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Insights from a case study in Amsterdam

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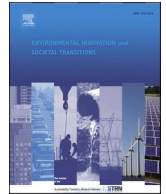
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Exploring (De)politicization in policy-driven urban sustainability experiments: Insights from a case study in Amsterdam

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ABSTRACT

Urban experimentation has gained traction with (supra-)national and local politics as a method for catalyzing change in urban systems and practices. Yet, with experiments becoming more commonly driven by established actors, concerns persist about their potential to sidestep political issues of power, exclusion and conflict fundamental to societal change. This paper seeks to unpack what exactly is at stake when the political is ignored or neutralized during an urban experiment. Using theories on the political as an analytical lens, the paper presents a case study of an urban experiment in Amsterdam, dissecting the ways in which (de)politicization operates in the experiment. The findings demonstrate that ignoring the political in urban experimentation risks excluding certain voices and options from being considered, which ultimately leads to stagnation. The paper concludes by outlining future challenges for research and practice that addresses (de)politicization in urban experiments.

1. Introduction

Urban experimentation has become an increasingly popular method for supra-national and municipal governments to promote changes in urban systems, including energy and mobility (Grönholm, 2022). These experiments aim to engage businesses, researchers, and citizens next to government in a more adaptive approach to urban innovation, with the goal of developing alternatives to unsustainable urban systems and practices (Sengers et al., 2019). Some scholars argue that this shift aligns with the academic call for more inclusive, non-linear forms of climate governance that involve diverse urban actors (e.g., Grin, 2020; Loorbach et al., 2020; Grönholm, 2022). However, these authors also express concern that such policy initiatives often fail to produce radical transformations toward urban sustainability (Loorbach et al., 2020; Grin, 2020; Torrens and von Wirth, 2021). This tension—between the growing adoption of urban experimentation by supranational and local governments as a tool for transformative urban change, and the necessity for experimentation to transcend incremental policy approaches—has been explored to some extent on a theoretical level (e.g., Grin, 2020; Torrens and von Wirth, 2021). However, the increasing integration of urban experimentation into mainstream policy agendas necessitates further development of both theoretical and, perhaps most critically, empirical insights into how this tension impacts practice and affects the transformative potential of urban experimentation. In this paper, I seek to address this issue by applying a heuristic framework developed elsewhere (Sierhuis et al., 2024), which builds on post-foundational political theory; a body of work that has long engaged with the tension outlined above from a more expansive perspective.

The framework particularly draws on Chantal Mouffe's (2005) distinction between 'politics'—understood as the institutions,

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processes, and actions involved in decision-making and the exercise of power that temporarily stabilizes societal orders—and the ‘political’, which entails the critical examination and contestation of these power structures and the societal orders they create. Using this theoretical distinction, I together with others (e.g. Kenis and Lievens, 2014; Kenis et al., 2016; Avelino et al., 2016; Köhler et al., 2019) argue that for urban experiments to effectively contribute to sustainable urban futures, they must be politicized (see also Sierhuis et al., 2024 for a more comprehensive theorization). In other words, they must transcend incremental change by providing opportunities for diverse urban actors to critically engage with, challenge, and potentially alter entrenched power geometries that uphold the status quo (Kenis et al., 2016; Sierhuis et al., 2024). In Mouffe’s (2005) terms this means that experiments should not just remain in the realm of ‘politics’ but also make space for the ‘political’. A key critique within this tradition is indeed that politics often fails to address societal challenges at the level of the ‘political, instead favoring consensus-driven, technocratic solutions that suppress ideological contestation (Mouffe, 2005, 2013). This inability of politics to move beyond the status quo raises important questions about the capacity of policy-driven urban experiments to catalyze the transformative change they seek. The heuristic framework, which acknowledges both the necessity of making space for the political in urban experiments and the challenges inherent in involving politics, provides a conceptual lens through which to explore and address the tensions that have already been identified by others (e.g. Grin, 2020; Loorbach et al., 2020; Torrens and Von Wirth, 2021). This acknowledgment of *both* politics *and* the political, amounts to what I consider politicizing urban experiments. Not acknowledging both, and more specifically not acknowledging the political, amounts to what I consider depoliticizing urban experiments.

Empirically, this study applies the heuristic framework to an illustrative case to examine the dynamics of (de)politicization within policy-driven experimentation. The case-study focuses on an EU-funded urban experiment in the energy sector, conducted in the city of Amsterdam and coordinated by its municipality. During the fieldwork, the experiment was in its early implementation phase, a critical period when various urban actors negotiated their interests and perspectives to shape key decisions about its future (Sengers et al., 2019). At this stage, the experiment’s trajectory was significantly influenced by the underlying power dynamics, as stakeholders ranging from the European Union to local residents contested and shaped its direction. However, this process was not consistently acknowledged as such which at times caused significant stagnation; the case study thus revealed tendencies toward both the depoliticization and politicization of the change processes it sought to facilitate through a variety of mechanisms.

The structure of this paper is as follows: Section 2 provides an overview of existing literature that has explored the integration of urban experimentation into policy frameworks. Section 3 and 4 present a brief discussion of the heuristic framework proposed by Sierhuis et al., 2024, with a particular focus on its operationalization. In Section 5, the case study under investigation is introduced, followed by an analysis of the findings in Section 6, which identifies the tendencies of both politicization and depoliticization within the experiment. The discussion section further examines how these tendencies have impacted the experiment’s potential to induce change. Although the experiment is still ongoing at the time of writing, preliminary evidence of these effects is already apparent and warrants attention. The paper concludes by synthesizing the key findings and suggesting avenues for future research and practical interventions aimed at addressing (de)politicization in urban experiments.

2. Tensions in policy-driven urban experimentation: some critiques

Urban experimentation is increasingly recognized as a crucial method for driving sustainable urban transformation. By testing and scaling innovative solutions to urgent challenges such as climate change, urban resilience, and social inequality, these experiments hold the potential to catalyze long-term systemic change (Evans et al., 2016). These initiatives foster collaboration among governments, businesses, and local communities, thus promoting governance innovation and participatory planning (Bulkeley et al., 2016; Evans et al., 2016; Voytenko et al., 2016). In Europe, initiatives like the Horizon Europe program—particularly its Climate-Neutral and Smart Cities Mission—play a pivotal role by allocating significant funding, including €98 million to help transform 100 cities into climate-neutral innovation hubs by 2030 (European Commission, 2024). These funding mechanisms support urban experiments aimed at addressing local challenges while contributing to global sustainability frameworks such as the United Nations’ New Urban Agenda, which emphasizes the importance of inclusive urban planning for sustainable development (UN-Habitat, 2018).

Despite the ambitious objectives of urban experimentation, there are considerable critiques surrounding its integration into policy agendas. A central concern is the mismatch between the perceived strengths of urban experimentation and the often bureaucratic processes that characterize policy implementation. Torrens and von Wirth (2021) argue that incorporation of urban experiments in mainstream policymaking results in their *projectification*, whereby experiments become structured as discrete, time-limited initiatives focused on measurable outcomes, thus undermining the long-term integration needed to achieve transformative change. Others (e.g. Savini and Bertolini, 2019; Drujff and Kaika 2021) echo similar concerns by showing how attempts to scale up urban experiments through policy transfer can stifle their openness, introducing top-down control mechanisms that diminish the experimental nature of the initiatives. Similarly, Grin (2020) critiques the implementation of system innovations from within the entrenched regime, suggesting that such efforts often fail to challenge or reframe the existing power structures they aim to transform, thus reinforcing the status quo.

Furthermore, from a more comprehensive perspective, critics argue that policy-driven urban experiments tend to prioritize manageable, technology-centric solutions that optimize existing urban systems, rather than radically disrupting them (Karvonen et al., 2014; Loorbach et al., 2020). This tendency risks reducing urban experiments to incremental governance tools, constrained by the interests of powerful stakeholders and by dominant neoliberal narratives that emphasize technological or economic progress over social innovation (Kaika, 2017). As a result, less powerful stakeholders may be sidelined, limiting the potential for transformative change. In this context, urban experiments may suppress rather than enable the productive conflict needed to challenge existing power dynamics and foster more inclusive solutions (Lawhon and Murphey, 2012; Kenis et al., 2016).

This tension between incremental, policy-driven experimentation and the need for more transformative approaches underscores the importance of critically assessing the (de)politicizing dynamics of urban experimentation. It is essential to examine *how* in policy-driven urban experiments actors deal and interact with issues of power, inclusivity and conflict, and thus how they would ensure that experiments do not merely reinforce the status quo but actively challenge the status-quo.

3. Framing (de)politicization in the implementation of urban experiments

To understand how (de)politicization unfolds in urban experimentation and its implications, I employ a heuristic framework (see Sierhuis et al., 2024 for an extensive discussion) primarily based on Chantal Mouffe's seminal concepts of politics and the Political (2005). This framework examines the tension between policy-driven, techno-managed experimentation (a form of "politics") and the need to address fundamental differences in power, values, interests, and stakes (the "Political"). The following discussion briefly introduces four ideal-typical scenarios that constitute the heuristic framework and illustrate (de)politicization's dynamics and impact on transformative change in experimentation (Sierhuis et al., 2024; see Fig. 1). This framework will provide the basis for the analysis presented in Section 6.

The scenario in the top-right quadrant of Fig. 1 builds on scholars who applied Mouffe's work to practice (e.g., Galison, 2010; Mäntysalo et al., 2011; Pløger, 2021; Rizzo et al., 2021), particularly emphasizing the agonistic trading zone. Unlike consensus-driven approaches, which assume urban actors can agree on problems and solutions (Mäntysalo et al., 2011), agonism acknowledges that full consensus is achievable only through exclusion: "there are always other possibilities that have been repressed and that could be reactivated" (Mouffe, 2005: 18). This perspective emphasizes the importance of openness to alternatives, especially those that challenge dominant power-laden agreements, even if they come from less-established actors and create conflict. Such openness is essential to triggering societal transformations that move beyond entrenched orders (Žižek, 2000; Mouffe, 2005; Swyngedouw, 2009; Kenis et al., 2016). Rizzo et al. (2021) show how their experiment revealed and facilitated discussions around fundamental differences in interpretation, needs, and priorities among participating stakeholders. However, politics must be in place to facilitate effective political action and to make possible a constructive interrogation of existing power-relations, exclusions and conflict. Without politics, *antagonistic conflict* (bottom-right scenario in Fig. 1) is likely to emerge between stakeholders without resolution (Barry and Ellis, 2015; Hillier, 2002).

If conflicting alternatives are dismissed in favor of maintaining a power-laden consensus, experiments risk failing to explore emerging possibilities whilst instead merely an optimization of existing societal orders (bottom-left scenario in Fig. 1) (Žižek, 2000, 2012; Mouffe, 2005; Swyngedouw, 2009). When transformative change is pursued solely through politics, as is common in EU-funded experiments (Loorbach et al., 2020), the approach often ignores the Political implications of change. This lack of recognition can result in unmet needs, resistance, or disengagement by stakeholders, hence I describe this scenario as taking a blind leap (top-left scenario in Fig. 1). Barry and Ellis (2015) and Rizzo et al. (2021) warn that without broad discussions addressing these differences, silent resistance or stakeholder withdrawal may undermine the experiment.

4. Operationalizing politics and the political to examine (de)politicization in urban experiments

Drawing primarily on political theory, research on depoliticization has remained relatively silent on how politics and the political in practice (Verloo and Davis, 2021). In what follows, I attempt to use these concepts to understand (de)politicization in the practice of urban experiments. In practice, there will likely be many nuances that do not fully align with the operationalization of the two concepts suggested below. Rather, my key objective here is to establish evidence of the scenarios presented in Fig. 1 to explore their heuristic value.

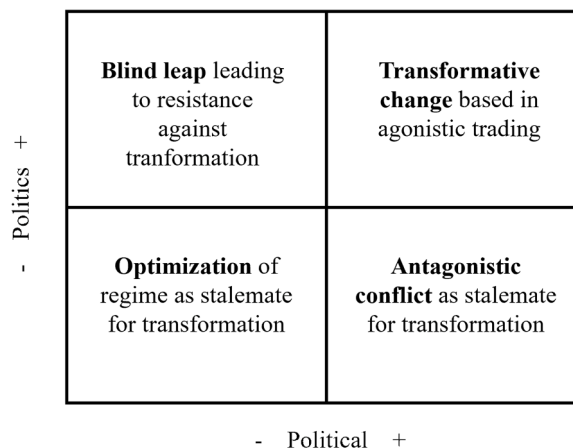


Fig. 1. Four scenarios in urban experiments in relation to (de)politicization and their impact on transformative change potential (Sierhuis et al., 2024).

Referring to Fig. 1 and the previously discussed literature, politics in an urban experiment can be understood as the formal practices, interactions, and negotiations among organizations, actors, and institutions that guide its decision-making processes. These range from written documents (such as grant agreements, contracts, and regulatory frameworks) to efforts to coordinate and evaluate the project. In high politics scenarios (as in Fig. 1's upper quadrants), these elements explicitly aim to institutionally embed the experiment as an agent of transformative change. Scholars (e.g., Roorda et al., 2014; Iwaniec et al., 2019) argue that in this scenario, politics should enable a flexible, multi-faceted approach aimed at a variety of technological and social intervention, allow problem definitions and solutions to evolve during decision-making, formally involve diverse actors with extensive knowledge and resources, and foster awareness of the deeper systemic issues underlying urban sustainability—avoiding reliance on minor, superficial interventions. Conversely, a low politics scenario (as in Fig. 1's lower quadrants) resonates with critiques of the reductionist approach to urban challenges (Kenis et al., 2016; De Moor et al., 2021; Loorbach et al., 2020; Da Schiao and Van Heur, 2022). These critiques, which have been advanced in both post-foundationalist and transition scholarship, point out that experiments do not realize transformative change when they are centrally driven by technological advancement and market competitiveness; mobilize a limited set of already established actors; and a focus on short-term solutions instead of long-term embedment.

The “political” in urban experiments can be understood in terms of how its politics acknowledge or suppress power, exclusion, and conflict are recognized within an experiment's actor network. In a low-Political scenario (Fig. 1's left quadrants), politics operates under the assumption of rational, consensus-driven decision-making. In this setting, the conflicts and differences inherent in the Political are denied or ignored, resulting in the dismissal or marginalization of alternative viewpoints as irrational or irrelevant, ultimately hindering meaningful change. Conversely, as highlighted by Stirling (2015), Kenis (2016), De Moor et al. (2021), and Da Schiao and Van Heur (2022), a high-Political scenario (Fig. 1's right quadrants) acknowledges the Political by allowing conflicting alternatives to emerge and be debated. In such a context, politics becomes a space for contestation, where power (who decides), exclusion (what is omitted), and conflicts of interest (differing priorities and goals) are made visible and actively addressed. Here, conflict is not treated as a problem to be eliminated but as an essential driver for questioning and transforming the status quo. This conceptualization of politics and the Political in urban experimentation is summarized in the following table.

5. Methods

5.1. Case study approach

Regarding the research design for this study, I adopted a similar approach to several others (e.g., Hillier, 2002; Flyvbjerg, 2006; Verloo, 2015, 2023) who have argued that in order to investigate how politics and the political emerge through everyday practices, the researcher must acquire an in-depth and tacit understanding of the intervention (in this case, an urban experiment) under study. A case-study design affords me to delve deep into an urban experiment so to understand how actors dealt with power, exclusion, conflict and various politics entangled in the experiment. Furthermore, considering a case-study design's restricted generalizability, a potential case required to be “critical” (Flyvbjerg, 2006) or “exemplary” (Yin, 2018) in order to gain contextual knowledge that could theoretically apply to similar contexts (Flyvbjerg, 2006; Roller and Lavrakas, 2015). This resulted in several criteria that guided my choice for a case.

Specifically, for this research the case had to be policy-driven, but also had to embody the characteristics of urban experimentation as outlined in the literature (e.g., Sengers et al., 2019), including the implementation of experimental social and technological innovations aimed at transforming urban systems toward sustainability, with the intention to scale these innovations for broader systemic impact. Furthermore, to investigate how politics (formal decision-making structures and actions and actors involved) and the Political (power dynamics, exclusions, and conflicts) interact in practice, the case required a complex ecosystem of actors, strategies, and decision-making processes (Mäntysalo et al., 2011; Pløger, 2021). This was essential for understanding how urban experiments both facilitate and hinder transformative change, especially in how they navigate entrenched power relations and the exclusions inherent in political processes.

Using these criteria, an experiments with a Positive Energy District (PED) in Amsterdam was selected as the case study. Its multifaceted network of stakeholders, integration of technological and social innovations, and potential for scaling-up provided a compelling example for exploring how politics and the Political manifest while implementing a policy-driven experiment.

5.2. Case description and research context

Urban experiments funded by the EU may offer an apt context to study the logics of how “politics” and the “political” affect urban experimentation. As mentioned in the introduction, the European Union (EU) supports numerous research and innovation initiatives in Europe's cities with the goal of fostering urban change. The EU has just recently begun to take a more experimental approach on such efforts, as seen, for instance, by its use of words like “experimentation,” “transformation,” and “radical change” (Loorbach et al., 2020). Additionally, EU-funded projects include numerous so-called “fellow cities,” where innovations are often targeted toward scaling-up, as well as broad coalitions of various actors from a variety of industries. Actors involved in EU-funded initiatives also commonly have to strike a compromise between local laws and EU financing regulation

The Positive Energy District (PED) (JPI Europe, 2020) experiment in Amsterdam, funded under the EU's Horizon2020 program, was selected as the primary case study for this research due to its dual focus on technological and social innovations aimed at advancing urban energy sustainability. In the Grant Agreement (GA), actors committed to developing a smart grid for local energy generation and trading while fostering a citizen-led energy community to raise awareness of consumption patterns and reduce

demand. The PED was established in Buiksloterham, a former industrial district transitioning into an experimental hub for urban development. The area's mix of self-built housing, architectural diversity, industrial remnants, and diverse stakeholders created a complex environment for planning and coordination (Gladek et al., 2014). Officially launched in 2020 with a five-year timeline, the experiment faced significant delays due to the COVID-19 pandemic. Key activities, such as community engagement, were postponed, shifting priorities during the first year. Initial plans to establish energy communities, where residents would co-own and manage assets, were delayed as outreach efforts were hindered by restrictions. By the second year, concerns grew about the feasibility of these social innovation goals, with limited resident participation and doubts about whether citizens had the resources or knowledge to meaningfully engage. These challenges eventually led to tensions among actor groups, as discussed in the findings.

In response to these difficulties, the project increasingly focused on immediate technological objectives, such as deploying smart grid infrastructure and meeting performance indicators outlined in the GA. These deliverables, being more narrowly defined, were seen as more achievable within the available timeline. By the second year, the experiment's scope had narrowed, deprioritizing the multi-faceted approach envisioned at its inception. This shift reflected tensions between the project's original ambitions and the practical demands of meeting predefined goals within a constrained timeframe.

The dynamics of the PED's actor network further influenced its trajectory. While the project involved thirty formal partners, including municipal bodies, consultancy firms, research organizations, and private companies, non-partner stakeholders, such as local residents and other influential actors, were excluded from key decision-making processes. These exclusions became especially apparent during the second year when attempts to expand community engagement highlighted the challenges of retroactively including overlooked stakeholders. Additionally, tensions within the actor network emerged as municipal representatives and researchers prioritized the experiment's learning potential, while private sector actors focused on measurable outcomes aligned with business objectives. These divergent priorities often fragmented efforts, complicating the experiment's ability to realize its initial vision.

The PED's trajectory highlights the challenges of aligning ambitious goals with practical implementation realities. External disruptions, institutional rigidity, and fragmented stakeholder engagement shaped its progression, limiting its ability to fully integrate technological and social innovations. By examining these dynamics, this research sheds light on the intersection of politics and the Political in urban experimentation.

5.3. Data collection

As a primary source of data for this study, I conducted eleven interviews with participants in the experiment with different roles: two researchers, four consultants, three public officials, and two participants from the private sector (Table 2). These interviewees were selected primarily because of their diverse sectoral backgrounds, so as to ensure that I included different perspectives on the experiment as a whole. Some citizen representatives felt they were underrepresented in the experiment and did not have enough decision-making power, especially with regard to their data privacy. As a result, conflicts developed between these representatives and some of the experiment's partners. This conflict proved to be worthwhile to consider on its own, and is reflected upon in Section 7.3.

Through semi-structured interview questions, I aimed to understand the political and politics in the experiment, as a means of positioning it in the heuristic framework of Fig. 1. To understand the project's politics, interviewees were asked reflective questions on its organizational and institutional aspects, such as coordination and deadlines. After transcribing the interviews, it became clear that other sources of data could offer relevant supplements. Respondents frequently mentioned how documents such as the grant agreement, various project reports, and press releases were instrumental in organizing the experiment. Some called the grant agreement the experiment's "bible." I read these documents iteratively after analyzing the interviews, noting relevant passages and adding them to the data set.

To determine what constituted the political in the experiment, interviewees were first asked to describe what they considered the experiment's most important goals and how these could be achieved. Second, they were asked when they and their organization would be satisfied with the changes and innovations promoted in the experiment. After the interviewees articulated their ambitions for the project, interviewees were asked if and to which extent other actors involved in the project shared their thoughts. Such questions were instrumental to understanding how my respondents constructed "others" in their discourse; were they seen as viable contenders, for example, or as distractions from the "real" tasks at hand? Identifying these attitudes allowed me to understand how actors engaged (and did not or failed to engage) with the experiment's political character and the idea of urban transformation in general. Finally, they were asked about the extent to which they believed these ambitions were shared by the experiment's other participants. In response to their answers, I frequently introduced abstracted ideas of other respondents, making sure they would remain anonymous, to discuss the experiment might take and establish whether and how the interviewee would reflect on these alternatives.

Finally, I followed Flyvbjerg's (2006) argument that understanding the political dimensions of politics requires that a researcher is closely involved in the project and thus gains an intuitive notion of its logics. I therefore immersed myself in the project, becoming a member of its research team, with a primary task to organize a mid-term evaluation of the project taking place between March and September 2022. I collaborated with a range of stakeholders during this time, and most interestingly, I attended a number of meetings where important decisions pertaining to the project were made. I regularly took field notes while observing in these meetings in addition to writing down my reflections on my dual roles as a researcher and a member of the project team. I continuously disclosed that I was a researcher in addition to my involvement in the project and that I intended to gather data, so that those present at these meetings were able to opt out. I used these observations only as a supplementary, undisclosed data source with which to triangulate the document analysis and interview data and thus further validate my findings. A list of meetings attended can be found in Table 3. Due to international partners being involved, some meetings took place abroad.

5.4. Data analysis

The overall approach of data analysis was based on continuous iteration between various data sources, the coding that was applied to them, the excerpts this resulted in, and the literature/operationalization presented above (Locke et al., 2022). The interview data and observational data were collected first, resulting in interview transcripts and field notes. Furthermore, during the initial analysis, various relevant documents were added to the data collection, in particular to understand the politics of the project and more generally to further assist in the overall analysis. The entire data set was coded thematically (Gibbs, 2007) using the operationalization of the heuristic device as found in Table 1. The analysis resulted in a table with a rich overview of excerpts per each data source, representing the various tropes of the scenario's sketched out in Fig. 1. These were further studied and compared iteratively, which eventually resulted in the findings presented in the next sections. Although the formal analysis was conducted by the author, the resulting topics of interest were informally shared and discussed with other members of the project's research team. This peer debriefing process (Anney, 2015) helped to further corroborate the findings through input from colleagues also working on the project.

6. Findings part I: exploring politics in the Amsterdam PED

Politics in urban experimentation can be understood as the formal practices, interactions, and negotiations among organizations, actors, and institutions that guide its decision-making processes. Politics, as informed by the literature discussed in Section 4, should facilitate certain conditions. This section, based on Table 1, will discuss how politics facilitated these conditions during the PED experiment in Amsterdam.

6.1. A multi-faceted or technology/market-focused approach?

A key aspect of politics is the extent to which an experiment adopts a multi-faceted approach to transformation—incorporating diverse perspectives and addressing systemic challenges—or prioritizes technological and market-driven solutions. In view of the initial grant agreement, the project indeed set out by pursuing a multi-faceted approach. There were, for example, next to the development of a smart-grid plans to organize local energy communities in which people would share certain assets in the energy network, as well as their perspectives on energy needs and wants.

However, the COVID-19 pandemic seriously delayed implementation, which together with the restrictions around social distancing put in place by the Dutch government, led to a reconsideration of the social innovations considered in the GA. Moreover, despite citizens being mentioned frequently as key to social innovation, interviewees questioned whether citizens would be willing to invest time and money in participating in the experiment.

But also, all the understanding that the people have to have about how their smart grid works and maintaining that and being an owner of that is... Well, you can't underestimate the knowledge burden and how much time and how much that essentially costs them that they're not spending time with their families, right? Or working on their jobs. (Private sector)

As delays mounted and doubts grew, the project shifted toward technological innovations to meet the deliverables outlined in the Grant Agreement. These aims were seen as more clearly defined and attainable within the project's timeline. Consequently, the multi-faceted ambition to implement a broad spectrum of innovations was jeopardized as the focus narrowed to measurable technological outcomes. More and more it's about how we can build these dwellings and how the technologies will function and less about new forms of governance and co-creation with citizens and so forth. [...] [O]ur tasks have become more of a side-concern. (Consultancy)

6.2. Actor networks: plural or one-sided?

Similar observations emerge from the data with regard to the second indicator that I proposed for understanding politics, the mobilization of actors for the project (see Table 1). Again, at first glance, the experiment appears to attempt to mobilize a large and plural actor network in that it involves thirty project partners operating from across the EU and with backgrounds in policy, research, consultancy and citizens. Nonetheless, interviewees had strongly divergent views on the purpose of involving such a broad actor network. On the one hand, in line with suggestions in the literature (e.g. Puarari et al., 2018), diverse actors being involved was seen as a potential strength. On the other hand, though, they also mentioned that differences in work cultures and interests were potential

Table 1
Operationalization of politics and the political in urban sustainability experiments.

Politics -	Politics +
· Technology/market-focused approach · One-sided actor network · Focus on short-term solutions	• Multi-faceted approach • Plural actor network • Focus on long-term embedment
Political -	Political +
• Alternatives suppressed to work toward one goal • Power/exclusion/conflicts of interest in decision-making undiscussed • Consensus orientated	· Alternatives voiced and considered · Power/exclusion/conflicts of interest in decision-making discussed · Conflict orientated

Table 2

Description of respondent's responsibilities in implementing Amsterdam PED.

#	Background	Responsibility
1	Public sector #1	Overall coordination of project-partners and communication with the EU.
2	Public sector #2	Coordinating the implementation of the local PED in the Buikslooterham, and citizen engagement especially.
3	Public sector #3	Local stakeholder engagement (business/citizens/industry in the area)
4	Private sector #1	Developing and rolling out relevant technologies.
5	Private sector #2	Main contractor for development physical environment
6	Research #1	Monitoring/evaluating the impacts of social/technological innovations
7	Research #2	Dissemination of findings, coaching of partners and other relevant stakeholders
8	Consultancy #1	Social innovations and monitoring their viability
9	Consultancy #2	Researching viability of new business models
10	Consultancy #3	Coaching for development of new business models
11	Consultancy #4	Replication and upscaling

Table 3

Observed meetings where relevant decisions on the experiment's trajectory were taken.

Date and place	Length	Participants	Topic
March 9, 2022 Online due to Covid-19	1,5 hrs	Consultancy, Municipality, Research	Defining PEDs and implications for Amsterdam PED.
April 20, 2022 Buikslooterham	3 hrs	Citizens, Municipality	Discussing various options for energy efficiency in Buikslooterham and implications for PED.
April 25, 2022, Amsterdam University of Applied Science	2 hrs	Consultancy, research, municipality involved with mid-term evaluation	Preparation meeting to decide on what to review for the mid-term evaluation and with what consequence for the project.
June 28, 2022 Matoshinos, Portugal	8 hrs	All partners involved with PED	General assembly on the project. Decisions on project direction, particularly implementation/replication
June 30, 2022 Matoshinos, Portugal	3 hrs	All partners involved with PED	Workshop on mid-term evaluation of the project. Decisions on general direction of the experiment with focus on lacking social innovations.
August 25, 2022 Buikslooterham	4 hrs	Consultancy, research, municipality involved with mid-term evaluation	Decisions on Amsterdam PED regarding delays due to Covid-19. Guided tour to understand progress so far.
Sept. 7, 2022 Buikslooterham	2 hrs	Idem.	Decisions on recommendations for experiment's course to coordination of the project.
Sept. 28, 2022 Buikslooterham	2 hrs	Idem. + private sector partner	Decisions on recommendations for experiment's course to coordination of the project.

barriers. As one respondent wittily remarked, "we're more or less on different pages of the same book" (Consultancy), casting doubts on whether the plural actor network was truly a strength.

Beyond the formal partners, stakeholders such as the Dutch energy network administrator and local resident groups were excluded, raising questions about the completeness of the actor network. Finally, those established actors that were included (such as the municipality) proved more layered than was initially thought. Departments that were not included could still strongly influence the implementation in Amsterdam, for example by disagreeing with certain financial arrangements. Because of this, some thought that the project's approach to stakeholder engagement was somewhat unfocused.

Well, we have, how to say... We have selected stakeholders based on very sharp definitions in the project itself. It's all just very narrow. (Public sector)

From this perspective, it could be argued that the complexity that the actor network would bring with may have been underestimated at the proposal stage. Contractual limitations compounded challenges, in particular because the GA predetermined the network composition, making it difficult to involve additional stakeholders during implementation. Although there are limits to the number of stakeholders that can be involved in a project such as this, there are also risks in determining these limits by way of contracts and funding agreements. In this case study, doing so resulted in the premature exclusion of stakeholders that might well have proven invaluable to the project at later stages.

6.3. Long-term perspectives or short-term solutions?

The project's politics also shaped its ability to embed itself as a long-term agent of change versus focusing on short-term deliverables. While the PED's ambitions aligned with the EU's broader sustainability agenda, unforeseen circumstances, such as COVID-19, often forced actors to prioritize immediate results. For example, the Grant Agreement required the achievement of specific milestones, which were often prioritized over broader questions of why and how these outcomes should be realized.

Getting all the permits, and constructing the area; it all just takes a lot of time. And just think about it, if I then need to install different heating pumps or whatever because there're researchers showing they are more effective, I need to ask for a different permit again. (Private sector)

The experiment's aim to scale up successful innovations to eight other European cities is key to its longevity. Various interviewees recognized that this strategy required a thorough understanding of these different cities and the contexts in which PEDs would be established. Moreover, the grant agreement had predetermined certain objectives and activities, which were less sensitive to context and more focused on replicating solutions in other cities. Here again, various interviewees mentioned that promises made in the grant agreement were too simplistic to ensure the experiment's longevity.

Now it's more like, we need to have an approach that fits all eight [cities]. That's impossible. We thought too naïvely about that. So now we need more flexibility, and a different type of effort. (Public sector [my addition])

6.4. Conclusion: high politics in ambition, low politics in implementation

At least on paper and in ambition, the experiment attempts to induce fundamental, long-term changes in energy systems. The experiment mobilized diverse actors to realize a broad spectrum of social and technological innovations in the area. Moreover, various mechanisms were put in place to scale up innovations and ensure the experiment's long-term potential. In this respect, the experiment showed signs of the high politics scenario proposed in Table 1. However, there is also evidence of a low politics scenario. As the experiment developed, the influence of complex, nested, and often technocratic politics was increasingly felt. Politics that were external to the experiment (such as processes for licensing permits) were too inflexible to allow for adjustment to new findings or delays in the experiment. Furthermore, there were many pre-determined elements to the experiment such as KPIs and deliverables, which had to be met. This is typical for a more technocratic approach to experimentation (Kenis et al., 2016). Efforts to comply with such requirements tended to narrow the experiment's scope.

7. Findings part II: the political in the Amsterdam PED

The "political" in urban experiments can be understood in terms of how its politics acknowledge or suppress power, exclusion, and conflict are recognized within an experiment's actor network. In this section, based on Table 1, I will dissect how the Political Figure in the PED.

7.1. Rational decisions or considering alternatives?

As proposed in Table 1, a politicized experiment allows for transparently voicing and considering a plurality of alternative choices. Interviewees were critical of the PED concept, particularly its one-sided focus on technological innovations. When asked about alternatives to the possibilities pursued in the Amsterdam PED, interviewees mentioned various other measures and innovations that might help transform the local energy system.

I think there are many pathways to scale up or replicate, you have to carefully think about that and test. Do we just build more energy-positive buildings in the area? Do we learn from other projects and implement their lessons along the way? (Research)

That said, many interviewees rejected as unfeasible alternatives that did not fit within the project's scope. For example, I asked about some fundamental changes to the experiment that had been brought to my attention during the fieldwork, such as the delegation of decision-making power to less established actors. My interviewees responded with doubt or skepticism. Some key arguments against my suggestions referred to the experiment's institutional embedding. For example, some indicated the experiment's five-year funding contract meant that there was not time to (re)consider decisions that had already been made. Requests for building permits, for example, are complex and often too slow to keep pace with the experiment's fast-changing environment.

We have to realize that the ambitions are really high, but we can only have so many ideas and lessons that we can put into a project like this. (Public sector)

[...] The processing time of all that just far exceeds the funding period, so it's impossible to do so and meet the deadlines in time. (Private sector)

In yet other cases, interviewees rationalized choices made during the experiment by arguing that they were informed by research. They used mostly quantitative evidence to steer their tasks, not least when collaboratively taking general decisions concerning the experiment's trajectory. Crucially, they left undiscussed the fact that research is itself based on choices—decisions to investigate certain topics, apply certain methods, or draw on certain theories—which could still produce blind spots in the experiment (Stirling, 2015). Moreover, taking an approach based only on research tends to cause means-end reversals, whereby answering research questions becomes an objective in itself, not a way of addressing the root challenges of unsustainability (Kenis and Mathijs, 2015).

We have a hypothesis, that we want energy-positive neighborhoods in Europe, and that we think those are important. [...] That's what we have to test in this project and what we have to achieve, measuring that. (Public sector)

From this perspective, it seemed there was little room left to go beyond what research, the municipality, and ultimately the EU demanded from the project. As focus shifted toward their demands for the project, other types of knowledge (not least those based in the community) tended to be lost. In this process, the experiment showed signs of what others have coined a techno-managerial logic in focusing on quantitative science and short-term results with less anticipation of what was happening on-the-ground and what other

options might have been available to steer the experiment into a different direction. (e.g. [Kenis et al., 2016](#); [Da Schiao and Van Heur, 2022](#)). Stakeholder groups, such as local residents or businesses, were primarily seen as research objects or end-users, reducing concerns about them (and citizens in particular) to regulatory or economic matters.

Yeah, but uh, yeah, I think it's still going to be a challenge to successfully engage the community [...]. Because, again, the individual residents, yes, they're getting some of the benefits of it, but that's not like they are getting paid by the project to provide these lessons learned and feed their information back to us, right? (Public sector)

7.2. Denying or discussing power, exclusion, and conflicts of interest?

The loss of input from citizens and other relevant stakeholders beyond research and the municipality that I observed during my fieldwork provided an opportunity to discuss power, exclusion, and conflicts of interest with my interviewees. However, these topics were almost always perceived as being too difficult to grasp. In some cases, they had negative connotations. Nonetheless, after further questioning, interviewees showed an awareness of certain conflicts of interest and unequal relationships in the experiment. The shifting relationships between citizens, civil servants, and the businesses involved throughout the experiment were perceived as a primary source of friction.

Some interviewees noted key differences in terms of interests and approach between civil servants, research, and to some extent consultancy on the one hand, and the private sector on the other. Whereas the first three sectors tended to focus more on the experiment's learning potential, business was principally concerned with marketing their innovations. If a focus on learning implied a willingness to fail if the experiment could still provide valuable lessons, the possibility of failure puts business portfolios at risk.

Yes, there are definitely some tensions there. I mean, research-oriented partners, they want to look beyond what's possible, they have a stake in that. But other partners they just want.... The project developer for example, they just want their project to succeed, preferably with some profits. (Public sector)

There were other, more keenly felt tensions between the experiment's top-down approach and the potential value of bottom-up input from citizens and other stakeholders. In the PED, at least on paper, citizens and stakeholders would generate their energy locally through co-owned assets. According to the initial project call set out by the EU, the grant agreement, and some interviewees, this feature of the experiment had the potential to empower citizens and stakeholders in the context of the energy market. The experiment was to enable citizens to relinquish the dominant ideas and systems underlying the centralized Dutch energy market and participate in an energy trading zone instead. Paradoxically, this concept was implemented in a top-down fashion, which ignored the input of citizens and other stakeholders during the development phase.

Well, I think citizen and stakeholder engagement is problematic because they simply do not have a lot to say in this project. (Public sector)

Ultimately, the lack of opportunities to receive such input from citizens and other relevant stakeholders fueled a more serious conflict between several partners and a pre-existing experiment in the area from which the Amsterdam PED took inspiration. As I discuss in the next section, it was in this particular instance that the political emerged most visibly during the experiment.

7.3. A consensus- or conflict-oriented approach?

Conflicts eventually arose between partners involved with the Amsterdam PED and a local community from which it wanted to learn lessons. Years ago, this community organized a bottom-up experiment in the area in sustainable living; its residents organized most of the contracting, had structures in place to make community-based decisions, and operated as a more or less unified entity. They were an unofficial partner with the PED, with only a letter of intent guaranteeing their cooperation. Hence, they did not receive any funding for their involvement.

Two years into the experiment, the community expressed their discontent with certain aspects of the PED. They indicated that there were no clear agreements on their role in the project. For example, they complained that it was unclear which data was being extracted from them to optimize the innovations implemented in the PED. Neither were they sure about what they would gain in return for their cooperation. At first, everything unfolded relatively slowly, with various civil servants involved with the PED attempting to mediate the issue. They sought to establish a consensus concerning the problems raised by the community, but struggled to fully grasp what was being demanded.

I really believe that we have to get everyone at the table to create win-win-win situations, which does indeed cost a lot of time. But that is what you have to pursue. But we do have to know where the pain lies first. (Public sector)

After some months, the situation escalated into a more serious conflict among members of the community, businesses that wanted to use their data, and the municipality, which attempted to mediate the issue. Several rounds of formal, written correspondence could not satisfy the community's demands, which led to them threatening to leave the project and take legal action. They wanted to retain control over their project, but their data was key for testing whether certain innovations would work for the PED. The municipality found itself split between its own interest in coordinating the project successfully, those of business in its need to acquire certain data to optimize innovations, and those of the community, which wanted to remain autonomous. Eventually, the municipality reduced the matter to a juridical issue by offering to change certain contractual aspects of the project in an attempt to meet the community's

demands. Similarly, business perceived the issue to be financial, arguing that the community should be more adequately compensated for their efforts.

We just didn't make sure to add them as a partner to make sure that they are, you know, a proper partner with budget to actually participate in the project and you know. (Private sector)

Given that there were no clear spaces in which these conflicting interests could be debated, confusion prevailed, which in turn prompted the community to leave the project. This ultimately led to stagnation in the PED, which depended on community participation to realize its promise for social innovation and energy positivity.

7.4. Conclusion: low political, until conflicts emerged

Overall, approaches to the political in the PED recall Mouffe's (2013: 18) statement that 'the political in its antagonistic dimension cannot be made to disappear simply by denying it, by wishing it away.' In its basic set up, the experiment constituted a low political scenario (see Table 1) in that it did not account for the voices and options of citizens and other stakeholders in the area. Moreover, actors such as the municipality, business, and research staked out new interests in the area without acknowledging that this would introduce new power relationships into its development. The political emerged when citizens and stakeholders started to table their demands for the area, but was not acknowledged in attempts to mediate the issue. As Mouffe's work anticipates (2005; 2013), the consensus-orientated approach to conflict mediation taken in this particular case did indeed result in further escalation and antagonism, producing an unresolved dispute and ultimately stagnation for the experiment.

8. Discussion: identifying scenarios and reflecting on how they affected the PED's potential to induce change

This section reflects on whether the experiment corresponds to any of the scenarios in Fig. 1 and discusses their implications for transformative change. One key observation is that the findings show little evidence of the agonistic trading zone scenario. As argued elsewhere (e.g., Mantysälo et al., 2011; Pløger, 2004; 2021), agonism requires a conflict-oriented approach that explicitly debates power and exclusion—an approach absent in the PED. Instead, the case study primarily reflects the blind leap scenario, in which change is pursued through politics (at least at first) whereas the political goes unrecognized. The experiment aimed to embed itself as a long-term agent of change in the local energy system. However, power dynamics, exclusions, and conflicts of interest were largely implicit, despite recognition by some interviewees. This lack of explicit discussion created resistance to change, particularly from citizens and stakeholders whose concerns were marginalized. Among official partners, the research-centric organization alienated business actors, reducing collaboration and mobilization. Some participants worked in silos, while others disengaged entirely.

In some respects, the case study reflects the *antagonistic conflict* and *optimization* scenarios. Antagonistic conflict arose when the municipality and business attempted to mediate pushback from citizens and stakeholders by way of a consensus-orientated approach. Eventually, this is where the political emerged most prominently in the project, although there were no strategies in place to render its conflictual dimension productive. Persistent attempts to forge a consensus instead of acknowledging conflict among the stakeholders involved meant that the different interests at stake remained unclear. As the heuristic framework proposed in Fig. 1 would suggest, this led to an unresolved, frozen conflict among citizens, business, and the municipality. The experiment again lost some of its mobilizing capacities because controversy eventually causes important actors to leave.

Finally, the optimization scenario corresponds to the way in which the experiment's scope gradually narrowed to a more technology- and market-driven approach, which complied with existing regulations and practices. By aligning with these dominant politics, the experiment lost some of its potential to induce more radical changes. These observations mirror case studies of other experiments in which a rigid, technocratic politics eventually forced those involved to adopt a short-term and one-sided approach (Drujff and Kaika, 2021). Arguably, strategizing the political could have provided the experiment's actor network with opportunities to contest the dominant politics, by offering more radical alternatives to current ways of energy provisioning, foregrounding the political could have safeguarded the experiment's potential to induce change. That said, strict rules and regulations, especially with regard to the planned technological innovations, limited opportunities to engage with the political. Hence, it proved difficult to experiment in an open-ended way, for many aspects of the experiment were predetermined by the rigid politics of the EU and local regulations.

9. Conclusions and future challenges

This study highlights the importance of addressing the political in urban experiments. The findings suggest that neglecting the political can hinder transformative change, particularly in policy-driven contexts. The heuristic framework offers a valuable tool for examining (de)politicization, but further research is needed to explore its application across different phases and experiments.

Nonetheless, by going back and forth between the data and framework, my analysis has focused not only on the quality of its politics in which the experiment is embedded, but also on the ways in which these politics address (or do not address) issues of power, exclusion, and conflicting interests. Given that the latter issue frequently goes unaddressed in both scholarly literature and practice (Sengers et al., 2019), there seems to be scope to apply the framework in more elaborate ways. This might be, for example, through a comparative analysis of multiple experiments or work more orientated toward action research, in which the framework can help show how the political in urban experimentation could be teased out and strategized.

Second, the analysis upheld the proposition that leaving the political undiscussed in an urban experiment can negatively impact its

potential to induce change. In the experiment studied, this neglect produced a blind leap scenario and resistance to change in some instances. In other respects, the rigid politics of funding frameworks, building regulations, energy regulations, and so forth meant that the experiment gradually aligned with—and essentially optimized—the status quo. Although focusing on one case study limits the extent to which these findings can be generalized, they do indicate that politics and the political are relevant in experimental ventures to transform urban systems and practices. Future research could expand on these findings by applying the heuristic to a broader set of experiments. Furthermore, by demonstrating how certain thought processes, institutional structures, and practices in an urban experiment tend to ignore the political, my analysis offers an empirically grounded perspective on the otherwise largely theoretical debate on depoliticization (Verloo and Davis, 2021).

Third and finally, the findings suggest that there is scope to research other phases of an experiment using this framework. My analysis demonstrates how many of the decisions that influenced the development phase of this experiment had already been taken when its proposal was written, for example thinking about the call written by the EU or the proposal that was drafted before the GA was signed. This opens up questions regarding how policy-driven experiments, which often emerge from politics, can ensure that the political also emerges and remains prominent over their entire trajectory. By dissecting these other phases with help of the heuristic framework offered in this paper, it may be possible to paint a broader picture of the relationship between politics, the political and the potential to induce change in urban experiments.

CRediT authorship contribution statement

Darren Sierhuis: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

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Supplementary materials

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Data availability

The data that has been used is confidential.

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