit Commission. *European Politics and Society*, 25(1), 209–231.
- Renn, O., & Marshall, J. P. (2016). Coal, nuclear and renewable energy policies in Germany: From the 1950s to the “Energiewende.” *Energy Policy*, 99, 224–232.
- Rest, J. (2011). *Grüner Kapitalismus? Klimawandel, globale Staatenkonkurrenz und die Verhinderung der Energiewende*. Springer.
- Rinscheid, A. (2015). Crisis, policy discourse, and major policy change: Exploring the role of subsystem polarization in nuclear energy policymaking. *European Policy Analysis*, 1(2), 34–70.
- Rinscheid, A., Eberlein, B., Emmenegger, P., & Schneider, V. (2020). Why do junctures become critical? Political discourse, agency, and joint belief shifts in comparative perspective. *Regulation & Governance*, 14(4), 653–673.
- Rogge, K. S., & Johnstone, P. (2017). Exploring the role of phase-out policies for low-carbon energy transitions: The case of the German *Energiewende*. *Energy Research & Social Science*, 33, 128–137.
- Ronit, K. (2024). *Political species: The evolution and diversity of private organizations in politics*. Routledge.
- Saalfeld, T. (2003). Germany: Multiple veto points, informal coordination, and problems of hidden action. In K. Strom, W. Müller, & T. Bergman (Eds.), *Delegation and accountability in parliamentary democracies* (pp. 347–375). Oxford University Press.
- Sabatier, P. A. (1988). An advocacy coalition framework of policy change and the role of political-oriented learning. *Policy Sciences*, 21, 129–168.
- Sale, J. E. M., Lohfeld, L. H., & Brazil, K. (2002). Revisiting the quantitative-qualitative debate: Implications for mixed-methods research. *Quality and Quantity*, 36(1), 43–53.
- Sapinski, J. P. (2016). Constructing climate capitalism: Corporate power and the global climate policy-planning network. *Global Networks*, 16(1), 89–111.
- Satoh, K., Gronow, A., & Ylä-Anttila, T. (2023). The advocacy coalition index: A new approach for identifying advocacy coalitions. *Policy Studies Journal*, 51(1), 187–207.
- Satoh, K., Nagel, M., & Schneider, V. (2023). Organizational roles and network effects on ideational influence in science-policy interface: Climate policy networks in Germany and Japan. *Social Networks*, 75, 88–106.
- Scharpf, F. W. (1991). *Crisis and choice in European social democracy*. Cornell University Press.
- Schiffer, H.-W., & Trüby, J. (2018). A review of the German energy transition: Taking stock, looking ahead, and drawing conclusions for the Middle East and North Africa. *Energy Transitions*, 2(1/2), 1–14.
- Schneider, V. (2010). Policy networks and the governance of complex societies. In S. Kramer & P. Ludes (Eds.), *Networks of culture* (pp. 27–43). Lit-Verlag.
- Schneider, V. (2012). Governance and complexity. In D. Levi-Faur (Ed.), *Oxford handbook on governance* (pp. 129–142). Oxford University Press.
- Schneider, V. (2015). Towards post-democracy or complex power sharing? Environmental policy networks in Germany. In V. Schneider & B. Eberlein (Eds.), *Complex democracy. Varieties, crises, and transformations* (pp. 263–279). Springer.
- Schneider, V. (2024). *Advanced introduction to political networks*. Elgar.
- Schneider, V., & Ollmann, J. K. (2013). Punctuations and displacements in policy discourse: The climate change

- issue in Germany 2007–2010. In S. E. Silvern & S. S. Young (Eds.), *Environmental change and sustainability* (pp. 157–183). IntechOpen Limited.
- Schreurs, M. A. (2012). The politics of phase-out. *Bulletin of the Atomic Scientists*, 68(6), 30–41.
- Skea, J., Lechtenböhmer, S., & Asuka, J. (2013). Climate policies after Fukushima: Three views. *Climate Policy*, 13(sup01), 36–54.
- Spoon, J.-J., Hobolt, S. B., & de Vries, C. E. (2014). Going green: Explaining issue competition on the environment. *European Journal of Political Research*, 53(2), 363–380.
- Stefes, C. H. (2016). Critical junctures and the German Energiewende. In C. Hager & C. H. Stefes (Eds.), *Germany's energy transition: A comparative perspective* (pp. 63–89). Palgrave Macmillan.
- Strunz, S. (2014). The German energy transition as a regime shift. *Ecological Economics*, 100, 150–158.
- Szulecki, K., Fischer, S., Gullberg, A. T., & Sartor, O. (2016). Shaping the “Energy Union”: Between national positions and governance innovation in EU energy and climate policy. *Climate Policy*, 16(5), 548–567.
- Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioural sciences*. Sage.
- Tews, K. (2015). Europeanization of energy and climate policy: The struggle between competing ideas of coordinating energy transitions. *The Journal of Environment & Development*, 24(3), 267–291.
- Tratzmler, J. P. (2018). *Die Kehrtwende in der deutschen Atompolitik nach Fukushima: Detailanalyse eines politischen Entscheidungsprozesses*. KOPS. <https://kops.uni-konstanz.de/handle/123456789/44408>
- Von Hirschhausen, C., Gerbaulet, C., Kemfert, C., Lorenz, C., & Oei, P.-Y. (Eds.). (2018). *Energiewende “Made in Germany”: Low carbon electricity sector reform in the European context*. Springer.
- Wagner, P. M., Ocelík, P., Gronow, A., Ylä-Anttila, T., Schmidt, L., & Delicado, A. (2023). Network ties, institutional roles and advocacy tactics: Exploring explanations for perceptions of influence in climate change policy networks. *Social Networks*, 75, 78–87.
- Weber, G., & Cabras, I. (2017). The transition of Germany's energy production, green economy, low-carbon economy, socio-environmental conflicts, and equitable society. *Journal of Cleaner Production*, 167, 1222–1231.
- Weidner, H., & Eberlein, B. (2010). Still walking the talk? German climate change policy and performance. In B. Eberlein & G. B. Doern (Eds.), *Governing the energy challenge*. University of Toronto Press.
- Weidner, H., & Mez, L. (2008). German climate change policy: A success story with some flaws. *The Journal of Environment & Development*, 17(4), 356–378.
- Westenberger, G.-J., & Schneider, V. (2022). Söders Ökofeuerwerk und die Grünfärbung der CSU: Diskursnetzwerke im bayrischen Themenwettbewerb. *Zeitschrift für Vergleichende Politikwissenschaft*, 15(4), 641–665.
- Wittneben, B. B. F. (2012). The impact of the Fukushima nuclear accident on European energy policy. *Environmental Science & Policy*, 15(1), 1–3.
- Yang, P. (2022). Urban expansion of Energiewende in Germany: A systematic bibliometric analysis and literature study. *Energy, Sustainability and Society*, 12, Article 52.
- Ylä-Anttila, T., Gronow, A., Stoddart, M. C. J., Broadbent, J., Schneider, V., & Tindall, D. B. (2018). Climate change policy networks: Why and how to compare them across countries. *Energy Research & Social Science*, 45, 258–265.
- Zohlnhöfer, R., & Engler, F. (2014). Courting the voters? Policy implications of party competition for the reform output of the second Merkel government. *German Politics*, 23(4), 284–303.

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Litigating Across Borders: Subnational Actors and Supranational Governance in the Turów Dispute

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Abstract

The Turów lignite mine dispute is an unprecedented conflict between two EU neighbors. Sparked by a flawed Polish environmental impact assessment and a Czech complaint to the Court of Justice of the European Union in February 2021, it was resolved nearly a year later through an intergovernmental agreement in February 2022. Unlike conventional coal-related disputes confined to national jurisdictions, this case escalated to the European level, involving actors from subnational to supranational levels. This exemplifies the evolving nature of transboundary environmental conflicts within a multi-level governance framework. Using discourse network analysis, this study of the politics of environmental networks examines (a) whether and under what conditions the Turów dispute exhibits a meaningful dispersion of authority, and (b) the extent to which bargaining dynamics tracked *de facto* rather than *de jure* competencies. We map how governance-level interactions unfold, what positions actors articulate, and what alliances they form. The results indicate that the governance of the issue resembled a polycentric structure at the beginning of the conflict. Over time, it gradually shifted into a more hierarchical structure, where the regional and national governments concentrated power, sidelining other actors from the issue resolution. This complicates multi-level governance’s polycentric/hierarchical distinction, showing that both types can coexist within a single case. The recentralization of authority was likely enabled by framing the issue as groundwater depletion rather than climate threat. While this raised the problem to the national agenda, it may have narrowed the solution space to technical fixes in subsequent Czech–Polish negotiations, favoring national-level solutions.

Keywords

coal mining; coal phase-out; Czechia; environmental networks; Turów

1. Introduction

On September 20, 2021, the Court of Justice of the European Union (CJEU; in Case C-121/21 R) levied a daily fine of €500,000 on Poland for failing to suspend lignite extraction at the Turów open-pit mine. The complex directly employs about 3,600 people, supplies around 5% of Poland's electricity, and affects the entire region's economy (Abnett & Barteczko, 2021; Smoleń et al., 2024). This daily penalty responded directly to Poland's decision to prolong the mine's license to 2044 without conducting a mandatory transboundary environmental impact assessment that would address Czech concerns over groundwater depletion, air quality, and public health (Böhm et al., 2025; Ondráček et al., 2024; Sobota et al., 2024).

The order was exceptional in two respects. First, the €500,000-per-day penalty is the largest daily sum the CJEU has ever set in an environmental case, five times higher than the €100,000 per day threatened in the Białowieża logging order of November 20, 2017 (Case C-441/17 R). Second, Turów is the first case in which the CJEU fined one member state following an Article 259 suit under the Treaty on the Functioning of the European Union brought about by another member state over an operating coal mine. The Czech action—grounded in formal complaints and evidence compiled by Liberec regional and municipal authorities—was lodged after the European Commission was notified. The ruling shows that subnational bodies can secure EU-level sanctions through their national government to protect cross-border environmental interests.

Turów's significance also reaches well beyond the Czech–Polish–German border. The case exposes the limits of EU climate policy: Despite Green Deal ambitions, regulatory gaps have allowed one of the top 10 polluting coal-fired power plants in the EU (Fox, 2023; World Wildlife Foundation, 2005) to secure licenses that extend operations for decades. Because continued mining disqualifies the surrounding district from the Just Transition Fund, the area will serve as a natural counterfactual for studying development trajectories of coal mining regions with and without Just Transition Fund assistance. In short, Turów casts doubt on any narrative of an inevitable or orderly coal exit in the EU.

The case is equally significant for scholars of multi-level governance (MLG). The escalation from local groundwater complaints to a supranational court ruling, followed by diplomatic negotiations between Prague and Warsaw, exemplifies the EU's broader shift toward empowering subnational and non-state actors. Current EU regulatory architectures increasingly enable these actors to articulate and pursue their interests directly through supranational channels (Clinton & Arregui, 2024; Hadjiyianni, 2020), a process called “boomerang effect” (Keck & Sikkink, 1998; Sikkink, 2005). As Piattoni (2010) and Stephenson (2013) explain, decision-making power often leaks across territorial tiers, a phenomenon they regard as fundamental to MLG. The Turów case thus offers a real-world illustration of the authority-dispersion narrative at the heart of the MLG research agenda.

However, a closer look at the issue's evolution complicates this narrative. The final settlement on February 3, 2022, was negotiated directly by Czech Prime Minister Petr Fiala and Polish Prime Minister Mateusz Morawiecki, with minimal involvement of the regional and civil society actors who had initially set the process in motion (Ondráček et al., 2024; Sobota et al., 2024). The agreement's substance—financial compensation for the Czech side and the continuation of mining on the Polish side—largely reflected national government priorities at the expense of local demands. These outcomes suggest that, despite the earlier activation of supranational and subnational channels, decisive authority ultimately remained with the national executives.

This apparent mismatch between theoretical expectations and observed practice motivates our first research question: Does the Turów case exhibit a meaningful dispersion of authority? Or does it reveal the state's capacity to reassert control over the result of an environmental conflict? Under what conditions?

This question also speaks directly to a long-standing debate within MLG scholarship. A recent review of the field (Papadopoulos et al., 2024) shows that empirical work still concentrates primarily on formal competencies and territorial jurisdictions, whereas systematic analyses of processual bargaining remain comparatively rare. The Turów conflict offers an opportunity to redress this imbalance by juxtaposing formal powers with observed influence over outcomes. We therefore ask a second question: To what extent does the configuration of bargaining track the formal competencies of the actors involved or, alternatively, their informal influence?

To address both questions, we study the issue from the perspective of political networks, using discourse network analysis (DNA; Leifeld, 2013; Leifeld & Haunss, 2012). This approach is particularly suitable for studying environmental governance issues, as it allows the power relationships of actors to be inferred through political discourse (Hajer, 1995). The DNA approach is already well established, with applications in the study of energy transitions (Markard et al., 2021), coal-exit debates (Černý & Ocelík, 2020), and environmental and energy governance from a broader perspective (Haunss & Hollway, 2022; Nagel & Bravo-Laguna, 2022).

Discourse network analysis is particularly appropriate in our case because it enables the reconstruction of policy actor networks without surveying them and, crucially, allows for a precise observation of changes over time that is difficult to achieve with surveys (Leifeld, 2013; Neal, 2014). We identify which regional, national, supranational, or non-state actors are central at each stage and through which alliances they exercise influence. Standard network metrics—weighted degree, betweenness, and clustering—serve as proxies for *de facto* influence, which we contrast with each actor's competencies *de jure*. In doing so, we operationalize MLG's frequent invocation of "networks" (Papadopoulos, 2005) with a formal analytical toolkit, enhancing both the construct validity and the practical relevance of our findings. This article concentrates predominantly on the Czech side of the conflict, as it might alone shed light on the primary research problem. While Polish or German actors might appear in the data, we do not focus specifically on those and refer readers to the body of already published papers on various facets of cross-border cooperation in the wake of the Turów case (Böhm et al., 2025; Kurowska-Pysz et al., 2022; Łażniewska et al., 2023; Wróblewski et al., 2023), the conflict's evolution with emphasis on disagreements between Czech and Polish actors (Ondráček et al., 2024), the security discourse's role in the conflict (Polko et al., 2024), the politics around the implementation of a water directive (Sobota et al., 2024), the role of socioeconomic factors on the positions of regional residents (Žuk, 2023), or a critical assessment of the conflict's evolution and the Polish government's role in it (Polko et al., 2024; Žuk & Žuk, 2022). We also offer a concise case description and the formal competencies of Czech actors in the Supplementary File (Part I).

Section 2 presents the theoretical framework, drawing on MLG, discourse, discourse coalitions, and discourse networks to support the article's key assumptions. Section 3 outlines the methods, including the media data collection, the extraction of discourse networks through coding, and the subsequent network analysis. Section 4 presents the main findings, focusing on the networks' properties, the centrality of actors, and their overall structure. Section 5 concludes with a discussion of the main findings.

2. Theory

2.1. MLG

Developed in the early 1990s to explain how EU structural funds reconfigured territorial authority, the MLG framework depicts a polity in which national governments no longer monopolize decision-making (Stephenson, 2013). Policy competencies increasingly migrate upward to supranational institutions and downward to regional and local arenas as a consequence of complex, interdependent policy problems and the growth of cross-level networks (Betsill & Bulkeley, 2006). Piattoni (2009) locates this shift in three dynamics: devolution to subnational tiers, expanded co-decision-making with organized civil society, and the partial surrender of sovereignty through supranational coordination. The result is what Hooghe and Marks (2003) famously termed the “unravelling of the state”: a system in which compliance hinges on negotiation among a heterogeneous constellation of actors rather than on unilateral command (Daniell & Kay, 2018; Ruzza, 2007).

Hooghe and Marks (2003) distinguish two ideal-typical governance architectures. Type I resembles federalism: Authority is nested in a limited number of territorially fixed, mutually exclusive tiers (e.g., municipalities, regions, member states, EU). Type II is polycentric: It comprises numerous, overlapping task-specific jurisdictions that cut across scales and blur public–private boundaries. Intermediate, empirically observed hybrids lie on a continuum between these poles. Polycentricity—and thus horizontal contestation—is markedly higher under Type II, whereas power asymmetries in Type I are primarily determined by constitutional decentralization.

Although scholarship converges on the view that authority is now dispersed across multiple tiers, that shift’s magnitude—and reversibility—remain contested (Di Gregorio et al., 2019). This debate is particularly acute in climate governance, where global regulatory ambitions—for example, efforts to limit CO₂ production—intersect with place-based impacts, such as Turów’s role in local employment, pollution, and energy security. Such cases illustrate climate change’s “glocal” character, whose drivers and remedies span scales from the supranational to the local (Gupta, 2007).

Multi-level climate governance consequently involves a heterogeneous assemblage of national, subnational, and transnational state and non-state actors. Notwithstanding a recent surge in MLG scholarship, we still lack a systematic understanding of how power configurations shape the vertical integration of decision-making. Research has centered on national–supranational linkages, whereas national–subnational interactions remain under-examined (Di Gregorio et al., 2019). Emerging evidence further indicates that state actors still orchestrate multi-level environmental regimes (Brockhaus & Di Gregorio, 2014; Di Gregorio et al., 2019; Hale & Roger, 2013). Thus, despite the “unravelling of the state,” hierarchical levers seem to persist and may enable or impede policy coherence across scales.

Over time, MLG has become a core lens for analyzing EU decision-making and is now widely applied to other regions and policy arenas—especially environmental governance, where coordination across tiers is indispensable. A systematic review by Papadopoulos et al. (2024) of 590 MLG publications (1993–2018) shows that 20% of all studies address the environment or energy; within the narrower corpus of empirical articles, those classified under “environmental policy” constitute 31%.

2.2. MLG and Networks

Although many MLG studies speak of “networks,” far fewer operationalize them with a formal network analysis; notable exceptions are for example works of Di Gregorio et al. (2019) and Nagel and Bravo-Laguna (2022). Treating MLG as an inter-organizational network allows scholars to map who influences whom, revealing how states both wield and face constraints in multi-level climate governance. This perspective helps clarify the unresolved question of whether dispersed authority promotes or hinders coherent policy integration.

A second strength of our network-based approach addresses the persistent divergence between actors’ formal competencies and their effective influence—an issue highlighted systematically by Tortola (Papadopoulos et al., 2024; Tortola, 2017). At its heart, MLG scholarship still oscillates between two analytical foci. One strand treats MLG primarily as a reconfiguration of formal institutional architectures—territorial and functional jurisdictions, treaty revisions, or inter-level partnerships. The other, closer to Hooghe and Marks’s (2003) original ambition, views MLG as a lens on policy practice, attentive to informal rules, bargaining routines, and the everyday “workaday” politics that elude constitutional description (Piattoni, 2009; Tortola, 2017). This split leaves the informal, networked dimension largely underspecified and under-researched. With respect to this discussion, the approach of policy networks is particularly useful, as it allows us to grasp the power relations among actors regardless of their formal relationships (Borgatti et al., 2018).

2.3. Discourse and Policy Formation

Uncovering networks is, however, a non-trivial task. We approach policy networks as an intersubjectively constructed product that is the result of the use of language (Fischer, 2003). Within this tradition, our research draws on the notion of political discourse, specifically Hajer’s perspective. Discourse manifests itself as a grouping of ideas, concepts, and categories through which a phenomenon is given meaning (Hajer, 1995). Discourses delimit certain topics and shape the context in which the phenomenon is understood (Hajer, 1993, pp. 45–46), ultimately defining policy (Hajer, 1995).

The policy space could be seen as a product of interactions—“discursive struggles”—among actors, who use social constructs to advance their understanding of an issue and construct and re-construct the shared understandings of phenomena (Fischer, 2003). This happens through a process of articulation (Fairclough, 1993): the “creation of a new, apparently unified, discourse made of distinct components that can make sense only under particular circumstances and yet can be put forward in an attempt to establish an authoritative explanation of a phenomenon” (Roper et al., 2016). The ability to dominate discursive struggles gives actors the power to influence how policy is shaped (Hajer, 1995, 2006). Control over the discursive space makes certain courses of action straightforward and logical, while others are not viable. In other words, “the way actors define issues through shared discourses influences their [issues’] recognition as [a] public policy problem and the subsequent policy response” (Kern & Rogge, 2018). At the same time, following the idea of structuration (Giddens, 1984), the discourse also restrains actors and creates, cultivates, and reinforces boundaries within which any policy action is taken or avoided.

2.4. Discourse Coalitions

To affect the discourse, actors leverage constructs to justify courses of policy action. A set of similar constructs combine to form “story-lines” (Hajer, 1995). Their role in the discourse is crucial: “Story-lines fulfil an essential role in the clustering of knowledge, the positioning of actors, and, ultimately, in the creation of coalitions amongst the actors of a given domain” (Hajer, 1995, p. 63). Story-lines do not need to be consistent, constructs need not be in line with others; they just belong to the same discourse, and through story-lines, discourse is invoked. Moreover, they are not static and may evolve and change over time, in line with the intersubjective constructivist perspective (Hajer, 1995, 2006).

An important notion and innovation of Hajer’s approach to discourse is the formation of “discourse coalitions”—“ensemble[s] of a set of story lines, the actors that utter those story lines, and the practices through which these story lines get expressed” (Hajer, 2006, p. 67). Actors may be attracted to similar story-lines for various reasons, forming discursive coalitions in the process: “Story-lines are here seen as the discursive cement that keeps a discourse-coalition together” (Hajer, 1995, p. 65). The coalition holds together as long as actors stay committed to the story-lines. Yet, the commitment does not have to be based on any deeply held beliefs (Rennkamp et al., 2017) or even narrowly focused interests (cf. Hajer, 1995, pp. 59, 68–72).

2.5. Operationalization

We position our research within the literature that uses MLG together with the formal network perspective (Di Gregorio et al., 2019; Nagel & Bravo-Laguna, 2022) and that specifically employs the DNA approach (Leifeld, 2013; Leifeld & Haunss, 2012). DNA allows us to examine policymaking as it plays out in the public discourse, integrating both Hajer’s perspective on discourse (Rennkamp et al., 2017) and MLG in a neat and straightforward manner. A discourse network is a two-mode network that consists of actors and the constructs they utter, along with actor attributes such as the MLG level they operate on.

The resulting network of ideas is a “form of connection, [through which] one articulates an idea, argument, interest, or discourse with another” (Roper et al., 2016). Following Leifeld’s terminology, we use the term “concept” to signify a construct henceforth.

Network operationalization enables us to use metrics and tools from the social network analysis toolkit. Actors and/or articulated concepts at the center of such a network could be considered the most influential for the policy process (Leifeld, 2013, 2016) or, in other words, the most powerful. We approach power as centrality, using degree and betweenness as metrics (Freeman, 1978). Along with that, the configuration and structure of the network allow for the identification of the discursive coalitions, story-lines (Hajer, 2006), and actor types forming the coalitions. We find coalitions through the measurement of clustering in the network (Blondel et al., 2008). Pairing coalitions with the types of actors or levels they operate at allows us to capture actors from the MLG perspective, which would be hard or impossible to achieve through direct measurement (Neal, 2014).

Secondly, the DNA lens is superb for dynamically examining policymaking. Manifested concepts have a clear temporal dimension—they are uttered at distinct points in time. Concepts important to actors are articulated by many, opening space for the investigation of the actors’ similarity. Any changes in positions, radical turns, or departures from the previous stances of actors towards concepts can be observed—actors start to subscribe to

different concepts—thereby illuminating the stability and evolution of story-lines (Hajer, 1995). This dynamic perspective is assumed to be less affected by the recall bias of actors or selective/strategic communication, as argued by Leifeld (2013).

3. Data and Methods

3.1. Time Frame

The study spans a year of the Czech–Polish conflict over Turów, from February 26, 2021, to February 3, 2022. As argued in the case description (see Supplementary File, Part I), we empirically chose four major events that occurred in the selected time span based on exploratory pre-research conducted before the data collection. They were chosen with regard to their potential to alter the dynamics of the conflict and include: (a) the CJEU decision to issue an injunction against Poland (May 22, 2021); (b) the Czech appeal to the CJEU to fine Poland for injunction non-compliance (June 8, 2021); (c) the CJEU decision to fine Poland €500,000 per day of non-compliance (September 21, 2021); and, lastly, (d) the Czech parliamentary elections, marking a change in the Czech government (October 9, 2021). These four milestones split the time frame of the study into five periods.

3.2. Data

We collected media articles from Czech national print using the media database Newton One—a tool similar to LexisNexis that contains all media content published in Czechia, both print and online. The database was queried for all articles published in the national print media containing the keyword “Tur[óo]w” at least once. The search returned 393 articles.

All articles were imported into the software Discourse Network Analyzer (Leifeld, 2019), recording all available metadata (notably, source, author, and time of publishing). There was no initial filtering based on article length, type, or relevance, ensuring the broadest possible scope of reported actors.

All articles were thoroughly read, and relevant claims were highlighted for coding to their fullest extent, with a single candidate claim containing a single coherent idea. Given the broad scope of keyword search, not all articles contained claims—only 212 out of 393 articles contained at least one claim. Together, 996 claims were identified. The claim-making process is not evenly distributed over the chosen period and corresponds with developments over the issue and subsequent media attention cycles. Spikes of coverage occur around or after notable events (milestones discussed above), as evidenced by the distribution of claims over the entire time frame of the study in Figure 1. We summarize all five periods in Table 1, providing time spans together with the number of claims in each period.

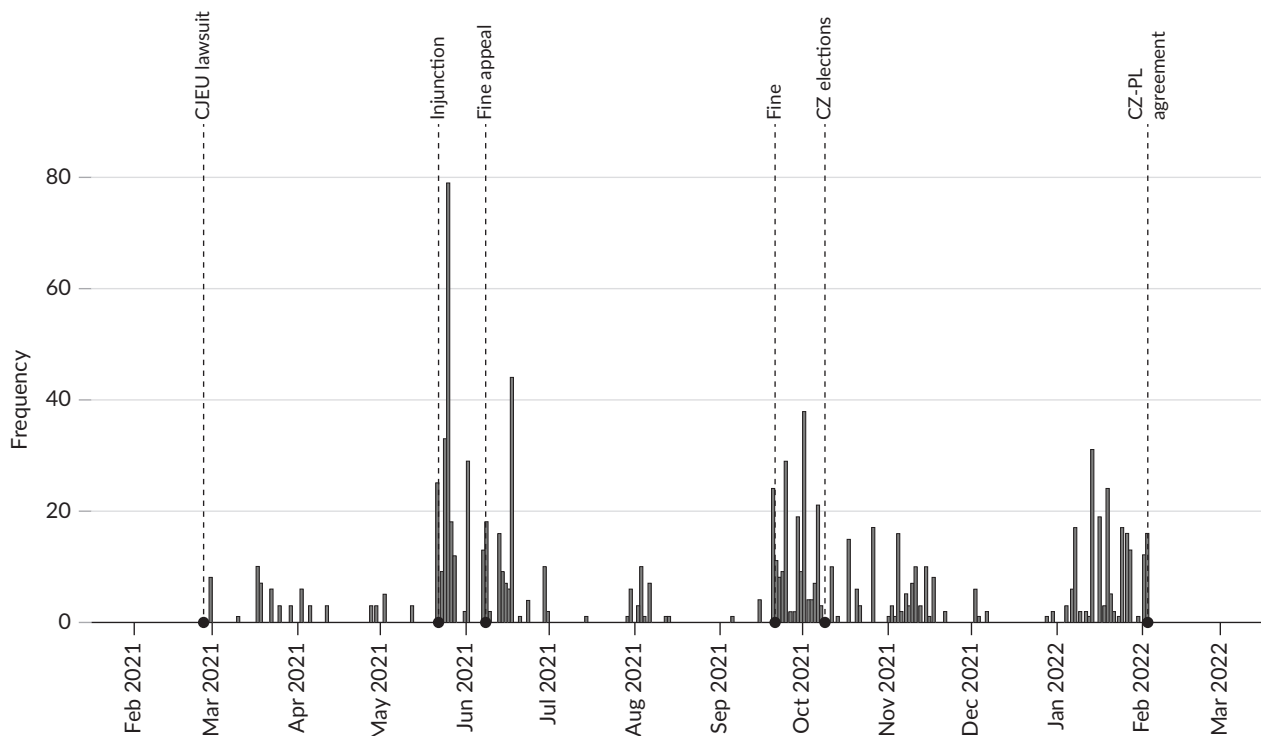


Figure 1. Frequency of claims over time.

Table 1. Milestones, time periods, and claims.

Period	Starting event	Time span	Days	Claims
1	Case brought to the CJEU	Feb 26–May 21	84	73
2	CJEU injunction	May 22–Jun 7	16	208
3	Czech fine appeal	Jun 8–Sep 20	104	208
4	CJEU fine decision	Sep 21–Oct 8	17	190
5	Czech parl. elections	Oct 9–Feb 3	117	327

3.3. Coding

Coding similar to qualitative content analysis was used to categorize and process claims extracted from the media data. Each “actor” could be understood to be represented by two features—a “person” communicating and an “organization” or position on behalf of which the person communicates. This actor communicates the “concept”—an idea that is part of a story-line. The actor also aligns themselves with or distances themselves from the concept through “agreement.”

Thus, the claim-making activity consists of four essential components (Leifeld, 2016):

- Person—the author or individual making the claim;
- Organization—the organization that the person represents;
- Concept—the idea or position—part of the story-line—communicated in the claim;
- Valence—(dis)agreement with the concept, positioning the author towards/against the claim.

The relational aspect of the claim-making process is the tie formed between the actor and the concept, which is qualified by the valence (agreement/disagreement tie). The aggregate of all actors and claims they subscribe to may be formalized as a two-mode network of actors and concepts and can be more formally analyzed with the help of the social network analysis toolkit.

The four dimensions of claims are represented by four variables recorded for every claim. Person and organization are classified through their reported name/affiliation as two separate nominal variables. We identified 122 persons belonging to 55 organizations. Two checks and a final consistency check were performed during the coding process to ensure correct affiliation. The concept, the third nominal variable, is classified with the help of a codebook of claims, which was built inductively from the data (Krippendorff, 2013; Leifeld, 2013). The first phase was open coding, where the content was coded as close to the original meaning as possible (Rivas, 2012; Saldaña, 2016). Two rounds of coding scheme refinement followed, during which codes were checked for overlaps and consistency. Codes used sparsely or defined in an overlapped way were discarded and/or recoded. This process resulted in 30 final codes. Together with every concept code, a fourth variable representing (dis)agreement was recorded as a Boolean value, with 0 representing disagreement and 1 representing agreement.

All coding work was primarily done by the first author, with regular checks for consistency. Coded statements were randomly selected and repeatedly evaluated. In case of doubt, all statements coded with the code in doubt were reassessed. For more details, see Supplementary File. Part A discusses the statement definition in more detail. Part B contains a coding scheme for claim concepts. Part C contains a list of all persons and their affiliations, and Part D lists all organizations, their type, and color coding.

3.4. Networks

After coding all claims, we constructed four types of networks for each time period. The first type was a two-mode weighted network, including both statements and organizations and offering full insight into the data. The second, third, and fourth types were derived from the two-mode network, forming two one-mode network projections of organizations connected through concepts.

The weight in the two-mode network captures each policy actor's (organization's) overall agreement or disagreement with the concept, each tie between an organization and concept being the sum of agreements and disagreements—what Leifeld (2016) calls the “subtract” weighting of a network.

The second type of network is a one-mode projection, where both agreement and disagreement ties are present as a result of the “subtract” weighting of the ties—we refer to these networks as “one-mode subtract” networks. The third type is a “congruence” network, where two organizations form a tie if both share either an agreement or a disagreement with a concept. The fourth network is similar to the third. However, each tie captures two organizations that disagree over a concept (e.g., one organization agrees, while the other does not), forming a one-mode conflict network (Leifeld, 2016, 2019).

3.5. Social Network Analysis

Once the networks are obtained, we apply the standard toolkit of social network analysis, enabling us to examine and describe them as a whole through their individual components and sub-parts.

First, we describe the basic properties of all two-mode networks—the number of nodes, number of ties, average degree, and the components of each network (Borgatti et al., 2018). We also report these properties for one-mode subtract networks, complemented by the number of isolates, as these may be present in the derived one-mode projections.

Second, we use degree centrality to identify the most central actors in each period and respective network. These measures reveal the importance of actors through their connections, rather than solely through the frequency of their statements. Chosen centralities identify actors that are well-connected discursively to other actors, as well as those that bridge discourse constellations. We apply degree and betweenness centrality (Freeman, 1978; Wasserman & Faust, 1994) on one-mode projections of organizations, with subtract ties—specifically (a) degree centrality excluding tie weight, (b) degree centrality including tie weight, and (c) betweenness centrality (Barrat et al., 2003; Freeman, 1978). The degree indicates how well actors are connected with others through concepts, capturing discursive similarity. Most central actors are thus the ones that are discursively similar to many others or are very well discursively aligned with other actors, indicating their power in discursive struggles. Betweenness centrality captures the ability of actors to bridge areas in the discourse network. Since the results of centrality measures cannot be compared directly, we do so by ranking organizations according to their centrality and comparing these rankings over time. This allows us to see how the prominence of actors—their congruence or agreement with most other actors—changes temporally. Lastly, we interpret the evolution of centrality based on the type of organization according to the MLG perspective.

Along with degree, we use modularity-based community detection on the one-mode projections of organizations connected through concepts. Specifically, we use the Louvain method, which finds communities through modularity optimization (Blondel et al., 2008). We apply this algorithm to both the one-mode subtract network of organizations and the one-mode congruence network of organizations for each period. This community detection algorithm is widely used and has performed well in identifying communities (Lancichinetti & Fortunato, 2009; Yang et al., 2016). However, it cannot detect overlapping communities, may produce weakly connected communities, and can potentially overlook subcommunities due to the modularity resolution problem (Traag et al., 2019).

All visualizations of networks were conducted using the software Visone (Brandes & Wagner, 2016). Parts of the analysis and visualizations were conducted using R (R Core Team, 2017) and the package igraph (Csardi & Nepusz, 2006).

3.6. Limits

Inevitably, the study of networks extracted from media data has limitations. The first set is mostly related to the logic of news media production. Media follow norms such as novelty or timeliness and have editorial policies in place that might affect the coverage of an issue (Boykoff & Boykoff, 2004). There is also a threshold for media access, and not all actors are granted a platform to express their ideas, potentially overrepresenting governmental actors. Moreover, media outlets are shown to frame issues in particular ways (Entman, 1993). Hence, despite the inclusion of the broadest possible sample, the data might still offer a government-centric perspective. We cannot estimate how these effects influence the coverage—an obvious limitation of any study using a DNA approach based on media data. As argued by Leifeld (2013, 2016), media coverage can only be

assumed to correspond to the underlying policy network. Some empirical evidence supports this assumption (cf. Schaub & Metz, 2020). A second set of limitations arises from the exclusive focus on Czech media data. As a result, the study provides a Czech-centric perspective and does not fully capture actors present in Polish or German media discourse. Although beyond the scope of this article, examining German and Polish actors could be a direction for future research.

4. Results

4.1. Network Descriptives

First, we present network descriptives for the two-mode networks. Table 2 presents the basic parameters of the five two-mode networks representing each period. While all networks in periods 2–5 have a roughly similar number of nodes and edges, the first period has fewer nodes and fewer edges. Networks in period 1–4 have one component only; in period 5, the network has one large component and one unconnected concept-organization tuple.

Table 2. Two-mode subtract network descriptives.

Period	Nodes	Concepts	Organizations	Edges	Number of components	Largest comp. size
1	33	19	14	39	1	33
2	50	25	25	92	1	50
3	50	25	25	106	1	50
4	47	21	26	88	1	47
5	59	26	33	124	2	57

Table 3 presents the basic properties of the one-mode subtract (agreement–disagreement) network projections of the two-mode networks described above. The smaller number of nodes in the first period results in a correspondingly smaller one-mode projection. Average degree fluctuates across periods, with period 3 showing the highest average degree, followed by periods 5 and 4. Period 3 also exhibits a markedly higher modularity value compared to the other four periods. Visualizations of these networks are included in Supplementary File, Part G.

Table 3. Descriptives of one-mode organization subtract networks.

Period	Nodes	Edges	Isolates	Average degree	Louvain clusters	Louvain modularity
1	17	38	0	4.471	3	0.185
2	29	111	0	7.655	4	0.17
3	27	160	0	11.852	2	0.548
4	28	129	0	9.214	2	0.102
5	36	262	1	14.556	3	0.231

4.2. Actor Centrality Over Time

This section of the results presents the evolution of actors' centrality in the networks over time. Degree centrality, extracted from the one-mode organization projections, is reported for all five periods. For clarity and space considerations, only the weighted degree and the 10 most central actors—those with the highest average rank positions—are shown (Figure 2). The centrality scores and a complete set of rankings are presented in Supplementary File, Part H. It is also worth noting that some actors were absent in all five periods. In such cases, we added a light gray line linking adjacent observations. We used color coding for each actor, with similar organizations assigned the same color. The color-coding scheme can also be found in Supplementary File, Part D.

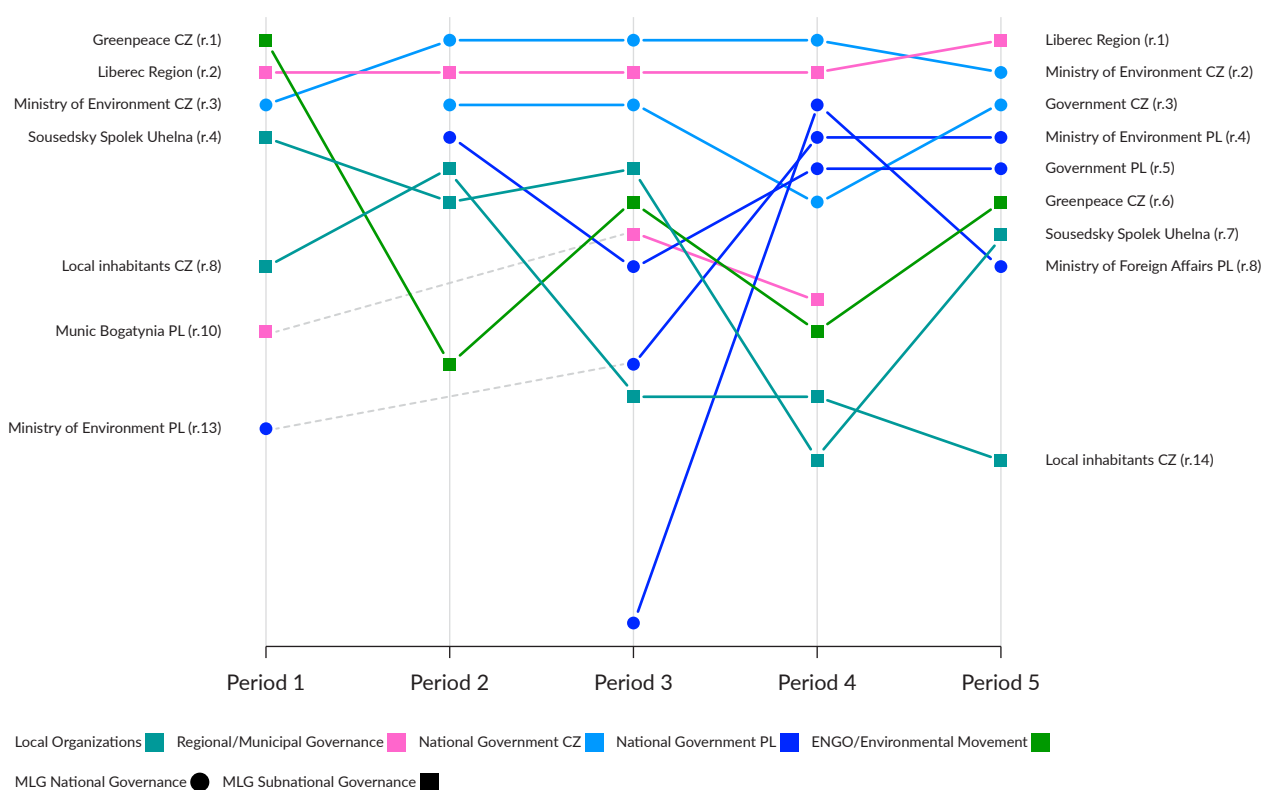


Figure 2. Weighted degree centrality. Top 10 actors based on their average rank and evolution over periods. Note: Rank represented as (r.)

Figure 2 shows that regional and national government actors are the most central. The weighted ranking clearly indicates that regional and national governmental actors hold the most central positions across all five networks, with the Liberec Region and Ministry of Environment ranking the highest. Subnational actors Greenpeace CZ, Sousedský Spolek Uhelná (Neighborhood Association Uhelná; local NGO representing the most affected the most by mining in Turów), and Local inhabitants CZ (people from localities close to Turów who voiced their concerns) also rank high in centrality. Still, their influence decreases over time, dropping most noticeably in the fourth period (between the decision to fine Poland €500,000 per day for non-compliance and the Czech parliamentary elections). From the third period onward, there was a visible increase in the centrality of some Polish national government actors, who became highly central in the fourth and fifth periods.

This is interesting from the MLG perspective. The results suggest that the regional government (Liberec Region) plays a crucial role alongside Czech national government bodies, except during the initial period. This indicates a certain dispersion of authority. However, such a pattern might be perfectly consistent with both Type I and Type II governance. Further, results suggest that the local level and non-governmental actors lose centrality over time, becoming more sidelined. Lastly, it is interesting that the centrality of the supranational level is low, likely because these actors apparently do not appear in the discourse very often and/or are not engaged in the national discussion.

4.3. Networks of Organizations and Concepts

This section presents a qualitative interpretation of the two-mode networks (showing which organizations link to which concepts), along with interpretations of the one-mode congruence and conflict organizational network projections. For each period, we present and discuss a two-mode network subtract network with tie weights in the top part of the figure of each period. These figures help us understand the overall structure and content of the discourse for each period. This is followed by the one-mode congruence projection of organizations, showing clusters, tie weights, and degree centrality in the bottom-left part of the figure, complemented by the conflict network with tie weights in the bottom-right. These figures allow us to understand how discourse coalitions are structured. Finally, we interpret these results from an MLG perspective. Due to space constraints and the focus of this article, we primarily concentrate on organizations. For a more detailed discussion of concepts and their evolution over time, see Supplementary File, Parts E and F.

The first period (February 2–May 21, 2021, Figure 3a) was marked by strong cohesion among Czech actors, with adverse impacts on water availability (code: `harm_water`) as the dominant concept. Discussions focused on groundwater depletion, with little attention to solutions. The discourse was in an early, problem-identification phase rather than a negotiation phase.

On the Czech side, the Liberec Region and Greenpeace CZ played a central role in emphasizing groundwater depletion as the primary environmental concern. Sousedský Spolek Uhelná and local inhabitants reinforced this argument, citing direct impacts on their water supplies. Czech local and national government actors collectively framed the issue as a violation of EU environmental law, highlighting Poland's failure to conduct transboundary consultations under the Environmental Impact Assessment and the Water Framework directives. Polish actors present in the network emphasized various facets of justice, framing the Turów mine as essential for jobs and regional stability. Polska Grupa Energetyczna (PGE; Polish Energy Group) and Polish government institutions argued that mining continuity safeguards livelihoods and prevents economic hardship, stressing that to stop mining would be to impose an unjust burden on local workers and communities.

A key point of contention arose over the fairness of legal procedures (`justice_fair_procedures`), with Czech and Polish government actors disagreeing. Czech authorities claimed that Poland bypassed transboundary consultations, while Polish institutions maintained that the licensing process was conducted in accordance with national regulations.

The Czech actor network was highly unified, with regional authorities, environmental groups, and local communities aligned on groundwater concerns. Polish actors, in contrast, focused on economic stability and

fairness, portraying external pressure as an overreach into domestic policymaking. This phase set the stage for deeper conflict: Czech actors escalated legal action, bringing the case to the CJEU in February 2021, while the Polish actors reinforced claims of economic necessity and sovereignty, leading to ongoing disputes over compliance and compensation.

The lack of conflict is clearly visible in the one-mode projections. The congruence network (Figure 3b) illustrates the patterns described above. The Czech actors show strong agreement, with agreement links

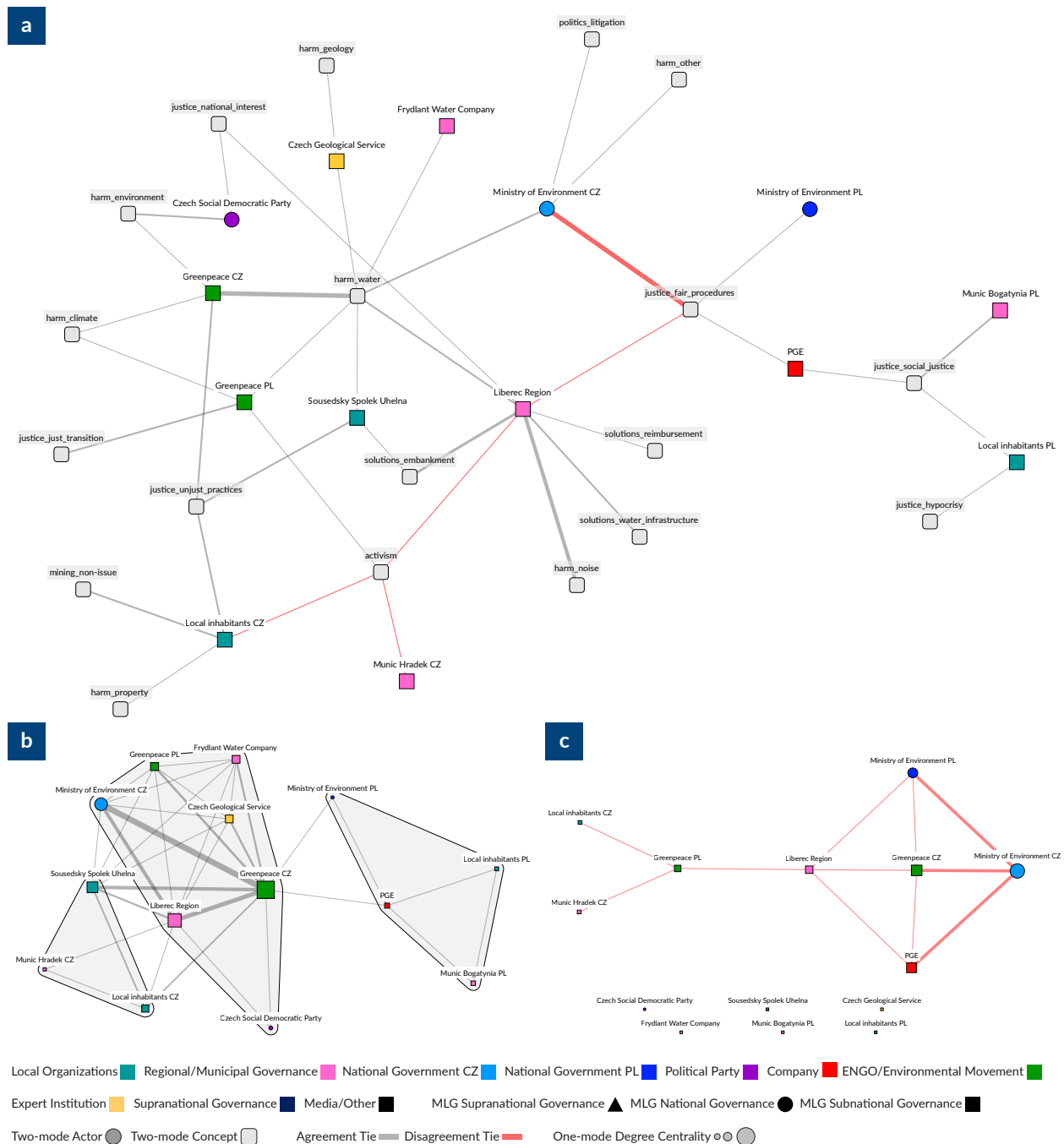


Figure 3. Period 1: (a) two-mode subtract network, (b) one-mode organization congruence network, and (c) one-mode organization conflict network.

among the Czech Ministry of the Environment, Greenpeace CZ, and the Liberec Region. At the same time, Sousedský Spolek Uhelná is somewhat aligned with these actors as well. Polish organizations, in contrast, are mostly disconnected and generally disagree with Czech actors, as reflected in the conflict network (Figure 3c).

From an MLG perspective, it is worth highlighting the congruence across different actor types, regardless of the level of governance or national boundaries. Within the identified coalitions, local, regional, and national Czech actors demonstrate clear alignment. Interestingly, Greenpeace PL is also present within one of these two communities, indicating a degree of coordinated campaigning and engagement across the two national branches of the organization. A similar cross-level congruence is visible among Polish actors in the last coalition. Notably, supranational governance actors (European Commission, CJEU) were absent from the discourse during this period.

We observed an interesting trend in the second period (May 22–June 7, 2021, Figure 4a). While harm_water remained central, reinforced by the Liberec Region, Greenpeace CZ, and Sousedský Spolek Uhelná, Czech government actors, particularly the Ministry of the Environment, began advocating for negotiations and a possible agreement with Poland.

Discussions shifted toward solutions, including reimbursement for water infrastructure improvements and an underground barrier to prevent water outflow, supported by the Liberec Region and the Ministry of the Environment. An embankment to reduce dust and noise pollution was also considered. PGE, the Polish government, and local authorities in Bogatynia rejected the Czech claims and challenged the CJEU ruling as unjust, emphasizing jobs, economic stability, and energy security. Their focus on the concept justice_social_justice presented the dispute as a threat to local livelihoods rather than an environmental issue.

Disagreements persist over justice_fair_procedures. The Czech Ministry of Foreign Affairs and the Liberec Region argue that Poland bypassed transboundary consultations, whereas the Polish Ministry of Climate and Environment defended its legal compliance. Despite this, the Czech Ministry of the Environment signaled openness to a diplomatic solution.

The Czech side of the network began to fragment. While the Liberec Region and the Ministry of the Environment explored compensation-based solutions, Greenpeace CZ and Sousedský Spolek Uhelná insisted that only stopping the mining could prevent further groundwater depletion. Meanwhile, the Polish actors remained united, emphasizing economic necessity and sovereignty. The divide among the Czech actors—between those favoring negotiation and those opposing mining altogether—marked a turning point in the discourse, shaping the later phases of the conflict.

The one-mode projection of congruence (Figure 4b) shows what can be understood as the emerging fragmentation of agreement. While the strongest interconnections based on congruence over concepts are found among the Liberec Region, the Ministry of Environment CZ, the Czech government, and the Polish government, these actors belong to three distinct coalitions. The Ministry of Environment CZ, Sousedský Spolek Uhelná, Greenpeace CZ, and other actors form the first coalition. The second includes the Liberec Region and the Czech government. The third coalition groups Polish actors, including government ministries, PGE and its unions, as well as the local pro-mining movement Hands Off Turów, which was composed of

concerned local citizens likely dependent on the mine's operation—they organized road blockades during this period in protest. The conflict network (Figure 4c) is dominated by this pro-mining movement, which directly opposes many of the Czech actors' claims.

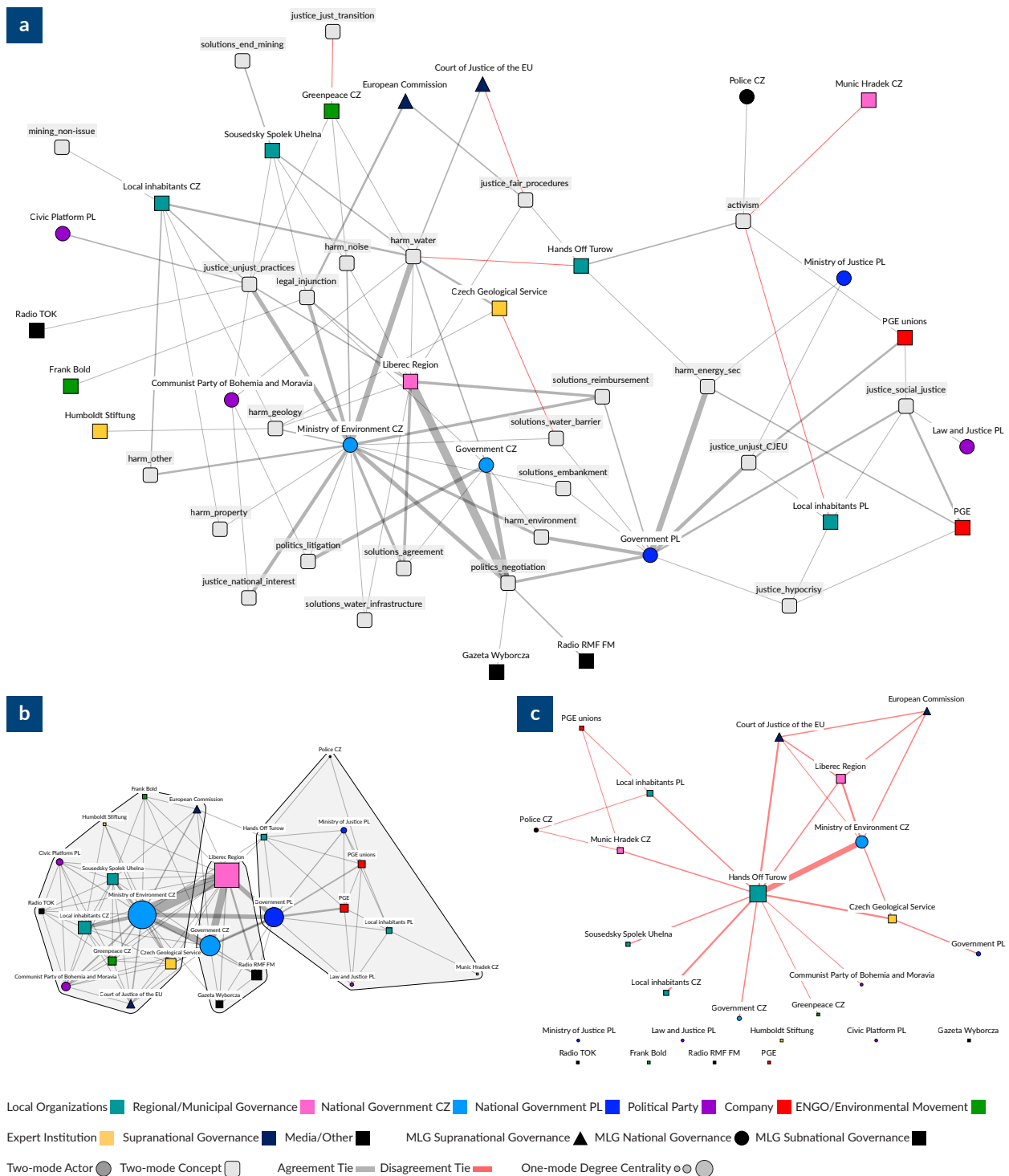


Figure 4. Period 2: (a) two-mode subtract network, (b) one-mode organization congruence network, and (c) one-mode organization conflict network.

From an MLG perspective, the congruence network (Figure 4b) is particularly informative. The first coalition, consisting primarily of the Liberec Region and the Czech government, shows signs of cooperation between regional and national authorities. The second coalition contains Czech actors, with the Czech Ministry of the Environment maintaining interconnections with the first coalition and other actors across governance levels. Interestingly, both the European Commission and the CJEU are present in this coalition, indicating some congruence with Czech actors, although they are relatively weakly connected. The third coalition consists of Polish actors, demonstrating cross-level congruence similar to that observed in previous periods.

The debate expanded in the third period (June 8–September 20, 2021, Figure 5a). The Czech actors proposed appealing to the CJEU to fine Poland for non-compliance, shifting toward legal enforcement rather than purely diplomatic or technical solutions. At the same time, discussions on mitigation measures fragmented, revealing divisions within the Czech side. While Sousedský Spolek Uhelná and Greenpeace CZ called for a full shutdown of the Turów mine, arguing that mining is the primary cause of groundwater depletion, local and national government actors rejected this as unrealistic. Instead, they debated compensation-based solutions, an underground water barrier, and an embankment to reduce environmental harm. However, the Czech Geological Service expressed skepticism about the water barrier's effectiveness.

On the Polish side, PGE, the Ministry of Climate and Environment, and the Niezależny Samorządny Związek Zawodowy Solidarność (Independent Self-Governing Trade Union “Solidarity”) Turów (PGE unions) continued to reject Czech claims, emphasizing justice_social_justice and the economic consequences of halting mining for Bogatynia's workforce. They argued that compliance with the CJEU ruling would result in job losses and energy insecurity, reinforcing their narrative that the dispute constitutes an unfair attack on Polish sovereignty.

Negotiations gained traction as the Czech Ministry of Foreign Affairs and Polish government representatives increasingly framed a diplomatic resolution as the most viable path forward. However, this approach faced resistance from Czech environmental groups and local activists, who demanded stricter EU enforcement and opposed settlements that would allow mining to continue. This period highlights a clear divide among the Czech actors. Whereas the Ministry of the Environment and the Liberec Region focused on negotiations and compensation, environmental NGOs insisted on legal action and the complete cessation of mining, deepening internal tensions within the discourse network.

We expect this increasing tension to underlie the structure of the one-mode projections. The congruence network (Figure 5b) shows alignment among both Czech and Polish government actors—regional (Liberec Region, Municipality of Bogatynia), national (Czech and Polish governments and ministries of environment), and even PGE. The shift of PGE is particularly noteworthy and is likely driven by advocacy for the water barrier as a solution. The second community comprises Greenpeace CZ, Sousedský Spolek Uhelná, local Czech inhabitants, and expert organizations such as the Czech Geological Service and the T.G. Masaryk Water Research Institute (TGM Water Research Institute). The conflict network (Figure 5c) reflects a similar trend, showing growing disagreement over concepts among Czech government actors, environmental NGOs, local actors, and expert institutions.

From an MLG perspective, we observe a marked shift in this period. The congruence network (Figure 5b) shows a reconfiguration of discourse coalitions and a departure from the patterns observed in the previous two periods. The first coalition consists predominantly of local and regional government actors from both

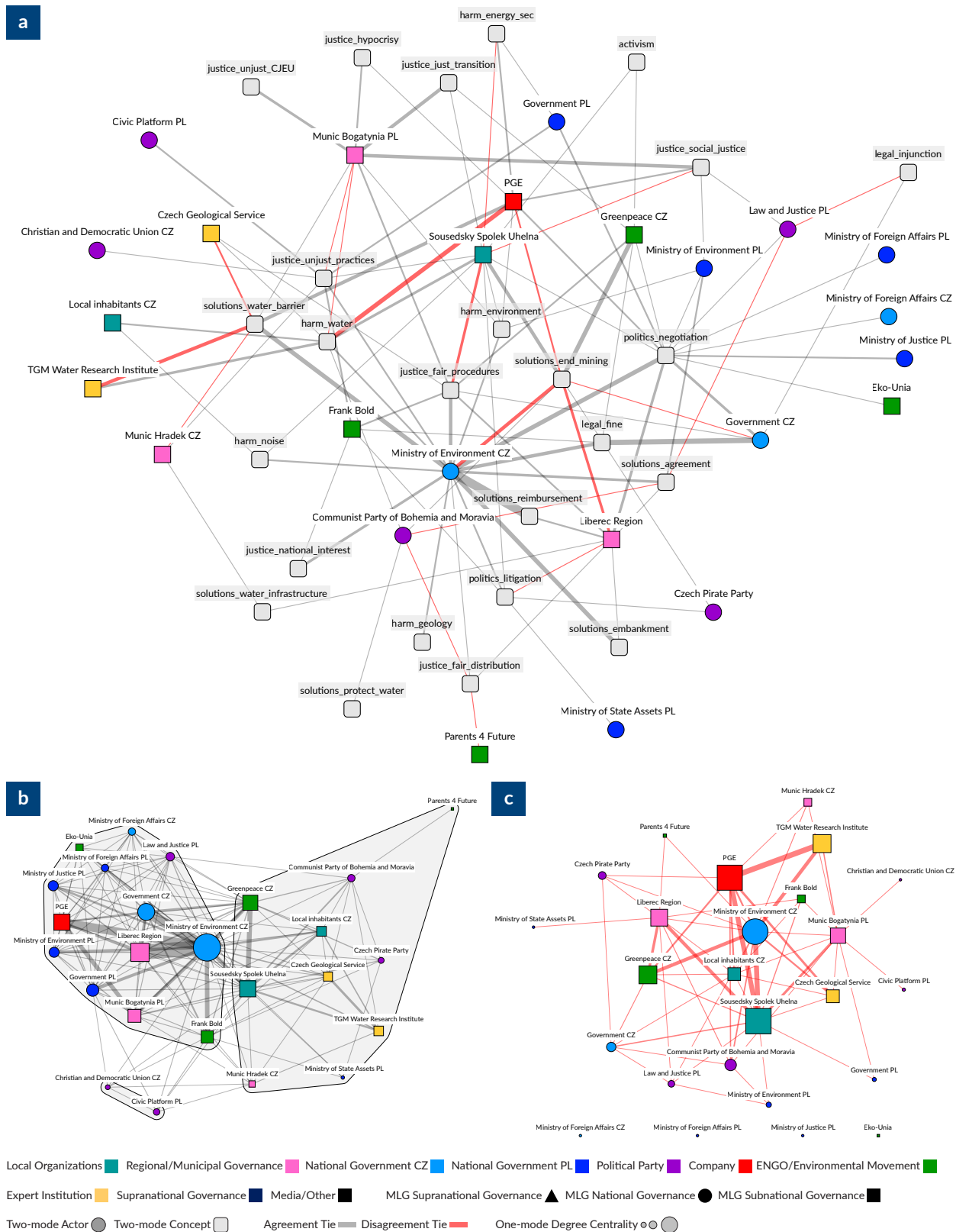


Figure 5. Period 3: (a) two-mode subtract network, (b) one-mode organization congruence network, and (c) one-mode organization conflict network.

Poland and Czechia. Only two strongly connected actors are not regional or national governments: PGE and the Czech environmental law firm Frank Bold. The second coalition comprises local-level actors, the national NGO Greenpeace, and expert organizations. Once again, supranational actors are completely absent during this period, despite the prominence of the debate over fines.

The fourth period (September 21–October 8, 2021, Figure 6a) was marked by the CJEU's decision to impose a €500,000 daily fine on Poland. This shifted the debate toward resolving the Czech–Polish dispute. The Czech Ministry of the Environment, the Liberec Region, and the Czech Ministry of Foreign Affairs pushed for structured negotiations, while the Polish Ministry of Climate and Environment signaled some willingness to engage. However, PGE and Niezależny Samorządny Związek Zawodowy Solidarność Turów continued to reject the ruling, framing it as unjust and harmful to energy security and employment.

As the negotiations took center stage, the Czech government actors prioritized financial compensation and technical measures, such as the underground water barrier. Meanwhile, Greenpeace CZ and Sousedský Spolek Uhelná opposed any settlement that allowed mining to continue, arguing that it failed to address long-term environmental damage.

On the Polish side, resistance remained strong, with PGE and mining unions rejecting compliance and emphasizing sovereignty and economic stability. While some Polish officials explored diplomatic avenues, immediate concessions remained unlikely. This period deepened the divisions within the Czech discourse, as government actors pursued negotiations while environmental groups demanded stricter enforcement. The growing focus on a diplomatic resolution set the stage for the final phase, in which the dispute would either be settled through an agreement or continue as a prolonged legal standoff.

The congruence network projection (Figure 6b) shows a continued split between local and national government actors on the one hand and all other actors on the other. Moreover, congruence is much stronger in this period, as manifested by the intensity of connections among these actors. Sousedský Spolek Uhelná, Greenpeace CZ, local inhabitants, and expert institutions were somewhat sidelined, as noted in the Section 4.2, due to the strong focus of local and national government actors on ongoing negotiations. As a result of this sidelining, there are fewer strong ties in the conflict network. Nevertheless, the conflict network (Figure 6c) remains similar to the previous period, with Greenpeace CZ and Sousedský Spolek Uhelná in disagreement with the Liberec Region and the Czech Ministry of the Environment.

The reorganization of actors into two coalitions—one composed of local and national government actors and the other containing the remaining actors—is also observed in this period. The first coalition includes both Polish and Czech actors, as in the previous period. Interestingly, the second coalition contains not only NGOs such as Greenpeace CZ and local actors like Sousedský Spolek Uhelná, but also the CJEU.

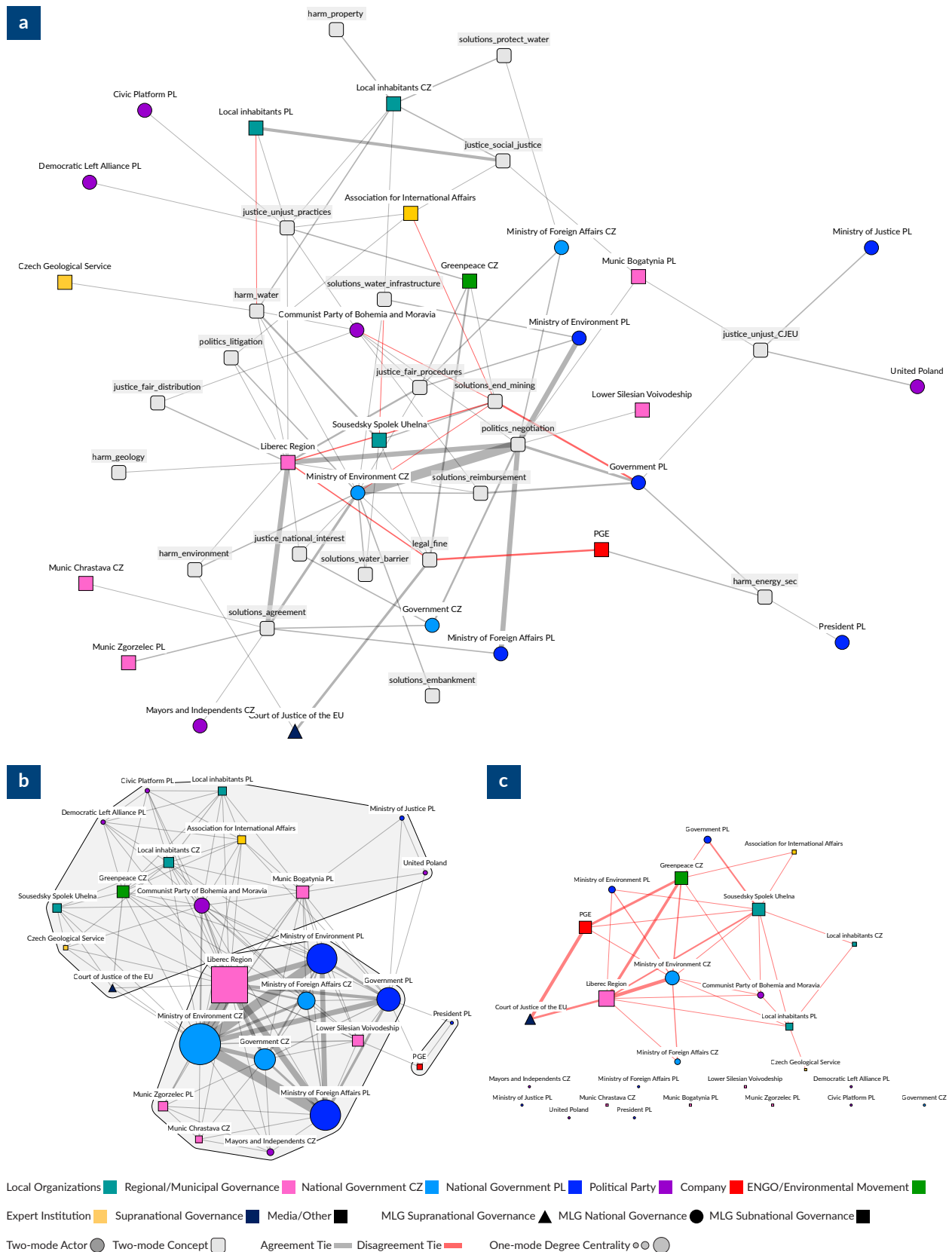


Figure 6. Period 4: (a) two-mode subtract network, (b) one-mode organization congruence network, and (c) one-mode organization conflict network.

The final, fifth period (October 9, 2021–February 3, 2022, Figure 7a) was dominated by negotiations. The Liberec Region, municipal authorities, and the Czech Ministry of Foreign Affairs pushed for a formal agreement to avoid a deadlock. Discussions focused almost entirely on reimbursement, sidelining broader environmental or technical solutions.

Greenpeace CZ and Sousedský Spolek Uhelná opposed the deal, arguing that the terms matter more than simply reaching an agreement. They advocated for EU legal action over bilateral compensation and continued to emphasize the harm to water, rejecting the underground water barrier in line with expert concerns. On the Polish side, PGE and the mining unions remained firm, defending Turów's economic importance. While some Polish officials engaged in talks, the focus remained on sovereignty and energy security rather than compliance.

This period solidifies divisions among the Czech actors: Government officials prioritized securing a deal, while environmental groups pushed for stricter enforcement, leaving unresolved tensions despite the eventual agreement.

The division is clearly manifested in both one-mode projections. Czech and Polish governments, ministries of environment, and the Liberec Region form a congruence community (Figure 7b) focused on resolving the issue. They are joined by other municipalities, creating a clear government coalition of regional and national actors. On the other side, a coalition of environmental organizations, local inhabitants, and Sousedský Spolek Uhelná is joined by expert institutions. Interestingly, this community also includes the Polish Ministry of Foreign Affairs, represented by a Polish ambassador in Czechia, who surprisingly criticized the Polish government and aligned with the claims of this coalition. The conflict network (Figure 7c) clearly reflects a more vigorous disagreement between local and environmental NGO actors on one side and local and national government actors on the other, most prominently, the Liberec Region.

From the structure of the coalitions, the same pattern observed in periods 3 and 4 is evident. One coalition consists of local and regional government actors, while the other comprises all the remaining actors. The Liberec Region and the Czech and Polish ministries and governments are the most prominent actors in the first coalition. The second coalition includes local actors, NGOs, and expert institutions. Two small deviations are notable: The European Commission is a member of the first coalition, likely due to its insistence on fines, and the previously mentioned Polish Ministry of Foreign Affairs aligns with this second coalition.

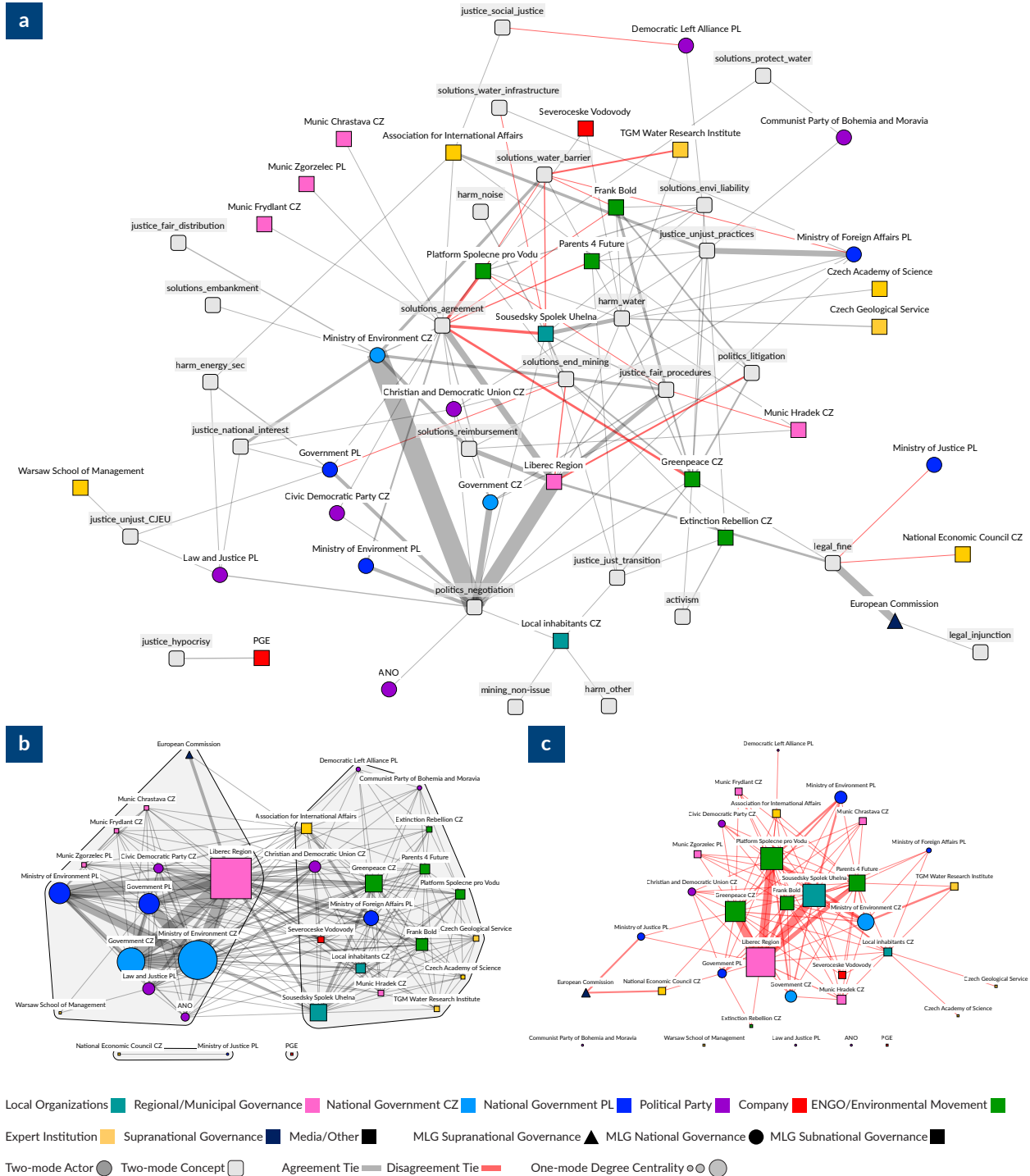


Figure 7. Period 5: (a) two-mode subtract network, (b) one-mode organization congruence network, and (c) one-mode organization conflict network.

5. Discussion and Conclusion

To start the discussion, we will briefly summarize our conclusions. In the first period (February 26–May 21, 2021), the conflict exhibited Type II (polycentric) MLG characteristics. Subnational state actors, particularly the Liberec Region, along with non-state actors, such as Greenpeace CZ, Sousedský Spolek Uhelná, and

affected local residents, emerged together as influential voices. Their communication was primarily driven by a clearly defined environmental agenda, fostering a discourse spanning multiple governance levels. Alternatively, this could be seen as a situation where Type I actors (national and subnational state actors) were joined by other subnational actors, creating a short period of Type II governance, with one notable exception—the peripheral status of supranational actors, especially the European Commission and the CJEU. In the second (May 22–June 7, 2021) and the third period (June 8–September 20, 2021), the governance structure shifted from Type II toward Type I (hierarchical). Following the CJEU's interim ruling, interactions between national governments and regional authorities were increasingly dominant, marginalizing NGOs and local actors. Two distinct coalitions emerged: one led by national and regional state authorities advocating diplomatic solutions and another comprising NGOs and local groups demanding EU law enforcement. In the final two periods (September 21, 2021–February 3, 2022), Type I governance further solidified. The CJEU's financial penalties strengthened intergovernmental negotiations, marginalizing subnational non-state and supranational actors. Network centrality confirms this dominance of state structures (both national and regional), with national state authorities ultimately signing a final agreement that emphasized financial compensation and the mitigation of harms from continuing mining. This effectively disregarded the demands of local actors and NGOs in the final stages. These observations align with published empirical research (Polko et al., 2024; Žuk & Žuk, 2022).

We identified three main contributions of the article that merit discussion. The first two provide an answer to the first research question, while the third addresses the second research question.

First, from the MLG perspective, the shift from Type II (Hooghe & Marks, 2003; Piattoni, 2009) to Type I is well in line with observations of the possible reversibility of MLG (Di Gregorio et al., 2019; Hale & Roger, 2013). We believe that this within-case shift further nuances the Type I/Type II distinction, showing that in specific cases, both types can coexist within a single case. First two periods demonstrated this well—the national and sub-national actors were joined by actors from other levels. Especially interesting is the fact that the gradual shift did not occur due to alterations in the institutional context. The formal competencies of the policy actors remained the same throughout the conflict. What changed instead were the discursive struggles and resulting positions of the actors toward the issue, observed through discourse coalitions. These changes over time also altered the extent to which we could see “the state unravelling.”

Second, we posit that the recentralization of authority might be sector-specific. Czechia's energy sector is relatively centralized (Černoch, 2019), with strong incumbent energy companies (Černý & Ocelík, 2020) and deep cleavages in the governance of coal issues (Ocelík et al., 2019), making the return to Type I possibly easier than in other sectors. In line with the discourse-centered perspectives in which issue definition structures feasible policy responses (Hajer, 1995), our results partially suggest that Czech state actors could be more receptive to Polish arguments presenting Turów as a matter of Poland's energy security, strategic development, and social stability, because the Czech coal sector possibly faces similar challenges. However, confirmation of this mechanism requires additional and more focused research on the diffusion and acceptability of those arguments.

Third, understanding how the MLG governance evolved shows the utility of investigating both environmental policy networks in general and environmental discourse networks in particular. The network perspective shows clearly that institutional competencies may not mirror networked influence

(Papadopoulos et al., 2024; Tortola, 2017), as evidenced by the divergence between formal competencies and the informal influence of actors in the early phase (February 26–May 21, 2021). While the formal authority resided primarily with the Czech government, there was substantial informal influence from subnational state and non-state actors (Liberec Region, Greenpeace CZ, local associations). For example, citizen appeals highlighting governmental inaction and the failure to defend Czech interests increased the political costs of unresponsiveness and expanded the coalition's bargaining leverage.

In addition to the three main contributions of the article, we identify several observations that invite further research.

First, the role of the regional government—Liberec Region—should be highlighted. We posit that this subnational state actor was pivotal to the conflict dynamic: It positioned itself in line with the national government and was instrumental in the recentralization of power in later periods. Thanks to its presence in the negotiation process, the national government was ultimately able to circumvent local organizations, environmental NGOs, and expert institutions, while framing the regional government's involvement as a genuine representation of local actors. This dual role is evident in its centrality: Although highly connected, the Liberec Region ultimately sided with national government actors, pushing for an agreement and deflecting demands from local and non-governmental actors.

Despite limited *de jure* capacities, the local policy actors assembled an effective coalition by framing the dispute in terms salient to local residents (groundwater depletion), activating both national bodies that brought the case to the CJEU, as well as mobilizing environmental and climate activists, who attempted to build international partnerships and reach a broader platform. This resembles the boomerang effect (Keck & Sikkink, 1998), whereby subnational actors attempt to circumvent national actors and target supranational bodies, with a notable exception. In our case, discursive alignment of actors together with the CJEU's favorable decisions towards Czechia suggest that both national and supranational institutions were open to subnational requests, especially in the first and possibly also in the second phase. Sikkink describes such constellation as an “insider-outsider coalition” instead of the “boomerang effect” in her later work (Sikkink, 2005). We invite further investigation to evaluate the presence and the nature of this effect.

The next noteworthy observation is the discursive absence of the EU and its institutions in the Czech discourse. Although the MLG literature highlights the upward reallocation of authority to supranational bodies and the empowerment of non-state and subnational state actors, in our case the EU appears surprisingly absent. The CJEU's orders increased the Czech side's leverage; however, EU institutions were quickly sidelined by national state actors and did not seek to re-enter the dispute, despite its systemic importance. One plausible explanation is the technocratic framing of the case as a matter of Environmental Impact Assessment procedure and narrow technical fixes, which channeled resolution into intergovernmental bargaining. In any event, the EU's limited structural role here points to a dynamic within MLG that merits further exploration.

The case exhibits an interesting dilemma from the perspective of local actors and environmental NGOs. In Czechia, where climate skepticism remains relatively widespread at the political level (Ocelík, 2022), these actors appear to have adopted a pragmatic strategy in the early phase of the conflict. By foregrounding immediate, tangible harms such as groundwater depletion, they secured broader public and institutional support and thus leverage—a strategy observed in Czechia before (Černoch et al., 2019). In turn, the national

and subnational state institutions embraced this framing in this case—partly at the expense of international commitments and, in the case of the Ministry of the Environment, arguably its core purpose. This convergence produced a technocratic, locally grounded discourse centered on groundwater availability, aquifer recharge, and mining-related noise and light pollution. This narrowing of the problem definition in turn constrained the scope of deliberation. Technological fixes—above all, the construction of an underground water barrier, a water supply system, and financial compensation—came to dominate the later phases of the conflict and enabled national and regional authorities to sideline both domestic non-state actors (including expert bodies and environmental NGOs) as well as EU institutions. The consequences were particularly adverse for environmental NGOs and some local organizations. The initial tactical concession in framing became likely a strategic loss in the end, unlike in similar Czech cases before (Černoch et al., 2019). Unable to convert momentum into broader goals, such as ending or sharply curtailing coal extraction and combustion near the Czech border or building durable cross-border coalitions, they were confronted with a final agreement that effectively legitimized continued mining, with a narrowly anthropocentric focus on water availability, noise, and dust. Furthermore, future attempts to reopen the issue are likely to be deflected by reference to an already-concluded settlement. All this invites further in-depth investigation.

Lastly, the article did not address the political affinity of the actors involved in the conflict. In Czechia, the elections brought a notable shift in general political direction, with the cabinet of Andrej Babiš replaced by that of Petr Fiala. Our data do not suggest that this change of government had a major effect on discourse networks (period 4, immediately before, compared to period 5, after). The observed and discussed shifts occurred well before the elections instead. However, this observation should be elaborated further in future research.

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Conflict of Interests

The authors declare no conflict of interests.

Data Availability

The final network data are available on request.

LLMs Disclosure

The article used ChatGPT’s free version for language editing and shortening parts of the text during the writing and review process. The authors did not use the model for any other task.

Supplementary Material

Supplementary material for this article is available online in the format provided by the authors (unedited).

References

- Abnett, K., & Barteczko, A. (2021, May 21). EU's top court orders Poland to halt lignite mining at Turow. *Reuters*. <https://www.reuters.com/business/energy/eus-top-court-orders-poland-halt-lignite-mining-turow-2021-05-21>
- Barrat, A., Barthelemy, M., Pastor-Satorras, R., & Vespignani, A. (2003). *The architecture of complex weighted networks*. arXiv. <https://doi.org/10.48550/arXiv.cond-mat/0311416>
- Betsill, M. M., & Bulkeley, H. (2006). Cities and the multilevel governance of global climate change. *Global Governance*, 12(2), 141–159.
- Blondel, V. D., Guillaume, J.-L., Lambiotte, R., & Lefebvre, E. (2008). Fast unfolding of communities in large networks. *Journal of Statistical Mechanics: Theory and Experiment*, 2008, Article P10008. <https://doi.org/10.1088/1742-5468/2008/10/P10008>
- Böhm, H., Novotný, L., & Kurowska-Pysz, J. (2025). Impact of the Czech–Polish intergovernmental Turów dispute on mental distance and cross-border integration: Avoiding problems, or neighbours? *European Urban and Regional Studies*, 32(1), 76–90. <https://doi.org/10.1177/09697764241244683>
- Borgatti, S. P., Everett, M. G., & Johnson, J. C. (2018). *Analyzing social networks* (2nd ed.). Sage.
- Boykoff, M. T., & Boykoff, J. M. (2004). Balance as bias: Global warming and the US prestige press. *Global Environmental Change*, 14(2), 125–136. <https://doi.org/10.1016/j.gloenvcha.2003.10.001>
- Brandes, U., & Wagner, D. (2016). *Visone—Analysis & visualization of social networks* [Computer software]. <http://www.visone.ethz.ch/html/download.html>
- Brockhaus, M., & Di Gregorio, M. (2014). National REDD+ policy networks: From cooperation to conflict. *Ecology and Society*, 19(4), Article 14. <https://doi.org/10.5751/ES-06921-190414>
- Černoch, F. (2019). The history of the Czech energy sector. In T. Vlček (Ed.), *The history of the Czech energy sector* (pp. 28–43). Masaryk University Press.
- Černoch, F., Lehotský, L., Ocelík, P., Osička, J., & Vencourová, Ž. (2019). Anti-fossil frames: Examining narratives of the opposition to brown coal mining in the Czech Republic. *Energy Research & Social Science*, 54, 140–149. <https://doi.org/10.1016/j.erss.2019.04.011>
- Černý, O., & Ocelík, P. (2020). Incumbents' strategies in media coverage: A case of the Czech coal policy. *Politics and Governance*, 8(2), 272–285. <https://doi.org/10.17645/pag.v8i2.2610>
- Clinton, P., & Arregui, J. (2024). Infringements of European Union law at the local and regional level across member states. *European Policy Analysis*, 10(2), 188–205. <https://doi.org/10.1002/epa2.1201>
- Csardi, G., & Nepusz, T. (2006). *The igraph software package for complex network research*. <https://igraph.org>
- Daniell, K., & Kay, A. (Eds.). (2018). *Multi-level governance: Conceptual challenges and case studies from Australia*. ANU Press. <https://doi.org/10.22459/mg.11.2017>
- Di Gregorio, M., Fattorelli, L., Paavola, J., Locatelli, B., Pramova, E., Nurrochmat, D. R., May, P. H., Brockhaus, M., Sari, I. M., & Kusumadewi, S. D. (2019). Multi-level governance and power in climate change policy networks. *Global Environmental Change*, 54, 64–77. <https://doi.org/10.1016/j.gloenvcha.2018.10.003>
- Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43(4), 51–58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
- Fairclough, N. (1993). *Discourse and social change*. Wiley.
- Fischer, F. (2003). *Reframing public policy: Discursive politics and deliberative practices*. Oxford University Press. <https://doi.org/10.1093/019924264X.001.0001>

- Fox, H. (2023, May 23). Repeat offenders: Coal power plants top the EU emitters list. *EMBER*. <https://ember-energy.org/latest-insights/eu-ets-2022>
- Freeman, L. C. (1978). Centrality in social networks: Conceptual clarification. *Social Networks*, 1(3), 215–239. [https://doi.org/10.1016/0378-8733\(78\)90021-7](https://doi.org/10.1016/0378-8733(78)90021-7)
- Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. University of California Press.
- Gupta, J. (2007). The multi-level governance challenge of climate change. *Environmental Sciences*, 4(3), 131–137. <https://doi.org/10.1080/15693430701742669>
- Hadjiyianni, I. (2020). Multi-level governance in action: Access to justice in national courts in light of the Aarhus Convention. *European Public Law*, 26(4), 889–920. <https://doi.org/10.54648/euro2020070>
- Hajer, M. (1993). Discourse coalitions and the institutionalization of practice. In F. Fischer & J. Forester (Eds.), *The argumentative turn in policy analysis and planning* (1st ed., pp. 43–76). Duke University Press. <https://doi.org/10.1215/9780822381815-003>
- Hajer, M. (1995). *The politics of environmental discourse: Ecological modernization and the policy process* (1st ed.). Oxford University Press.
- Hajer, M. (2006). Doing discourse analysis: Coalitions, practices, meaning. In M. van den Brink & T. Metze (Eds.), *Words matter in policy and Planning: Discourse theory and method in the social sciences* (pp. 65–74). Koninklijk Nederlands Aardrijkskundig Genootschap.
- Hale, T., & Roger, C. (2013). Orchestration and transnational climate. *The Review of International Organizations*, 9, 59–82. <https://doi.org/10.1007/s11558-013-9174-0>
- Haunss, S., & Hollway, J. (2022). Multimodal mechanisms of political discourse dynamics and the case of Germany's nuclear energy phase-out. *Network Science*, 11(2), 205–223. <https://doi.org/10.1017/nws.2022.31>
- Hooghe, L., & Marks, G. (2003). Unraveling the central state, but how? Types of multi-level governance. *American Political Science Review*, 97(2), 233–243. <https://doi.org/10.1017/S0003055403000649>
- Keck, M. E., & Sikkink, K. (1998). *Activists beyond borders: Advocacy networks in international politics*. Cornell University Press.
- Kern, F., & Rogge, K. S. (2018). Harnessing theories of the policy process for analysing the politics of sustainability transitions: A critical survey. *Environmental Innovation and Societal Transitions*, 27, 102–117. <https://doi.org/10.1016/j.eist.2017.11.001>
- Krippendorff, K. (2013). *Content analysis*. Sage.
- Kurowska-Pysz, J., Łaźniewska, E., Böhm, H., & Boháč, A. (2022). Cross-border cooperation in the shadow of crisis—The Turów coalmine case. *Journal of International Studies*, 15(4), 43–63. <https://doi.org/10.14254/2071-8330.2022/15-4/3>
- Lancichinetti, A., & Fortunato, S. (2009). Community detection algorithms: A comparative analysis. *Physical Review E*, 80(5), Article 056117. <https://doi.org/10.1103/PhysRevE.80.056117>
- Łaźniewska, E., Boháč, A., & Kurowska-Pysz, J. (2023). Asymmetry as a factor weakening resilience and integration in the sustainable development of the Polish-Czech borderland in the context of the dispute about the Turów mine. *Problemy Ekorozwoju*, 18(1), 139–151. <https://doi.org/10.35784/pe.2023.1.14>
- Leifeld, P. (2013). Reconceptualizing major policy change in the advocacy coalition framework: A discourse network analysis of German pension politics. *Policy Studies Journal*, 41(1), 169–198. <https://doi.org/10.1111/psj.12007>
- Leifeld, P. (2016). Discourse network analysis. In J. N. Victor, A. H. Montgomery, & M. Lubell (Eds.), *The Oxford handbook of political networks* (1st ed., pp. 301–326). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190228217.013.25>

- Leifeld, P. (2019). *Discourse network analyzer*.
- Leifeld, P., & Haunss, S. (2012). Political discourse networks and the conflict over software patents in Europe. *European Journal of Political Research*, 51(3), 382–409. <https://doi.org/10.1111/j.1475-6765.2011.02003.x>
- Markard, J., Rinscheid, A., & Widdel, L. (2021). Analyzing transitions through the lens of discourse networks: Coal phase-out in Germany. *Environmental Innovation and Societal Transitions*, 40, 315–331. <https://doi.org/10.1016/j.eist.2021.08.001>
- Nagel, M., & Bravo-Laguna, C. (2022). Analyzing multi-level governance dynamics from a discourse network perspective: The debate over air pollution regulation in Germany. *Environmental Sciences Europe*, 34(1), Article 62. <https://doi.org/10.1186/s12302-022-00640-0>
- Neal, Z. (2014). The backbone of bipartite projections: Inferring relationships from co-authorship, co-sponsorship, co-attendance and other co-behaviors. *Social Networks*, 39, 84–97. <https://doi.org/10.1016/j.socnet.2014.06.001>
- Ocelík, P. (2022). Climate change scepticism in front-page Czech newspaper coverage: A one man show. In D. Tindall, M. C. J. Stoddart & R. E. Dunlap (Eds.), *Handbook of anti-environmentalism* (1st ed., pp. 84–106). Edward Elgar Publishing. <https://doi.org/10.4337/9781839100222.00013>
- Ocelík, P., Svobodová, K., Hendrychová, M., Lehotský, L., Everingham, J.-A., Ali, S., Badera, J., & Lechner, A. (2019). A contested transition toward a coal-free future: Advocacy coalitions and coal policy in the Czech Republic. *Energy Research & Social Science*, 58, Article 101283. <https://doi.org/10.1016/j.erss.2019.101283>
- Ondráček, T., Łupkowski, P., & Urbański, M. (2024). Mines, environment, questions, and disagreements: An analysis of the Turów coal mine disputes. *Discourse & Society*, 35(6), 791–812. <https://doi.org/10.1177/09579265241247284>
- Papadopoulos, Y. (2005). Taking stock of multi-level governance networks. *European Political Science*, 4(3), 316–327. <https://doi.org/10.1057/palgrave.eps.2210032>
- Papadopoulos, Y., Tortola, P. D., & Geyer, N. (2024). Taking stock of the multilevel governance research programme: A systematic literature review. *Regional & Federal Studies*. Advance online publication. <https://doi.org/10.1080/13597566.2024.2334470>
- Piattoni, S. (2009). Multi-level governance: A historical and conceptual analysis. *Journal of European Integration*, 31(2), 163–180. <https://doi.org/10.1080/07036330802642755>
- Piattoni, S. (2010). *The theory of multi-level governance: Conceptual, empirical, and normative challenges*. Oxford Academic. <https://doi.org/10.1093/acprof:oso/9780199562923.001.0001>
- Polko, P., Kurowska-Pysz, J., Łażniewska, E., & Boháč, A. (2024). Cross-border security discourse in the Polish-Czech dispute over coal mine in Turów (Poland). *Slavonica*, 29(2), 61–75. <https://doi.org/10.1080/13617427.2025.2475425>
- R Core Team. (2017). *R: A Language and Environment for Statistical Computing* [Computer software]. R Foundation for Statistical Computing. <https://www.r-project.org>
- Rennkamp, B., Haunss, S., Wongs, K., Ortega, A., & Casamadrid, E. (2017). Competing coalitions: The politics of renewable energy and fossil fuels in Mexico, South Africa and Thailand. *Energy Research & Social Science*, 34, 214–223. <https://doi.org/10.1016/j.erss.2017.07.012>
- Rivas, C. (2012). Coding and analysing qualitative data. In C. Seale (Ed.), *Researching society and culture* (pp. 367–392). Sage.
- Roper, J., Ganesh, S., & Zorn, T. E. (2016). Doubt, delay, and discourse: Skeptics' strategies to politicize climate change. *Science Communication*, 38(6), 776–799. <https://doi.org/10.1177/1075547016677043>

- Ruzza, C. (2007). *Europe and civil society: Movement coalitions and European governance*. Manchester University Press.
- Saldaña, J. (2016). *The coding manual for qualitative researchers*. Sage.
- Schaub, S., & Metz, F. (2020). Comparing discourse and policy network approaches: Evidence from water policy on micropollutants. *Politics and Governance*, 8(2), 184–199. <https://doi.org/10.17645/pag.v8i2.2597>
- Sikkink, K. (2005). Patterns of dynamic multilevel governance and the insider-outsider coalition. In D. Della Porta & S. Tarrow (Eds.), *Transnational protest and global activism* (1st ed., pp. 151–173). Rowman & Littlefield.
- Smoleń, M., Kubiczek, P., & Raczka, J. (2024). *The decline of coal in Turów: The region needs the Just Transition Plan – Executive Summary*. Instrat. <https://instrat.pl/wp-content/uploads/2024/12/Instrat-Policy-Paper-05-2024-The-decline-of-coal-in-Turow-Exec-summary.pdf>
- Sobota, M., Albrecht, E., Tokarczyk-Dorociak, K., & Jawecki, B. (2024). The Czech Republic v Poland (Mine de Turów): Politics and implementation of the EU Water Framework Directive. *Review of European, Comparative & International Environmental Law*, 33(3), 662–666. <https://doi.org/10.1111/reel.12568>
- Stephenson, P. (2013). Twenty years of multi-level governance: ‘Where does it come from? What is it? Where is it going?’ *Journal of European Public Policy*, 20(6), 817–837. <https://doi.org/10.1080/13501763.2013.781818>
- Tortola, P. D. (2017). Clarifying multilevel governance. *European Journal of Political Research*, 56(2), 234–250. <https://doi.org/10.1111/1475-6765.12180>
- Traag, V. A., Waltman, L., & van Eck, N. J. (2019). From Louvain to Leiden: Guaranteeing well-connected communities. *Scientific Reports*, 9(1), Article 5233. <https://doi.org/10.1038/s41598-019-41695-z>
- Wasserman, S., & Faust, K. (1994). *Social network analysis*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511815478>
- World Wildlife Foundation. (2005). *Dirty Thirty—Europe’s worst climate polluting power stations*. <https://wwfeu.awsassets.panda.org/downloads/dirty30rankingfinal260905.pdf>
- Wróblewski, Ł., Boháč, A., & Böhm, H. (2023). The Turów coal mine international dispute as a determinant of the cross-border integration of inhabitants of the Polish-Czech border. *Moravian Geographical Reports*, 31(4), 203–213. <https://doi.org/10.2478/mgr-2023-0019>
- Yang, Z., Algesheimer, R., & Tessone, C. J. (2016). A Comparative analysis of community detection algorithms on artificial networks. *Scientific Reports*, 6(1), Article 30750. <https://doi.org/10.1038/srep30750>
- Žuk, P. (2023). The sense of socio-economic threat and the perception of climate challenges and attitudes towards energy transition among residents of coal basins: The case of Turoszów Basin in Poland. *Resources Policy*, 82, Article 103509. <https://doi.org/10.1016/j.resourpol.2023.103509>
- Žuk, P., & Žuk, P. (2022). The Turów Brown Coal Mine in the shadow of an international conflict: Surveying the actions of the European Union Court of Justice and the populist policies of the Polish government. *The Extractive Industries and Society*, 10, Article 101054. <https://doi.org/10.1016/j.exis.2022.101054>

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Relational Processes and Networks in Environmental Politics

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Abstract

The inherently relational nature of environmental politics has stimulated the growth of network-oriented research. This concluding commentary emphasizes relationality in environmental political processes as central to understanding multilevel, multi-actor socio-ecological polities. We consider the dual role of networks—both as connecting structures and as prisms of cognitive and symbolic interactions that co-constitute identities and value systems—which shape and govern environmental outcomes. Building on the contributions of this issue, we outline a research agenda that advances network-based inquiry by unpacking the interdependent and dynamic processes linking environmental political networks across diverse entities, subdomains, scales, and contexts, while leveraging recent methodological advancements in network research.

Keywords

discourse networks; environmental movements; environmental political networks; environmental politics; political opportunities; political process; policy networks; social network analysis

1. Introduction

Across the globe, environmental challenges connect diverse—often competing—interests, value systems, forms of knowledge, and unevenly distributed costs. These challenges manifest across multiple scales, from local to global, and include complex “glocal” dynamics linking the two (Gupta et al., 2007). They take varied forms: from the innovative tactics of youth climate strikes, to far-right actors’ mobilization of eco-bordering

discourses to justify anti-migration policies (Turner & Bailey, 2021), to risk-management-oriented adaptation policies designed for populations facing acute climate vulnerabilities (Boin et al., 2021; Thalheimer et al., 2025). In such cases, political, socio-economic, and ecological concerns compound one another. Consequently, efforts to govern environmental challenges—both in terms of means and solutions—are shaped by heterogeneous actors and practices, including discourses and forms of action, which intersect across multiple political arenas and socio-ecological contexts (Barnes et al., 2017).

Moreover, environmental action and policy frameworks have expanded substantially over the past two decades. Considering the case of sustainable food systems—one of the most contested issues in environmental politics (Nagel et al., 2025; Prota, 2022): Community gardens, zero-waste initiatives, and alternative modes of producing, distributing, and consuming food have proliferated alongside democratic and policy innovations such as deliberative fora, the formal recognition of the right to sustainable food access, and the introduction of the new global plastic treaty (Lorenzini, 2022; Newig et al., 2019; Yates et al., 2025). Taken together, these developments highlight a growing emphasis on adaptive innovation within environmental governance. Yet, even when addressed in isolation, such environmental challenges remain entangled with broader intersectoral and transboundary concerns. Health-oriented efforts and sustainable practices addressing climate impacts on agriculture intersect—and at times clash—with prevailing notions of food security, food justice and sovereignty, as well as with climate mitigation objectives (IPCC, 2019; McCarthy et al., 2013). These intricate dynamics, characterized by trade-offs and synergies, show that environmental challenges are embedded in interdependent, multi-level, and multi-actor networks shaped by institutions that reach beyond market forces to include overlapping political and socio-ecological contexts (Barnes et al., 2017; Di Gregorio et al., 2017, 2019; K. R. Schneider et al., 2025).

2. Relational Environmental Politics

Building on the abovementioned premises, our approach to environmental politics underscores the inherently relational and political character of environmental problems and solutions. We understand environmental politics as a dynamic and complex system of collaboration, negotiation, contestation, and conflict aimed at addressing socio-ecological dilemmas. Such a system encompasses organizing principles, structures, actors, discourses, values, and forms of action (Alexander, 2014; Leftwich, 2004). Environmental politics can thus be understood as an ongoing set of relational processes guided by shared—though not necessarily consensual—heuristics, including both pro and anti-environmental beliefs, norms, understandings, and strategies. Through these, environmental political practices and arrangements, as well as socio-ecological transformations are continuously (re)produced, contested, and reshaped (Kenney-Lazar et al., 2023; Knoke et al., 2021).

Environmental politics thus emerges simultaneously as both a product and a process of countless political and socio-environmental relational acts, persisting only through their continual re-enactment (Diani, 2022). It is therefore actor-driven and structurally contingent under some degree of relational continuity. This understanding of relationality draws on three key features identified by Dépelteau (2018) and Kenney-Lazar et al. (2023). First, interdependence in social life and society-environment relations manifests through overlapping and intersecting networks that often reveal unequal and exclusionary power relations. Second, actors' interactions with one another and with nature constitute social meaning and shape the technologies of rule that govern these interactions. Third, the co-production of social life and society-environment relations emerges from the interplay between actors and non-agentic entities, including nature. These

relational dynamics shift as social and power configurations are negotiated, contested, transformed or sustained.

Our proposed examination of relationality in environmental politics rests on a dual linkage between environmental political processes and network approaches. First, it entails investigating the environmental political processes through which power relations are continuously (re)configured and situated within and across institutional and extra-institutional arenas and scales of action. This perspective builds upon—but also moves beyond—the classical political process approach in social movement studies (McAdam et al., 2001), as well as the actor-oriented and institutions-oriented policy process approaches (Sabatier, 2007). Second, network approaches can examine the relational dynamics and processes underlying the ongoing constitution of political actors and the shifting configurations of power among them (Abbott, 2007; McAdam et al., 2001).

3. Relational Environmental Political Processes

Scholars of the political process tradition have long underscored how the interplay among actors, resources, networks (mobilizing structures and resources), value systems, discourses, narratives (frames and interpretive tools), and the broader political context (political opportunities) shapes the inputs and outcomes of political action (McAdam & Tarrow, 2018; McFarland, 2004). These dimensions have been further explored in environmental discourse network and environmental movement network studies (Diani, 2015; Saunders, 2009). More recently, environmental policy network research has begun to develop the concept of political opportunity within the Advocacy Coalition Framework, advancing explanations of cross-national variation in environmental policy coordination by linking coalition opportunity structures—understood as institutional contexts—to actors' beliefs and strategies, which in turn shape coalition behavior (Ingold et al., 2025; Satoh et al., 2025).

Yet, institutional and extra-institutional perspectives on political processes fall short of their own analytical aspirations—especially in capturing the dynamic, relational character of politics (Tarrow, 2011), as it evolves through interaction and feedback loops among actors and their shared heuristics, all embedded within broader political systems. With notable exceptions, these approaches have also struggled to account for the interdependence and networking practices linking institutional and extra-institutional politics, where mobilization unfolds alongside, in tension with, or in tandem with formal policy-making (Diani & Pilati, 2011).

As such, process-relational perspectives on environmental politics underscore how political life is inherently dynamic and co-constituted through ongoing interactions among diverse actors, practices, and arenas. They highlight how agency, meaning-making, and power are continuously (re)configured through recursive processes that cut across scales, domains, and organizational principles. Such an approach does not preclude bounded or domain-specific analyses—which illuminate particular mechanisms or settings—but underlines that even seemingly contained political processes are embedded in broader relational fields (Broadbent, 2024; Crossley & Diani, 2018; V. Schneider, 2025).

From this angle, the often-invoked boundaries between institutional and extra-institutional environmental politics constitute one among many provisional distinctions operating within complex systems—merely an expression in a broader network of interdependencies. Research shows, for example, that interactions

between protest movements and institutional politics are central to the formation of movement-party alliances and the configuration of societal divides, particularly in multi-level, multi-actor polities (Hutter & Kriesi, 2019). Climate and environmental actions—ranging from mass marches to community-based initiatives—prompt institutional responses, reshape alliances, and generate new interpretive frames (Ciordia et al., 2025). Due to their porous nature, these cross or intraboundary interactions shape the incentives and constraints that influence how actors coordinate, negotiate, contest, or overlook one another, namely, how their power-laden relationships unfold.

Process-relational approaches push us beyond familiar dichotomies—structure versus agency, individual versus society, or nature versus society (Barnes et al., 2020; Bodin et al., 2017; Dépelteau, 2018; Emirbayer, 1997)—by foregrounding the networks linking local interactions to macro-level patterns, which, through repetition, can become regularized and self-reinforcing over time (Coleman, 1986; Martin, 2009). Such relational accounts of political process enable us to trace how environmental politics takes shape within and across networks: “in institutions, in the holes between institutions, and in the spaces where institutions have not yet formed” (Heaney & McClurg, 2009, p. 728).

4. Networks in Relational Environmental Politics

The interdependent nature of environmental politics has stimulated substantial network-oriented research (Scott et al., 2023). To situate relational environmental politics within this perspective, we draw on Podolny’s (2001) distinction between networks as *pipes* and as *prisms*. As pipes, networks constitute the infrastructural channels through which actors coordinate actions and exchange resources. As prisms, networks enable and shape cognitive and symbolic interactions through which actors recognize each other and co-constitute their identities. Across both dimensions, diverse mechanisms shape the micro-interactions that generate, sustain, and dissolve ties—whether due to resource dependencies or symbolic positioning—and importantly, link local interactions to macro-level configurations.

4.1. Networks as Pipes

This perspective underscores Coleman’s (1986) call for explicit analysis of micro-macro relationships. Micro-level decisions, such as interorganizational collaboration, are embedded in and conditioned by broader macro-structures, whether network topologies or political contexts. Conversely, aggregating such decisions yields macro-level outcomes—collective action, coalition structures, or policy outputs—that are themselves networked products and processes. Likewise, the workhorses in network modelling, namely Exponential Random Graph Models and Stochastic Actor-Oriented Models, formalize this assumption by treating macro structures as emergent from locally operating tie-formation mechanisms (Lusher et al., 2013; Snijders et al., 2010).

Existing literature has primarily examined how “pipes” emerge (Ingold & Fischer, 2014; Ocelík, 2022; Ylä-Anttilla et al., 2018), yielding valuable insights into the structural drivers of collaboration (Fischer & Sciarini, 2016) and coalition formation (Howe et al., 2021). Yet, this emphasis risks treating network structure as the explanandum rather than as the infrastructure through which environmental and policy outcomes can be analyzed. Recent methodological advances—such as multi-level (Lazega & Wang, 2023) and multi-modal networks (Knoke et al., 2021)—create opportunities for systematic micro-macro

theorization and analysis that move beyond questions of network emergence and better capture the structural complexity of environmental governance networks and processes.

Although environmental networks and governance are widely recognized as complex systems—interdependent, multi-level, and cross-sectoral (Di Gregorio et al., 2019; Thiel et al., 2019)—other defining features of complexity are far less integrated into empirical research. Feedback processes, adaptive agency, and non-linear trajectories (Byrne & Callaghan, 2013) are often under-examined or treated as external context rather than inherent to network dynamics. Likewise, feedback mechanisms that (de)stabilize network structures, such as depoliticization and hyper-politicization (Feindt et al., 2021), remain insufficiently theorized despite their prominence in adjacent literature (Jacobs & Weaver, 2014; Preiser et al., 2018). Greater attention to the dynamic examination of the non-linear, cumulative, and systemic nature of environmental problems, their macro-level outputs, and the genuinely complex adaptability of environmental networks is essential for understanding how these configurations shape—and are shaped by—decisions surrounding environmental problems and solutions. Such a networked perspective on actors, processes, and institutional settings enables a more systematic assessment of the interdependencies between the inputs, mechanisms, and outcomes of environmental politics.

4.2. *Networks as Prisms*

The network as prism metaphor underscores the role of identity within networks and how ties communicate and construct shared meanings. Beyond conveying information about who actors are, ties also contribute to the formation of collective identities and coalitions around shared beliefs or discourses. This prism dynamic is particularly evident in environmental movement networks and, more broadly, in environmental policy networks.

Environmental politics is anchored in a recognizable value system—environmentalism and associated green ideologies. Within environmental activism, networking serves to disseminate values, foster solidarity, and reinforce collective identities centered on ecocentric and social-justice principles, thereby enabling political mobilization (Diani & McAdam, 2003; Saunders, 2013). Strong ties and dense areas of interaction in environmental movement networks frequently signal shared values (Di Gregorio, 2012). At the same time, these networks exhibit internal divisions—for instance, between radical and reformist factions whose willingness to collaborate shifts over time (Ferro, 2025; Saunders et al., 2025). Analyses of information flows, resource exchanges, and collaborative ties reveal meso-level structures that include both coalition-building dynamics and intra-movement antagonisms and contestation.

While a substantial literature investigates what coalesces environmental movement networks (Giugni & Grasso, 2022; Rootes, 1999), studies of anti-environmentalism have grown in importance amid increasing political polarization (Judge et al., 2023; Tindall et al., 2022). Climate obstructionism is central here, with discourse contestation shaping interactions between movements and countermovements (Brulle et al., 2024). Evidence from British Columbia, for example, shows how interactions among pro-environmental activists inadvertently strengthened countermovement cohesion (Tindall et al., 2020). Investigating the value systems, interpretive frames, and discourse practices of both movements and countermovements helps uncover relational processes in cultural change and conflict. Here, the prism metaphor underscores how ties link actors to ideas and how ideas shape environmental networks. Discourse Network Analysis

(Leifeld, 2016) has become a key tool for studying these dynamics in environmental movement, anti-environmentalism, and environmental policy network research. Ocelík (2022), for instance, uses ideational networks derived from media content to trace the roots of climate skepticism in the Czech Republic, showing how anti-environmentalism intensified during President Klaus' tenure.

Policy network analysis has demonstrated sustained interest in both networks as pipes and as prisms. Climate policy network research, for example, shows how ideological polarization shapes the selection of expert information in the United States (Jasny & Fisher, 2019), how subnational actors contribute to polarization and policy stagnation (Fisher & Leifeld, 2019), and how climate polarization is leveraged for electoral gain (Leifeld & Fisher, 2025). Social media analyses have also broadened beyond Twitter. Stoddart et al. (2024) show that Instagram discourse during UNFCCC COP26 largely served to disseminate environmental justice, rights-based climate narratives, and to amplify celebrity-driven environmentalism.

At the same time, information-based, collaborative, and discourse network approaches may struggle to detect covert or opaque processes within environmental politics—particularly those underpinning anti-environmentalism. Lucas (2022) illustrates this through a mixed-methods, critical political economy analysis that maps employment affiliations of former Australian politicians and staffers to fossil-fuel corporations—echoing interlocking-directorate research (Sapinski & Carroll, 2018)—and shows how fossil-fuel interests captured the Australian government. Such work underscores the need for innovative, methodologically flexible approaches to uncover the relational foundations of both structural and instrumental power in environmental networks.

5. Future Research Agenda

Throughout this piece, we have sought to foreground relationality in political process as central to understanding multi-level, multi-actor socio-ecological politics. A relational-process approach to environmental politics offers crucial insights into who collaborates, contests, and holds power; how practices and discourses co-constitute environmental ideologies while generating and reinforcing self-organizing heuristics; where conflict, latency, negotiation, and cooperation emerge; and what mechanisms sustain—or potentially transform—the political processes that govern our shared environmental futures.

We argue that connecting networks as pipes and networks as prisms offers valuable analytical leverage in environmental politics. Integrating structural-institutional and discourse identity-forming network processes can illuminate the co-evolution of structure and agency (Leifeld, 2020) in society-environment relations. For instance, comparing or combining discourse-based approaches (Hajer, 1993; Leifeld, 2016) with coordination or belief-based coalition research (Bulkeley, 2000; Kammerer & Ingold, 2025; Ocelík, 2022) may reveal previously overlooked nuances in environmental decision-making.

Important domains, however, remain underexamined. The politics of environmental policy integration (Lafferty & Hovden, 2003) and multi-level environmental governance (Wälti, 2010) warrant further attention within political network research (Cerqueti et al., 2025). While network dynamics are often subsystem-specific (Laumann & Knoke, 1987), environmental objectives must be mainstreamed into sectoral policies, incorporating sector-specific goals (e.g., transport, energy, and land use) and environmental policy objectives. This entails examining integrated or overlapping subdomains such as the climate-nuclear energy

nexus (Schneider, 2025). Likewise, political network analysis has yet to address complex cross-sectoral domains such as the water-energy-food nexus (Shi et al., 2022).

Addressing cumulative, systemic, and “glocal” environmental problems—such as biodiversity loss and deforestation—requires a multi-level governance approach that links international cooperation with local knowledge and action. Integrating the network pipes-and-prisms perspectives can help explain persistent coordination challenges, framing disconnects, and power asymmetries across governance levels. Such asymmetries are particularly acute in the Global South, with local actors often overlooked by higher-level institutions (Bravo-Laguna, 2023; Di Gregorio et al., 2019) and where research is often shaped by West-centric discourses and Global North funding priorities. This calls for incorporating underrepresented perspectives in adaptive governance research (Cleaver & Whaley, 2018), including attention to cross-scale feedback loops, decision-making under uncertainty, and non-linear dynamics (Brown & Westaway, 2011; Bulkeley, 2005; Dewulf & Biesbroek, 2018).

Methodological advances in network research—such as multi-level (Lazega & Wang, 2023), multi-modal (Knocke et al., 2021), and multilayered network models (Battiston et al., 2018; Locatelli et al., 2020)—provide powerful tools to unpack the complexity of environmental networks across entities, subdomains, scales, and relations. Relational Event and Relational Hyperevent Models (Lerner & Lomi, 2020, 2022) can further enable tracing temporal and relational interdependencies in multi-actor event participation, revealing co-participation dynamics in environmental movements and crisis responses (Fernández G. et al., 2025). Additionally, empirical case studies on socio-ecological systems remain essential for testing how network configurations shape adaptive capacity and multi-actor governance outcomes (Barnes et al., 2017). Finally, future work must grapple with the growing complexity and data demands for studying environmental political networks, where modelling advances coupled with discourse and secondary data analysis can mitigate limitations in such a data-intensive domain.

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References

- Abbott, A. (2007). Mechanisms and relations. *Sociologica*, 2, 1–22.
- Alexander, J. (2014). Notes towards a definition of politics. *Philosophy*, 89(2), 273–300.
- Barnes, M. L., Bodin, Ö., Guerrero, A. M., McAllister, R. R. J., Alexander, S. M., & Robins, G. (2017). The social

- structural foundations of adaptation and transformation in social-ecological systems. *Ecology and Society*, 22(4), Article 16.
- Barnes, M. L., Wang, P., Cinner, J. E., Graham, N. A. J., Guerrero, A. M., Jasny, L., Lau, J., Sutcliffe, S. R., & Zamborain-Mason, J. (2020). Social determinants of adaptive and transformative responses to climate change. *Nature Climate Change*, 10, 823–828.
- Battiston, S., Caldarelli, G., & Garas, A. (2018). *Multiplex and multilevel networks*. Oxford University Press.
- Bodin, Ö., Barnes, M. L., McAllister, R. R. J., Rocha, J. C., & Guerrero, A. M. (2017). Social-ecological network approaches in interdisciplinary research: A response to Bohan et al. and Dee et al. *Trends in Ecology & Evolution*, 32(8), 547–549.
- Boin, A., Ekengren, M., & Rhinard, M. (2021). *Understanding the creeping crisis*. Palgrave Macmillan.
- Bravo-Laguna, C. (2023). Examining the EU reaction to a humanitarian emergency from a network perspective: The response to cyclones Idai and Kenneth. *Journal of Common Market Studies*, 61(3), 673–691.
- Broadbent, J. (2024). Power and theory: Toward a multidimensional explanation of the dynamic political field. *Journal of Political Power*, 17(3), 223–252.
- Brown, K., & Westaway, E. (2011). Agency, capacity, and resilience to environmental change: Lessons from human development, well-being, and disasters. *Annual Review of Environment and Resources*, 36(1), 321–342.
- Brulle, R. J., Roberts, J. T., & Spencer, M. C. (2024). *Climate obstruction across Europe*. Oxford University Press.
- Bulkeley, H. (2000). Discourse coalitions and the Australian climate change policy network. *Environment and Planning C: Government and Policy*, 18(6), 727–748.
- Bulkeley, H. (2005). Reconfiguring environmental governance: Towards a politics of scales and networks. *Political Geography*, 24(8), 875–902.
- Byrne, D., & Callaghan, G. (2014). *Complexity theory and the social sciences: The state of the art*. Routledge.
- Cerqueti, R., Ferraro, G., Mattera, R., & Storani, S. (2025). Mapping socio-environmental policy integration in the European Union: A multilayer network approach. *Journal of Cleaner Production*, 491, Article 144792.
- Ciordia, A., Schiavo, L., & Dlani, M. (2025). Shifting grounds of collaboration in changing contexts: Evolving environmental networks in the Basque Country. *Politics and Governance*, 13, Article 9932. <https://doi.org/10.17645/pag.9932>
- Cleaver, F., & Whaley, L. (2018). Understanding process, power, and meaning in adaptive governance: A critical institutional reading. *Ecology and Society*, 23(2), Article 49.
- Coleman, J. S. (1986). Social theory, social research, and a theory of action. *The American Journal of Sociology*, 91(6), 1309–1335.
- Crossley, N., & Diani, M. (2018). Networks and fields. In D. A. Snow, S.A. Soule, H. Kriesi & H. J. McCammon (Eds.), *The Wiley Blackwell companion to social movements* (pp. 149–166). Wiley Blackwell.
- Dépelteau, F. (2018). From the concept of “trans-action” to a process-relational sociology. In F. Dépelteau (Ed.), *The Palgrave handbook of relational sociology* (pp. 499–519). Palgrave Macmillan.
- Dewulf, A., & Biesbroek, R. (2018). Nine lives of uncertainty in decision-making: Strategies for dealing with uncertainty in environmental governance. *Policy and Society*, 37(4), 441–458.
- Di Gregorio, M. (2012). Networking in environmental movement organisation coalitions: Interest, values or discourse? *Environmental Politics*, 21(1), 1–25.
- Di Gregorio, M., Fattorelli, L., Paavola, J., Nurrochmat, D. R., May, P. H., Brockhaus, M., Sari, A. M., & Kusumadewi, S. D. (2019). Multi-level governance and power in climate change policy networks. *Global Environmental Change*, 54, 64–77.
- Di Gregorio, M., Nurrochmat, D. R., Paavola, J., Sari, I. M., Fattorelli, L., Pramova, E., Locatelli, B., Brockhaus, M.,

- & Kusumadewi, S. D. (2017). Climate policy integration in the land use sector: Mitigation, adaptation and sustainable development linkages. *Environmental Science & Policy*, 67, 35–43.
- Diani, M. (2015). *The cement of civil society: Studying networks in localities*. Cambridge University Press.
- Diani, M. (2022). Relational approaches to the study of political participation. In M. Giugni & M. Grasso (Eds.), *The Oxford handbook of political participation* (pp. 183–198). Oxford University Press.
- Diani, M., & McAdam, D. (2003). *Social movements and networks: Relational approaches to collective action*. Oxford University Press.
- Diani, M., & Pilati, K. (2011). Interests, identities, and relations: Drawing boundaries in civic organizational fields. *Mobilization: An International Quarterly*, 16(3), 265–282.
- Emirbayer, M. (1997). Relational manifesto. *American Journal of Sociology*, 103(2), 281–317.
- Feindt, P. H., Schwindenhammer, S., & Tosun, J. (2021). Politicization, depoliticization and policy change: A comparative theoretical perspective on agri-food policy. *Journal of Comparative Policy Analysis: Research and Practice*, 23(5/6), 509–525.
- Fernández G., E., Bravo-Laguna, C., & Ciordia, A. (2025). *Inertia and change: Resilience in Basque environmental collective action networks*. Manuscript submitted for publication.
- Ferro, A. (2025). Network alliances among Fridays for Future local groups in Italy: A relational mechanisms investigation. *Politics and Governance*, 13, Article 10026. <https://doi.org/10.17645/pag.10026>
- Fischer, M., & Sciarini, P. (2016). Drivers of collaboration in political decision making: A cross-sector perspective. *The Journal of Politics*, 78(1), 63–74.
- Fisher, D. R., & Leifeld, P. (2019). The polycentricity of climate policy blockage. *Climatic Change*, 155(4), 469–487.
- Giugni, M., & Grasso, M. (2022). *The Routledge handbook of environmental movements*. Taylor & Francis.
- Gupta, J., van der Leeuw, K., & de Moel, H. (2007). Climate change: A ‘glocal’ problem requiring ‘glocal’ action. *Environmental Sciences*, 4(3), 139–148.
- Hajer, M. A. (1993). Discourse coalitions and the institutionalization of practice: The case of acid rain in Britain. In F. Fisher & J. Forrester (Eds.), *The argumentative turn in policy analysis and planning* (pp. 43–76). Duke University Press.
- Heaney, M. T., & McClurg, S. D. (2009). Social networks and American politics: Introduction to the special issue. *American Politics Research*, 37(5), 727–741.
- Howe, A. C., Tindall, D. B., & Stoddart, M. C. J. (2021). Drivers of tie formation in the Canadian climate change policy network: Belief homophily and social structural processes. *Social Networks*, 75, 107–117.
- Hutter, S., & Kriesi, H. (2019). *European party politics in times of crisis*. Cambridge University Press.
- Ingold, K., & Fischer, M. (2014). Drivers of collaboration to mitigate climate change: An illustration of Swiss climate policy over 15 years. *Global Environmental Change*, 24(1), 88–98.
- Ingold, K., Fischer, M., Freiburghaus, R., Nohrstedt, D., & Vatter, A. (2025). How patterns of democracy impact policy processes: When Lijphart and Sabatier meet. *European Policy Analysis*, 11, 254–270.
- IPCC. (2019). Summary for policymakers. In *Climate change and land: An IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* (pp. 1–36). Cambridge University Press. <https://doi.org/10.1017/9781009157988.001>
- Jacobs, A. M., & Weaver, R. K. (2014). When policies undo themselves: Self-undermining feedback as a source of policy change. *Governance*, 28(4), 441–457.
- Jasny, L., & Fisher, D. R. (2019). Echo chambers in climate science. *Environmental Research Communications*, 1(10), Article 101003.

- Judge, M., Kashima, Y., Steg, L., & Dietz, T. (2023). Environmental decision-making in times of polarization. *Annual Review of Environment and Resources*, 48, 477–503.
- Kammerer, M., & Ingold, K. (2025). The hierarchy of beliefs and coordination: A “chicken and egg” problem. *Politics and Governance*, 13, Article 10369. <https://doi.org/10.17645/pag.10369>
- Kenney-Lazar, M., Johnson, A., Sultana, F., Himley, M., Bebbington, A. J., Havice, E., Rice, J., & Osborne, T. (2023). Relational environmental governance: A critical framework for praxis with the material world. *Journal of Political Ecology*, 30(1), 677–698.
- Knoke, D., Diani, M., Hollway, J., & Christopoulos, D. (2021). *Multimodal political networks*. Cambridge University Press.
- Lafferty, W., & Hovden, E. (2003). Environmental policy integration: Towards an analytical framework. *Environmental Politics*, 12(3), 1–22.
- Laumann, E. O., & Knoke, D. (1987). *The organizational state: Social choice in national policy domains*. University of Wisconsin Press.
- Lazega, E., & Wang, P. (2023). Multilevel network analysis. In J. McLevey, J. Scott & P. Carrington (Eds.), *The Sage handbook of social network analysis* (pp. 455–473). Sage.
- Leftwich, A. (2004). *What is politics? The activity and its study*. Polity.
- Leifeld, P. (2016). Discourse network analysis: Policy debates as dynamic networks. In J. N. Victor, M. N. Lubell & A. H. Montgomery (Eds.), *The Oxford handbook of political networks* (pp. 301–332). Oxford University Press.
- Leifeld, P. (2020). Policy debates and discourse network analysis: A research agenda. *Politics and Governance*, 8(2), 180–183.
- Leifeld, P., & Fisher, D. (2025). Up and down with...polarisation? Intrinsic and instrumental polarisation dynamics in US climate policy debates. *Politics and Governance*, 13, Article 9933. <https://doi.org/10.17645/pag.9933>
- Lerner, J., & Lomi, A. (2020). Reliability of relational event model estimates under sampling: How to fit a relational event model to 360 million dyadic events. *Network Science*, 8(1), 97–135.
- Lerner, J., & Lomi, A. (2022). A dynamic model for the mutual constitution of individuals and events. *Journal of Complex Networks*, 10(2), Article cnac004.
- Locatelli, B., Pramova, E., Di Gregorio, M., Brockhaus, M., Chávez, D. A., Tubbeh, R., Sotés, J., & Perla, J. (2020). Climate change policy networks: Connecting adaptation and mitigation in multiplex networks in Peru. *Climate Policy*, 20(3), 354–372.
- Lorenzini, J. (2022). Political consumerism and food activism. In M. Grasso & M. Giugni (Eds.), *The Routledge handbook of environmental movements* (pp. 215–228). Routledge.
- Lucas, A. (2022). Fossil networks and dirty power: The politics of decarbonisation in Australia. In D. Tindall, M. C. J. Stoddart & R. E. Dunlap (Eds.), *Handbook of anti-environmentalism* (pp. 192–215). Edward Elgar Publishing.
- Lusher, D., Koskinen, J., & Robins, G. (2013). *Exponential random graph models for social networks: Theory, methods, and applications*. Cambridge University Press.
- Martin, J. L. (2009). *Social structures*. Princeton University Press.
- McAdam, D., & Tarrow, S. (2018). The political context of social movements. In D. A. Snow, S. A. Soule, H. Kriesi & H. J. McCammon (Eds.), *The Wiley Blackwell companion to social movements* (pp. 17–42). Wiley Blackwell.
- McAdam, D., Tarrow, S., & Tilly, C. (2001). *Dynamics of contention*. Cambridge University Press.
- McCarthy, N., Lipper, L., Mann, W., Branca, G., & Capaldo, J. (2013). Evaluating synergies and trade-offs among food security, development, and climate change. In E. Wollenberg, A. Nihart, M. Tapio-Baström & M. Grieg-Gran (Eds.), *Climate change mitigation and agriculture* (pp. 39–49). Routledge.

- McFarland, A. S. (2004). *Neopluralism: The evolution of political process theory (studies in government and public policy)*. University Press of Kansas.
- Nagel, M., Gall, A., & Tosun, J. (2025). The “hottest ever January” in Germany: Farmers’ protests and discourse on agriculture and food production. *Politics and Governance*, 13, Article 9830. <https://doi.org/10.17645/politics.9830>
- Newig, J., Challies, E., & Jager, N. W. (2019). Democratic innovation and environmental governance. In S. Elstub & O. Escobar (Eds.), *Handbook of democratic innovation and governance* (pp. 324–338). Edward Elgar Publishing.
- Ocelík, P. (2022). Climate change scepticism in front-page Czech newspaper coverage: A one man show. In D. Tindall, M. C. J. Stoddart & R. E. Dunlap (Eds.), *Handbook of anti-environmentalism* (pp. 84–106). Edward Elgar Publishing.
- Podolny, J. M. (2001). Networks as the pipes and prisms of the market. *American Journal of Sociology*, 107(1), 33–60.
- Preiser, R., Biggs, R., De Vos, A., & Folke, C. (2018). Social-ecological systems as complex adaptive systems: organizing principles for advancing research methods and approaches. *Ecology and Society*, 23(4), Article 46.
- Prota, L. (2022). Food systems between resilience and change: A social network analysis perspective. In E. Lazega, T. A. B. Snijders & R. P. M. Wittek (Eds.), *A research agenda for social networks and social resilience* (pp. 165–181). Edward Elgar Publishing.
- Rootes, C. (1999). Political opportunity structures: Promise, problems and prospects. *La Lettre de la Maison Française d’Oxford*, 10, 71–93.
- Sabatier, P. (2007). *Theories of the policy process*. Westview Press.
- Sapinski, J. P., & Carroll, W. K. (2018). Interlocking directorates and corporate networks. In A. Nölke & C. May (Eds.), *Handbook of the international political economy of the corporation* (pp. 45–60). Edward Elgar Publishing.
- Satoh, K., Gronow, A., Ylä-Anttila, T., Delicado, A., Schmidt, A., Swarnakar, P., Wagner, P. M., & Yun, S. (2025). Coalition opportunity structures and advocacy coordination in consensus and majoritarian democracies. *Policy Studies Journal*. Advance online publication. <https://doi.org/10.1111/psj.70067>
- Saunders, C. (2009). It’s not just structural: Social movements are not homogenous responses to structural features, but networks shaped by organisational strategies and status. *Sociological Research Online*, 14(1), 26–41.
- Saunders, C. (2013). *Environmental networks and social movement theory*. Bloomsbury Academic.
- Saunders, C., Nadel, S., & Walley, B. (2025). It’s not just structural: political context and London’s environmental networks twenty-one years later. *Politics and Governance*, 13, Article 10137. <https://doi.org/10.17645/politics.10137>
- Schneider, K. R., Remans, R., Bekele, T. H., Aytekin, D., Conforti, P., Dasgupta, S., DeClerck, F., Dewi, D., Fabi, C., Gephart, J.A., Masuda, Y.J., McLaren, R., Saisana, M., Aburto, N., Ambikapathi, R., Arellano Rodriguez, M., Barquera, S., Battersby, J., . . . Fanzo, J. (2025). Governance and resilience as entry points for transforming food systems in the countdown to 2030. *Nature Food*, 6, 105–116.
- Schneider, V. (2025). Germany’s energy and climate policy as an ecology of games. *Politics and Governance*, 13, Article 10023. <https://doi.org/10.17645/politics.10023>
- Scott, T. A., Lubell, M., & Arnold, G. (2023). The evolution of environmental policy network analysis. In J. McLevey, J. Scott & P. Carrington (Eds.), *The Sage handbook of social network analysis* (pp. 92–115). Sage.
- Shi, Y., Liu, S., & Shi, H. (2022). Analysis of the water-food-energy nexus and water competition based on a Bayesian network. *Water Resource Management*, 36, 3349–3366.

- Snijders, T. A. B., van de Bunt, G., & Steglich, C. E. G. (2010). Introduction to stochastic actor-based models for network dynamics. *Social Networks*, 32(1), 44–60.
- Stoddart, M. C. J., Koop-Monteiro, Y., & Tindall, D. B. (2024). Instagram as an arena of climate change communication and mobilization: A discourse network analysis of COP26. *Environmental Communication*, 19(2), 218–237.
- Tarrow, S. G. (2011). *Power in movement: Social movements and contentious politics*. Cambridge University Press.
- Thalheimer, L., Cottier, F., Kruczkiewicz, A., Hultquist, C., Tuholske, C., Benveniste, H., Freihardt, J., Hemmati, M., Kam, P. M., Pricope, N. G., van den Hoek, J., Zimmer, A., de Sherbinin, A., & Horton, R. M. (2025). Prioritizing involuntary immobility in climate policy and disaster planning. *Nature Communications*, 16, Article 2581.
- Thiel, A., Blomquist, W. A., & Garrick, D. E. (2019). *Governing complexity: Analyzing and applying polycentricity*. Cambridge University Press.
- Tindall, D. B., Howe, A. C., & Mauboulès, C. (2020). Tangled roots: Personal networks and the participation of individuals in an anti-environmentalism countermovement. *Sociological Perspectives*, 64(1), 5–36.
- Tindall, D. B., Stoddart, M. C., & Dunlap, R. E. (2022). *Handbook of anti-environmentalism*. Edward Elgar Publishing.
- Turner, J., & Bailey, D. (2021). ‘Ecobordering’: Casting immigration control as environmental protection. *Environmental Politics*, 31(1), 110–131.
- Wälti, S. (2010). Multi-level environmental governance. In H. Enderlein, S. Wälti & M. Zürn (Eds.), *Handbook on multi-level governance* (pp. 411–422). Edward Elgar Publishing.
- Yates, J., Deeney, M., Muncke, J., Carney Almroth, B., Dignac, M. F., Castillo, A. C., Courtene-Jones, W., Kadiyala, S., Kumar, E., Stoett, P., Wang, M., & Farrelly, T. (2025). Plastics matter in the food system. *Communications Earth & Environment*, 6(1), Article 176.
- Ylä-Anttila, T., Gronow, A., Stoddart, M. C. J., Broadbent, J., Schneider, V., & Tindall, D. B. (2018). Climate change policy networks: Why and how to compare them across countries. *Energy Research & Social Science*, 45, 258–265.

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