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Article

Enhancing the Modal Split in Paramaribo Through Design-Driven Participatory Action Research Fuelled by Urban Tactics

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Abstract
There appears to be no "one-size-fits-all" strategy for evolving from a car-dependent urban environment towards a well-balanced modal split. The search for a suitable mobility strategy for a particular setting can be framed as seeking a suitable governance strategy. This article explores the opportunities of design-driven participatory action research (DD-PAR) as a governance strategy for improving mobility within a context of weak governance by investigating a single case study conducted in Paramaribo North, Suriname. Despite available plans, designs, and policy proposals, Surinamese public authorities are struggling to improve mobility. Notwithstanding many efforts, clientelism and patronage are weakening the power of the government, resulting in unimplemented public initiatives. Moreover, there are few civil society organisations to advocate for this weak public power. This creates a context in which neither the government nor civil society is sufficiently equipped to realise the modal shift in Paramaribo. Governance strategies depending on strong government or proactive civil society (e.g., actor-based strategies) are thus not suitable. In contrast, DD-PAR appears to have potential as a governance strategy, as it uses research and academics as forces to create societal enthusiasm, establish actor networks, and generate action. The current case study identifies key actors and preconditions for building a network of actors. It also provides tentative insights into urban tactics for increasing pressure on the government to provide adequate infrastructure and policy to accommodate newly developed action that supports a more diverse modal split.

Keywords
car dependency; civic engagement; design driven; participatory action research; urban tactics; weak governance

Issue
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1. Introduction

Achieving a more sustainable urban future with lower carbon emissions will require a well-balanced modal split. International organisations (e.g., the UN) promote sustainable urban policy carried out by a strong public sector, combined with civic participation and even co-creation (United Nations, 2016). Unfortunately, several urban environments that currently suffer from car dependency are unable to count on public support to improve their modal split, for a variety of reasons. This is problematic, as popular initiatives, policy strategies, and actions aimed at decreasing car dependency (e.g., increasing public transportation, providing sufficient and safe sidewalks and bicycle lanes, increasing parking rates, developing parks and rides on the fringes of cities, promoting the use of bicycles for functional transportation) often rely on networks that include a capable public sector or a strong civil society. In addition, it is difficult to autonomously create an actor-network to function within a context of weak governance without strong policymakers, a skilled professional public sector, or an existing actor-network, and one that is affected by adverse governance mechanisms. Such contexts call for alternative governance strategies, such as those using external professionals to locate key actors

in order to establish an actor-network and identify feasible actions.

This article explores the opportunities offered by design-driven participatory action research (DD-PAR) as an alternative governance approach aimed at improving mobility within an urban environment that is affected by obstructive public actors and a weak civil society. More specifically, this article assumes that urban tactics (as a part of DD-PAR) can stimulate civic organisation and civic actions to improve mobility in specific cases (Lydon et al., 2015). Previous applications of DD-PAR have included an initiative in Milan to advocate for an improved modal split by organising a Massa Marmocchi (Massa Marmocchi Milano, 2023). Another example involved a self-governance approach that resulted in the redesign of several blocks in the Cerda grid in Barcelona to realise pedestrian-friendly and bike-friendly "super blocks" (Rueda, 2019).

To test this assumption, this article elaborates on how an environment of weak governance can benefit from urban tactics and DD-PAR. The following sections provide a description and analysis of the experiences and preliminary results of a two-month DD-PAR field project focusing on mobility in Paramaribo. In this project, researchers built on the hopeful practices and field experiences of the research unit known as the Interdisciplinary Studio for Territories in Transition (ISTT) of the University of Antwerp (UA) and the Anton de Kom University of Suriname (AdeKUS). These experiences are used to set the stage for developing an actor-network to engage in a DD-PAR process involving urban tactics. Finally, some preliminary conclusions are formulated with regard to the potential of and preconditions for urban tactics to enhance civic organisation, including how these tactics relate to public policy and private initiatives, as well as how they contribute to improving the modal split in Paramaribo North.

2. Urban Tactics as Part of Design-Driven Participatory Action Research

2.1. Design-Driven Participatory Action Research

DD-PAR is a specific form of PAR, a methodology that aims to identify capable actors, bring them together within a network, and finally, assess the potential of self-organisation in the attempt to set up actions within a specific context. The research method has been applied in a broad variety of disciplines. As defined by Kindon et al. (2007, p.1), PAR is "an umbrella term covering a variety of participatory approaches to action-oriented research. Defined most simply, PAR involves researchers and participants working together to examine a problematic situation or action to change it for the better." Each of the many variants of PAR differs in the manner and extent of involvement on the part of the practitioner or community, as well as in the expected outcomes and the way in which the research is conducted (Bilandzic & Venable, 2011). Despite the wide variation in existing forms of the method, Gaventa and Cornwall (2006) identify three common principles common to any PAR project: (a) it should develop an alternative form of knowledge that contributes to empowerment and social change; (b) it should encourage mobilisation and action; and (c) it should encourage reflection, learning, and individual critical consciousness. As aptly stipulated by Nakamura (2015), PAR should also be related to urban and community issues, in addition to providing a methodology for carrying out research with communities and aiming to achieve participation, empowerment, change, and power transfer. Close community involvement in PAR results in capacity-building and helps to empower communities to continue engaging in decision-making processes over the long term. In DD-PAR, research by design and design are used to assess specific situations, as well as to encourage or prepare specific civic action. The addition of a DD dimension to the characteristics of PAR thus often ensures that the outcomes are more tangible (Goethals et al., 2022).

2.2. Urban Tactics

Lydon et al. (2015, p.7) define tactical urban planning (or emerging urbanism) as "[a] strategy of action-based research focused on short-term intervention, through creative and low-cost ideas, at a local, punctual and controlled level. Its goal is to condition public space for those who live in it: citizens."

Tactical urbanism is a form of planning that is complementary to the formal urban-planning process. It offers a solution to the slow, cumbersome nature that characterises urban planning. However innovative and promising they may be, large-scale urban projects take a long time, cost a lot of money, and are often delayed. Tactical urbanism can allow action to emerge in a very short term. As noted by Lydon et al. (2015, p.2), Merriam-Webster defines "tactics" as small-scale actions that serve a larger purpose. They further elaborate this definition to describe urban tactics as small-scale, temporary interventions in space for the mental and physical transition by and for local people. Urban tactics are thus characterised by four properties: (a) small-scale interventions on specific and most crucial locations in the city where something can or should change spatially; (b) temporary actions that are not major infrastructural, physically invasive works and that often involve working with loose, mobile components to test out situations; (c) actions that support a mental transition; and (d) actions that have a very strong social component through an open, participatory, and iterative design process (Lydon et al., 2015). They thus provide a quick, accessible manner of initiating positive change. These characteristics sustain the interest of civil society and state actors. Citizen participation in urban tactics creates a sense of ownership and investment, and the creativity and innovation of such tactics can capture the imagination of the public, thereby

generating excitement and interest in the longer term. Several case studies and toolkits relating to urban tactics are available on the internet, thus allowing the tactical-urbanism movement to spread around the world.

The relationship between DD-PAR and tactical urbanism is based on the fact that they both prioritise collaboration with and engagement of community members in the design and implementation of urban interventions. While DD-PAR emphasises more general co-creation and co-design, tactical urbanism focuses on executable citizen-led initiatives and on-the-spot experimentation.

3. Case Study: Design-Driven Participatory Action Research and Urban Tactics in Paramaribo North

Paramaribo, the capital of Suriname, is a sprawling Caribbean city that suffers from traffic congestion, poor public transportation, and an unattractive public domain for pedestrians and cyclists (Claes & Debaene, 2009; Heirman, 2019; Heirman et al., 2007). This adverse mobility situation has emerged in the last four decades. Paramaribo was originally a planned tropical city with a well-balanced modal split (see Figure 1). Since the 1980s, however, cars have been displacing bicycles, and pedestrian zones have become unattractive due to parked cars and the absence of shade, owing to the disappearance of trees (Dikland, 2004; PHI for Inter-American Development Bank, 2005; Verrest, 2010). Public transportation has currently been reduced to a network of minibuses that no longer covers the entire area, combined with small private jetties to cross the river. Public jetties and light rail services are no longer available. As a result, private cars have become the dominant mode of transportation, thereby leading to a steep increase in private car ownership. As of 2019, car use had more than doubled relative to 2005 (Inter-American Development Bank, 2019).

As demonstrated by several policy plans and academic studies, it is theoretically possible to improve the modal split in and around Paramaribo. These plans and studies have produced ideas for reinstating the public jetties and light rail services, as well as for creating a new public transportation infrastructure and redesigning streets to make them more amenable to pedestrians and cyclists. Some of these ideas have been elaborated into detailed construction plans or operational policies. Unfortunately, however, these mobility plans and projects have been discontinued, and the government has changed very little concerning mobility. Although some of the public domain has been reconstructed, this has been done with little regard to the needs of pedestrians and cyclists (Inter-American Development Bank, 2019; Jankipersadsingh et al., 1993; Ministry of Public Works, 2010; Ministry of Public Works et al., 1992; NEA Transport Research et al., 2011; Neyt et al., 2020; Rymenants & Struyf, 2022).

Figure 1. Gravestraat, Paramaribo in 1949 (photo by De Spaarnestad).

Problems of obstructive policy implementation and unrealised projects are not limited to the domains of mobility and urban planning. Several scholars have identified similar situations in a variety of policy domains and have linked these issues to weak governance in Suriname. Although it is a middle-income country, Suriname is characterised by a high level of inequality, and it is suffering from a financial crisis. The country's per-capita GDP in US dollars has decreased by half, from 9,199.2 in 2014 to 4,869.1 in 2021 (World Bank, 2023). Moreover, the inflation rate surged to 70% in 2021 (IMF, 2021). As a result, more than half of all inhabitants in the interior of Suriname are living in poverty. Since gaining its independence in 1975, the Surinamese government has struggled to provide adequate public services and develop policies to create living conditions of acceptable quality. Its post-colonial governance has been characterised by deeply rooted mechanisms of patronage and clientelism. Hout (2007) describes Suriname as a prime example of a rentier state. The public institutions involved in the administration of land allocation, public works, spatial planning, regional development, and mobility are highly politicized. Adverse path-dependent institutional arrangements have created a situation in which few planning initiatives are developed and even fewer are successfully implemented (Heirman, 2019).

3.1. Action Research and Urban Tactics by Interdisciplinary Studio for Territories in Transition

Since 2005, the UA and the AdeKUS have collaborated in research, educational strengthening, and civil service projects (Adams & Heirman, 2012). The first years of the collaboration focused on large-scale urban renewal plans and policy improvement, with the close involvement of public institutions. Despite considerable enthusiasm and lively discussions on sustainable urban development in Suriname, none of the policy recommendations or projects was implemented. To embody a new collaborative approach with a greater focus on civic engagement, the two academic institutes joined forces in a research unit: the ISTT. Since 2016, the ISTT has focused on DD-PAR at several research sites in Suriname (ISTT, 2022). In these projects, UA staff and master students of architecture, urbanism-spatial planning, and heritage studies have worked with the staff of the AdeKUS to perform DD-PAR research with bachelor students of infrastructure and civil engineering. Whenever possible, they try to engage citizens, civil society organisations, and/or representatives of local public offices. Students and local supervisors carry out the research, with the UA supervisors guiding the students together with the local supervisors during online meetings. In most cases, the UA supervisors join the teams for several days during the two-month fieldwork period, in addition to participating in the overarching, multilateral actor workshops. The focus of the research ranges from integrated planning processes on specific neighbourhoods to more thematic research focusing on such topics as housing, heritage, or mobility. This article focuses only on the DD-PAR action regarding mobility in Paramaribo North.

3.2. Momentum for Urban Tactics Regarding Bicycle Mobility in Paramaribo North

The financial crisis and global rise in fuel prices have made the use of private cars less affordable for the citizens of Paramaribo. The reliability of public transportation decreased during the Covid-19 crisis when many private bus drivers stopped driving. In response, more citizens resumed walking and cycling, thus creating opportunities for increased attention to pedestrian and bicycle mobility. Alongside the effects of these crises, several fragile, yet hopeful practices have emerged in Paramaribo North with regard to a more diverse modal split. In Paramaribo North, many facilities (e.g., markets, supermarkets, and schools) are located within walking or cycling distance (Peleman, 2020). Furthermore, this part of the city has relatively more economically strong residents. This provides greater capacity for mobilising resources to support a mobility transformation. In addition, this group of citizens has more time for recreation, as they are not merely struggling to survive. As indicated by Strava data, observations and testimonials, recreational exercise (e.g., jogging and cycling) is relatively more prominent in Paramaribo North than it is in the rest of Paramaribo (Inter-American Development Bank, 2019; Peleman, 2020; Rymenants & Struyf, 2022). The increasing number of bicycles on the streets has lowered barriers for other citizens, as it has helped to break down the general stigma perceived by many Surinamese that cycling is a mode of transportation for the urban poor. This development could provide a stepping stone to cycling for functional purposes. In addition to local and spontaneous individual exercise, three organisations have established biking tours that regularly pass through this area. Finally, Paramaribo North is situated between the historic centre of Paramaribo and the plantation heritage area in North Commewijne, which is accessible by the private jetties at Leonsberg. Tourists often pass through Paramaribo North on their way to the jetties. The area thus has the potential to serve as a link between the two hotspots, thereby accommodating a good connection. In this way, a positive environment, strong individual actors, and several hopeful practices are creating positive preconditions for identifying key actors, bringing them together within an emerging network and establishing joint actions at the neighbourhood scale or as a part of temporary improvements in the modal split in the neighbourhood. Based on these aspects, Paramaribo North was selected for a DD-PAR project fuelled by urban tactics.

3.3. Shaping an Actor Network in Paramaribo North

Very little public investment for cycling infrastructure exists in Paramaribo. In 2017 and 2019, no public funding

was allocated to this end, and investments in 2018, 2020, and 2021 amounted to only 750,000 USD. These figures suggest that a diverse modal split is low on the policy agenda. Pedestrian and bicycle mobility is perceived as dangerous due to the lack of infrastructure, in addition to image problems relating to their perception as mobility options for the urban poor. An actor-network is therefore needed to create a critical consciousness regarding the need for more pedestrian and bicycle mobility, while also demanding public investment in proper infrastructure. After a positive consciousness has been created, supporting actions and improved infrastructure could jointly promote a mental transition, in which more people are convinced to use their bicycles or walk. No such coherent, jointly cooperating actor network was available at the start of the DD-PAR fieldwork (Rymenants & Struyf, 2022).

The DD-PAR fieldwork in Paramaribo North aimed to bring together individual actors and to start building an actor-network that would encourage mobilisation and claim ownership over jointly developed activities. The network was also expected to identify bicycle ambassadors to convince other citizens in their areas to cycle as well. The researchers tried to encourage the development of this network by engaging as many citizens as possible. An iterative process of observations and informal and formal conversations (both individual and in groups) was conducted to explore the following question: "Which actors could we involve in establishing a network that could stimulate bicycle mobility from the bottom up?" The researchers talked to cyclists on the streets, and contacted cycling clubs, bicycle stores, rental agencies, businesses, voluntary organisations, journalists, and schools, in addition to participating in local events. During conversations and interviews with these actors, the researchers talked about past research and future goals, while listening to the stories, concerns, and suggestions of the actors regarding road safety and bicycle mobility in Suriname. As mentioned previously, safety and status are major concerns, although climatic conditions play a role as well.

To achieve a well-balanced network, the researchers tried to include public authorities by organising presentations at their offices to advocate the benefits of urban bicycle mobility to the Ministry of Public Works and police departments (see Figure 3). The goal was to act as a voice for cyclists and vulnerable road users, as well as to draw attention to its importance in terms of benefits relating to health, climate, and other aspects. In addition, the researchers tried to assess the extent to which these public actors were willing to engage in the network and to work towards the realisation of a mobility transition. At the end of the DD-PAR fieldwork in Paramaribo, the researchers organised an evening for all stakeholders to share ideas and experiences concerning cycling in Paramaribo (see Figure 2). During this evening, the capable actors came together, began to identify themselves as a network and even joined forces through an online

Figure 2. Discussion evening with involved actors in Paramaribo North. Source: Rymenants and Struyf (2022, p. 59X).

platform on which all actors could discuss bicycle mobility and promote activities. Two key actors expressed willingness to take the lead in continuing the dynamics and network that had been created during the DD-PAR fieldwork. They also expressed the ambition to establish an official bicycle council to act as an advisory organ for government agencies and to organise activities and urban tactics in the future (Rymenants & Struyf, 2022). One of the key actors collaborated with a government official and several actors in the network to submit a proposal to the Bloomberg Initiative for Cycling Infrastructure.

3.4. Urban Tactic 1: Bicycle Routes in Paramaribo North

To stimulate the identification of key actors and to support the establishment of an actor-network, the DD-PAR fieldwork also developed two urban tactics. More specifically, the researchers used small-scale, punctual actions in Paramaribo North to influence the discussion with the actors involved, as well as with citizens and organisations that had not yet been involved in the fieldwork. For the first action, the researchers focused on raising awareness concerning the problematic nature

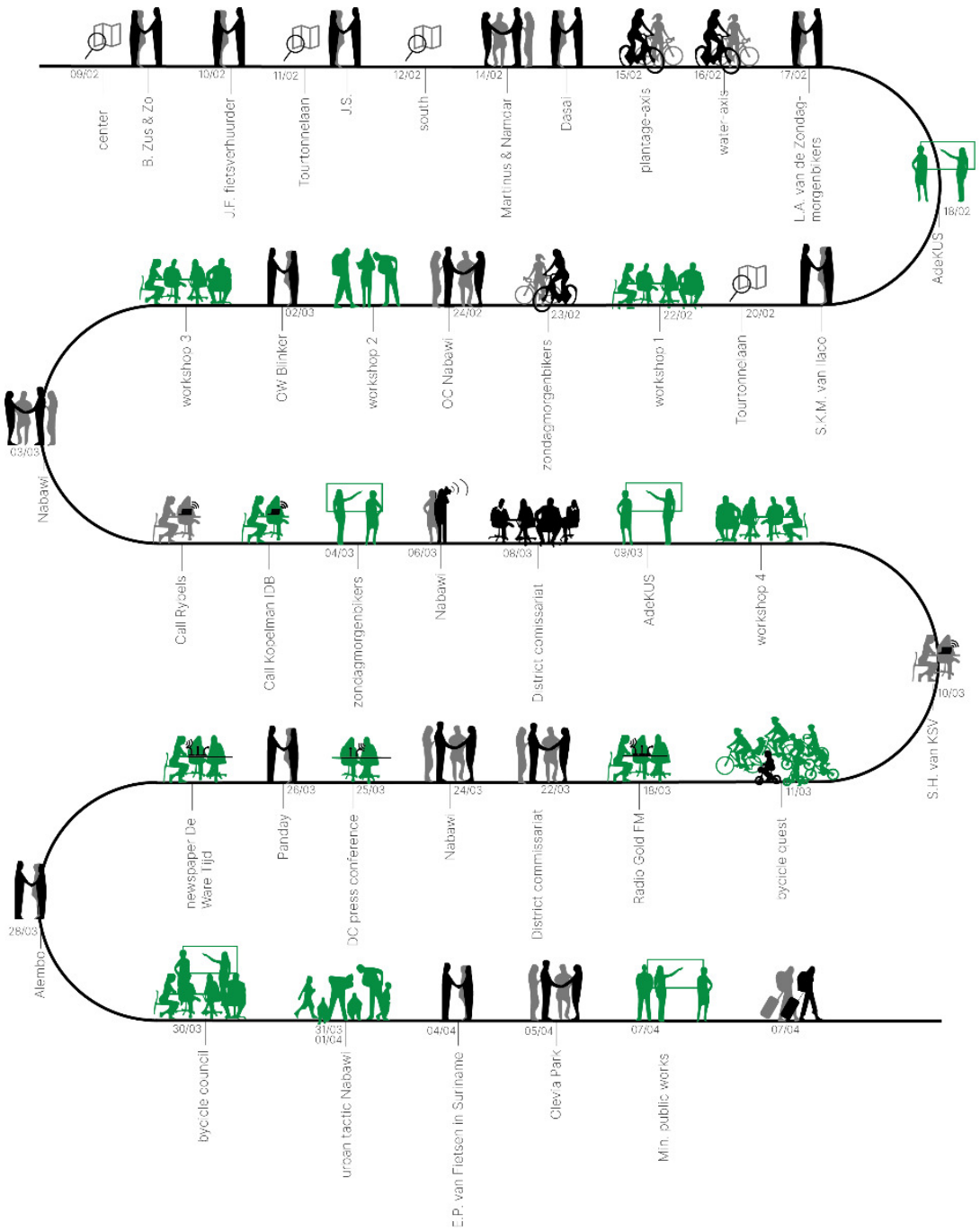

Figure 3. Conceptual timeline for establishing a local actor network for pedestrian and bicycle mobility in Paramaribo North during the DD-PAR fieldwork. Source: Rymenants and Struyf (2022, p. 42).

of the absence of bicycle infrastructure in Paramaribo North. To raise awareness and initiate modest infrastructure adaptations in favour of bicycle mobility, tentative bicycle routes were created between the historic centre of Paramaribo and Leonsberg by spray painting bicycle signs on the roads (see Figure 4). This first urban tactic was intended to convince the government to integrate the improvement of bicycle mobility into its policy priorities. Through bottom-up testing of physical intervention, the researchers tried to demonstrate the benefits of bicycle infrastructure.

The urban tactic of using spray paint and stencils to mark bicycle lanes on roads has been applied all over the world. The markings were primarily intended to exert a visual influence and make road users aware of the co-use of cyclists on the lane. It creates space for cyclists and makes car drivers aware of it. This was done in the hope that local authorities would notice them, which was often the case. The realisation of the action explicitly drew the attention of approximately 12 passers-by. Several cars stopped and asked what was going on. Most reactions to the unusual action were positive, albeit suspicious. Several cyclists also passed by, smiling and giving a thumbs-up sign. The few, but positive reactions received during the realisation suggest that the implementation of the intervention had a limited but positive influence on passers-by. Given that the researchers returned to Belgium shortly after applying the symbols to the road, however, additional follow-up research is needed in order to study the impact of the symbols in a more structural manner.

Although the initiative could be described as an initial physical improvement, it primarily served as a small-scale, low-cost action that encouraged a mental transition for passers-by, as well as for public and private actors within an emerging network. Although this act of tactical urbanism was performed solely by the researchers, with no other actors involved, it was discussed with relevant actors by showing pictures and talking about the example of tactical urbanism. The discussion also served to alert residents to the possibility of taking individual action in favour of directing greater attention towards sustainable transport modes. Although the discussions were interesting, they did not result in any local actors taking ownership of this urban tactic.

The Ministry of Public Works and the district commissariat of Paramaribo North East were enthusiastic about the research and the proposed urban tactics. The financial engagement proved difficult, however, as no budget was available for this type of project. For these officials, the most important question appeared to concern how to create a safer traffic situation through small-scale, preferably bottom-up projects. The researchers introduced them to urban tactics (e.g., focusing on bicycle routes and activities), demonstrating that they could be used to take the first steps towards a more exercise-friendly Paramaribo. Immediately after the meeting, the head of the district proposed to submit an application for a permit to spray paint bicycle symbols on the road. Once the application had been submitted, approval would be sought from the police stations and the Ministry of Public Works. Although the

Figure 4. Cycling symbols were applied with spray paint to the roads in Paramaribo North. Source: Rymenants and Struyf (2022, p. 72).

police stations granted approval shortly thereafter, the researchers did not receive any news from the ministry. Several weeks later, we received word that the application had been rejected, due to the absence of a road classification, which the ministry was then in the process of preparing. No further explanation was given.

Contrary to expectations, the procedure seemed to go smoothly at first. Unfortunately, it eventually became lost within the maze of the Surinamese bureaucracy and the associated power struggles among political figures. We can therefore conclude that, despite the interest and support demonstrated by local agencies, it is quite difficult to obtain approval for such actions, given that it is not a standard procedure. It thus requires a great deal of time to create a network that includes engaged public officials who are willing to allow or even engage in short-term, low-budget interventions to improve mobility. Given that the public officials were unwilling to cooperate in issuing a permit, they are unlikely to be willing to engage in urban tactics aimed at contributing to the mental transition towards structural changes in mobility policy and road design. Research by design is therefore needed to consider and prepare future locations for urban tactics in this regard. Because the public actors rejected the project and no other local actors were involved in the realisation of the urban tactic, there was no ownership of this action on the part of any actors in the emerging network. The events that were held in conjunction with the action nevertheless contributed to a positive discussion, thereby fuelling the emerging network.

3.5. Urban Tactic 2: Bike-Friendly School Environments in Paramaribo North

To further explore the possibility of creating a local actor-network with regard to enhancing bicycle mobility, making temporary improvements to the local situation temporary, and contributing to a mental transition towards a better modal split, the researchers collaborated with an elementary school in Paramaribo North to develop a second urban tactic. As demonstrated in the literature on action research, schools offer considerable potential to act as hubs within a network of slow-mobility options. Previous student research in Paramaribo has included educational institutions in the development of a proposed ideal bicycle route. As public facilities that must be accessible to the majority of the population (Neyt et al., 2020), schools have a major impact on society. Given their age and learning ability, students constitute a target audience with considerable potential. In addition, collaboration with a school offers several interesting advantages: the possibility of addressing a broad group of participants who are following a learning process within a fixed organisational structure, easy accessibility to the facilities and buildings of the school for the organisation of actions and urban tactics, and easy connection to the educational character of a school environment. Moreover, the target audience reached through collaboration with a school extends beyond the children to include teachers, principals, and parents. The joint creation of urban tactics with actors in the emerging network also increases the probability that the local actors involved will take ownership of the action.

As illustrated by the empty bike racks and ideas for drive-through parking lots, private cars were the dominant mobility option at the Nabawi School. The school's concern for the safety of children was evidenced by its support for the installation of speed bumps. Observation of traffic and infrastructure in the school's seemingly quiet surroundings confirmed these concerns. Everyone consulted by the researchers appeared to have the ambition to enhance traffic safety around the school and during after-school activities with children. To this end, a walk-bike quest was organised, primarily as a means of addressing the mental transition and contributing to the social component of generating support for positive change.

The walk-bike quest set a lot in motion: children discovered the joy of walking and cycling, parents came out of their comfort zone to walk and cycle, and passers-by were amazed at the large group of pedestrians and cyclists on the streets. Interestingly, the reactions of motorists toward cyclists were remarkably different from their reactions to pedestrians. Due to the institutionalisation of several "walkathons" in Paramaribo, drivers are used to slowing down for pedestrians. In contrast, cycling is still uncommon, and motorists are not accustomed to slowing down for cyclists. Some motorists even intentionally displayed inappropriate driving behaviour. The mental process of accepting pedestrians as acknowledged users of the public domain was thus further advanced than that of accepting cyclists, who continue to be marginalised and unacknowledged.

Participation in a cycling event provided the opportunity to renew acquaintances with cycling, to consider the benefits of bicycle use, and to fuel enthusiasm and demand for bicycle facilities. Several participants expressed a desire to do this more often. One student at the AdeKUS who had participated in the event as a facilitator had prepared his bicycle for the activity. Although it had been neglected for years, the bike was now back in sight and ready to use. As a result, his sister also wanted to start cycling again. The organisation of recreational events sparked a mental process, and positive change might advance functional bicycle use in the long run. Repeating such recreational events regularly and expanding them to other schools and organisations could expand the reach and likelihood of increased bicycle use.

After the walk-bike quest, enthusiasm for tactical urbanism grew, along with the hope for a safer school environment. This encouraged further mobilisation for action, and a spatial intervention in the school environment soon followed. Most of the children at the Nabawi School are transported to and from school in their parent's cars. This creates heavy congestion on the school's

street during peak school hours, and children must walk between and around the manoeuvring vehicles. The situation is dangerous, and it does not enhance the motivation to walk or cycle to school. Together with students, the researchers created a painting on the surface of the street in front of the school gate (see Figure 5). The goal was to make the drop-off/pick-up process smoother and safer while creating additional room for slow-moving traffic. The project was also intended to narrow the lane and slow down motorised traffic.

The urban tactic received positive feedback from both teachers and parents. In addition, the children immediately started using the extra space to play while waiting. The change obviously requires further explanation, however, as such urban tactics cannot work for drivers without clear communication. The intervention provided enjoyment for children and it made parents think.

Additional small-scale actions could increase the short-term impact of the urban tactic of the painting. For example, old car tires could be used to make the area of the painting inaccessible to motorised vehicles. Temporary actions could be organised as well. For example, closing the street in front of the school and moving the playground to the street for a day could highlight the possibilities of using the public road as a place for children to skate, bike, or draw with chalk. At the same time, such activities would require a different organisation of motorised traffic when dropping off and picking up the children. If repeated regularly, this could eventually result in a permanent monthly event. In the longer term, an application to redesign the street for one-way traffic could be combined with softening one lane, thereby improving the infiltration of stormwater for the surrounding area and reducing the intensity of common roadway flooding.

Through research by design, the team also developed a follow-up plan for realising more functional bicycle traffic: a manual for establishing a "bicycle bus" to encourage cycling to school in groups. Although such an initiative would make cycling safer, it would be impossible without demand for it. Design research is being conducted to explore how actions in school environments in Paramaribo could be continued and expanded. Unfortunately, the bike bus has not yet been organised.

4. Discussion

Despite the limited number of actions and the brief time span for the field research in situ, the project has yielded some preliminary insights regarding the effects of positive preconditions, identification of capable actors, bringing the actors together in a network, and establishing actions. The results also illustrate the effects of collaboration between researchers and local actors to address a problematic situation through small-scale actions. The careful selection of the research area, in which hopeful practices were already present, made it possible to draw connections with local actors, build on

Figure 5. Painting on the streets in front of the Nabawi School. Source: Rymenants and Struyf (2022, p. 93).

their initiatives, and set the stage for the development of an actor-network within a short time span. The researchers were also able to build on the existing ISTT network that has been growing over the years. The renewed energy that accompanies a new group of students each year helps to activate local interest and community participation. These aspects illustrate the strength of the research process adopted by the ISTT.

Given that the researchers were not able to draw on an existing actor-network, a strong civil society organisation or well-functioning public offices, the DD-PAR fieldwork in Paramaribo North was not expected to have much effect on encouraging parents and children to walk or cycle to school in the short term. It may take years to transform entrenched habits. Additional actions are needed over a longer period, thereby allowing for incremental change of habits. Critical consciousness is also needed with regard to a more balanced modal split amongst the other road users. Over time, it will be necessary for motorists to adapt their behaviour in the presence of cyclists, given the importance of safety on the streets on the way to school. The research processes of the ISTT employ DD-PAR and urban tactics to provide a stepping stone to bottom-up change so that local actors can continue the process and achieve long-term goals once the researchers have left. Ambitions call for engaged local actors to pick up the thread themselves to initiate further changes. The role of the researchers is to activate these actors and show what is possible by initiating such urban tactics. This objective appears to be overly ambitious, however, as the networks are too fragile. Over time, the groups and organisations that are now emerging could grow into accountable civil society organisations. At present, however, they are not sufficiently institutionalised to assume the leading role played by the researchers during their DD-PAR fieldwork.

The formation of a network that reflects on current situations focuses on the empowerment of pedestrians and cyclists, and works towards social change that could improve the modal split in Paramaribo is a slow process of trial and error. Successful results help to sustain the interests of these actors, as well as regular follow-up by new students. The DD-PAR projects described in this article have activated a network that is willing to continue the work. For example, the principals and the parents' committee became more willing to engage in urban tactics after the walk-bike quest. As indicated by contacts with the school and cycling clubs, the path towards functional bicycle traffic will be slow and phased, with deliberate detours into the recreational sphere.

The methodology of DD-PAR using urban tactics played a leading role in this project, and its various elements all proved crucial. In addition to working in steps and small, punctual actions, local actors are essential to keeping the efforts feasible and affordable. The proposal to work with schools was one of the ideas conceived to encourage bicycle traffic. The existing organisational structure of the parents' committee (with its wide reach) appears to have been a key factor in the preliminary success of the actions. Moreover, schools can help to manage tension existing between government-driven and independent organisations. As a target group and a collection of actors to co-direct the actions, the Nabawi School constituted a vulnerable link within the project. The students of a secondary school would have been a better choice as, unlike the children of the Nabawi School, they are old enough to travel independently to school through the streets of Paramaribo. They might have been more solicitous than the members of the parents' committee, who must now take on the leading role for their children. The greatest challenge is now to ensure that the members of the parents' committee will continue the work voluntarily, without the researchers acting as a driving force. To this end, efforts are being made to fill the gap between research groups by organising a bicycle-stakeholder meeting to connect local actors who are already active within the field.

Although they should ultimately occur from the bottom up, urban tactics and the public discussion regarding pedestrian and bicycle mobility should not be completely separated from the government. The connection with the government in this regard is necessary, as civic actions aimed at altering the critical consciousness to generate a modal shift and change the mobility behaviour of citizens must be accommodated through the production of infrastructure. The relationship with the government appears to be fragile, however, and enthusiasm during a meeting does not necessarily imply cooperation for the implementation of the urban tactics. Instead of ensuring that sustainable mobility has a place on the agenda, long procedures with copious paperwork and persistent study apparently serve to keep it off the agenda, due to a lack of attention, political support, and a sense of urgency.

The DD-PAR fieldwork in Paramaribo North confirmed the existence of weak governance in the region. During the project, it was possible to identify key actors within public offices, involve them in our discussions, and spark their interest in urban tactics. The fieldwork period was nevertheless too short to develop a mature, robust relationship between actors in the private, societal, and public sectors or to involve the public sector in co-production. The dialogue has started, however, and fragile connections have been made, which can be built upon by future research groups.

Despite the limited success achieved with the public actors during the DD-PAR fieldwork, it was possible to stimulate the critical consciousness of several other actors. The most valuable outcomes of this research, however, are the testimonies of partners from the Nabawi School and the students of the AdeKUS concerning how their attitudes about bicycle use changed during the project:

> The researchers' actions led to tangible changes in the effective use of space at the Nabawi School. Through

> the application of urban tactics, they have been able to influence the traffic behaviour of and the use of the street by the parents and students of the school, resulting in an improved pick-up and drop-off of students during peak school hours. (Marciano Dasai)
>
> We, as Surinamese students who participated in the study, feel that the direct contact of the researchers with the Surinamese people was of added value. Thanks to this approach, the results are better suited to the context. This has an impact on the sustainability of the results and encourages the implementation of more urban tactics. (Priscilla Alendy and Wiedesh Ramcharan)

As highlighted by the theory of transition thinking (Geels, 2002), small-scale, bottom-up initiatives can ultimately become the roots of long-term system change. Building an actor-network is crucial to niche expansion to gain wider acceptance and support for new ways of thinking. Urban tactics or other small initiatives can strengthen the belief of individual actors in their ability and responsibility.

5. Conclusion

Achieving a sustainable future with significantly lower carbon emissions will not be possible without a sustainable mobility policy and a well-balanced modal split. Globally, many mobility strategies and good practices are available that could inspire urban environments to move towards an improved modal split. Most of these strategies require capable government, well-functioning public offices, and a strong civil society to advocate for better mobility policies and projects. Regretfully, not all urban environments are situated within a context of strong governance. Some are exposed to adverse governance mechanisms that make it difficult to implement such strategies successfully. In this article, we consider whether DD-PAR fuelled by urban tactics could serve as an alternative governance strategy for raising awareness and establishing actions to improve mobility in urban environments within contexts of weak governance.

When using DD-PAR, researchers work with real-life problematic situations, in which they try to identify capable actors, bring them together within a network, and establish actions driven by design. Such research generates multiple outcomes, including generating insight into specific situations, encouraging empowerment, and mobilisation, creating critical consciousness and stimulating civic action. Urban tactics can be described as specific types of action in which researchers focus on creative, low-cost interventions focusing on small-scale actions that initiate a mental transition and create positive change.

In a single case study conducted in Paramaribo North, a research team from the ISST used DD-PAR with urban tactics to improve the modal split. In a previous study on mobility at a larger scale in Paramaribo, ISTT researchers identified pedestrian and bicycle mobility as a critical problem, due to the absence of safe road infrastructure and a lack of awareness of the necessity of demanding a safe traffic environment for the various groups of road users in Paramaribo. In the same study, the researchers also identified Paramaribo North as an interesting environment where hopeful practices were emerging (e.g., recreational walking and cycling). The neighbourhood also has a substantial number of strong citizens who are not merely struggling to survive and who have the capabilities that they need to organise. A second group of researchers, therefore, returned to Paramaribo North to conduct DD-PAR with urban tactics. These researchers were able to identify capable actors and start a community dialogue. With regard to public actors, several interesting discussions occurred between the ISST team and public offices at the local and central levels, but the actual involvement of these offices (i.e., issuing permits to set up the actions) ultimately failed. Although the team was able to set up two urban tactics, only one was realised with local actors. The other action was performed solely by the research team. A fruitful collaboration with the local primary school was achieved, in which the ISTT researchers, students, teachers, and the school council were able to organise a successful walk-bike quest, followed by an intervention on the road in front of the school's entrance. The project thus generated enthusiasm, sparked reflection on current school mobility, and provided the initial stimulus for civic action aimed at improving mobility. Unfortunately, the objective to achieve actual change in the modal split in Paramaribo proved overly ambitious.

More time is needed in order to transform enthusiasm into an actual change in mobility habits. To this end, follow-up action research is necessary. Additional time will also be required in order to build a stronger relationship with the government and to involve it in urban tactics or to open a structural debate on changing mobility policy and including pedestrian and cycling facilities in the redesign of streets. To explore the opportunities identified within this project and to address the weaknesses of the DD-PAR fieldwork, further research is necessary. It is also important to explore ways of creating more continuity between the research periods of student groups. To this end, the ISTT should schedule follow-up research and improve the processes of DD-PAR.

Conflict of Interests

The authors declare no conflict of interests.

References

Adams, B., & Heirman, S. (2012). *Antwerpen-Paramaribo 2004–2010: Een bestuurlijke academische samenwerking ter ondersteuning van architectuur, monumentenzorg en stedenbouw in Suriname* [Antwerp-

Paramaribo 2004–2010: A public services and academic: A public administration and academic collaboration to support architecture, heritage and urban planning in Suriname]. Uitgeverij Gazelle.

Bilandzic, M., & Venable, J. (2011). Towards participatory action design research: Adapting action research and design science research methods for urban informatics. *Journal of Community Informatics*, *7*(3), 1–20.

Claes, B., & Debaene, W. (2009). *Strategisch ruimtelijk masterplan voor de binnenstad van Paramaribo* [strategic spatial masterplan for the inner city of Paramaribo] [Unpublished Master's thesis]. University of Antwerpen.

Dikland, P. (2004). *Ontstaan en groei Paramaribo: 1667 tot 2000* [*Origin and growth of Paramaribo: 1667 until 2000*]. Unpublished manuscript.

Gaventa, J., & Cornwall, A. (2006). Challenging the boundary of the possible: Participation, knowledge and power. *IDS Bulletin*, *37*(6), 122–128.

Geels, F. W. (2002). Technological transitions as evolutionary reconfiguration processes: A multi-level perspective and a case-study. *Research policy*, *31*(8/9), 1257–1274.

Goethals, M., Dasai, M., & Heirman, S. (2022). *The difficult practice of design driven participatory action research, the cases of Mariënburg and Moengo in Suriname.* Human Development and Capability Association.

Heirman, S. (2019). Waarom blijft stedelijke uitspreiding bestaan? Een onderzoek naar stedelijke uitspreiding vanuit een neo-institutioneel perspectief, casestudy: stedelijke uitspreiding in Paramaribo, Suriname [Why is urban sprawl sustained? A research focussing on urban sprawl from a neo-institutional perspective, case study: urban sprawl in Paramaribo, Suriname] [Unpublished doctoral dissertation]. University of Antwerp.

Heirman, S., Kooyman, S., Adams, B., & Stuyck, I. (2007). *Ruimtelijke context voor cases Centrum en Weg naar Zee: Paramaribo* [Spatial context for case studies inner city and Weg naar Zee, Paramaribo] [Unpublished Master's thesis]. University of Antwerpen.

Hout, W. (2007). Development under patrimonial conditions: Suriname's state oil company as a development agent. *The Journal of Development Studies*, *43*(8), 1331–1350.

IMF. (2021). *Country report Suriname* (No. 21/280).

Inter-American Development Bank. (2019). *Action plan for Paramaribo for emerging and sustainable cities programme*.

Interdisciplinary Studio for Territories in Transition. (2022). *Journal*. https://studio.istt.be/en/journal

Jankipersadsingh, H., Verkuyl, A., & Lutchman, L. F. S. (1993). *Structure vision Paramaribo: An urban framework for further action*. Arto.

Kindon, S., Pail, R., & Kesby, M. (2007). *Participatory action research approaches and methods: Connecting people, participation and place*. Routledge.

Lydon, M., Garcia, A., & Duany, A. (2015). *Tactical urbanism: Short-term action for long-term change*. Island Press.

Massa Marmocchi Milano. (2023). *Home*. https://www.massamarmocchi.it

Ministry of Public Works, Technical University of Delft, & University of Suriname. (1992). *Plan van Aanpak: strategische planning van de urbane gebieden in Suriname: Paramaribo, ondernemende stad! naar een strategie voor het beheer van de stad Paramaribo* [Plan of approach: strategic planning of urban areas in Suriname: Paramaribo, enterprising city! Towards strategic management for the city of Paramaribo]. Unpublished document.

Ministry of Public Works. (2010). *Suriname: Institutional strengthening of the transport sector, transport masterplan*. Unpublished document.

Nakamura, N. (2015). What is a community's desire? A critical look at participatory research projects with Indigenous communities. *Social & Cultural Geography*, *16*(2), 165–182.

NEA Transport Research, GOPA, & STC. (2011). *Suriname, institutional strengthening of the transportation sector, thematic paper: Road maintenance*. European Development Fund.

Neyt, H., Paeps, R., & Peleman, A. (2020). *Blue green network for Paramaribo-North* [Unpublished Master's thesis]. University of Antwerpen.

PHI Architecture for Inter-American Development Bank. (2005). *Urban development plan for Paramaribo*. Unpublished document.

Rueda, S. (2019). Superblocks for the design of new cities and renovation of existing ones: Barcelona's case. In M. Nieuwenhuijsen & H. Khreis (Eds.), *Integrating human health into urban and transport planning: A framework* (pp. 135–153). Springer.

Rymenants, S., & Struyf, M. (2022). Urban tactics voor fietsmobiliteit in Paramaribo [Urban tactics for bicycle mobility in Paramaribo] [Unpublished master´s thesis]. University of Antwerp.

United Nations. (2016). World cities report 2016: Urbanization and development—Emerging futures. UN–Habitat.

Verrest, H. (2010). City profile: Paramaribo. *Cities*, *27*(1), 50–60.

World Bank. (2023). *GDP per capita (current US$)–Suriname*. https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=SR

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