Temporary Use Stabilisation in German & Dutch Contexts of Urban Regeneration

TEMPORAL ENTRAINMENT

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UIT DE ZUCHT IN DE KANTOREN	*FROM THE SIGH IN THE OFFICES*
UIT DE VLOEK OP DE FABRIEK	*FROM THE CURSE ON THE FACTORY*
WORDT STEEDS OPNIEUW	*AGAIN AND AGAIN*
DE DROOM GEBOREN	*THE DREAM IS BORN*
VAN EEN WERELD DIE NIET ZIEK	*OF A WORLD THAT IS NOT SICK*
VAN ONVERVULD VERLANGEN IS	*OF UNFULFILLED LONGING*

- Loesje

To Erdbeere…

SUMMARY

Over the last two decades, temporary uses have proliferated in practise. Urban (planning) scholarship discourses have witnessed this, too. But concerns in practise and discourse intensify not just for the increasing popularity of temporary uses as ways to bridge uncertainty in urban change; rather, concerns now question how we might better understand temporary uses' enduring legacies. This shifts emphases to how new understandings should be framed in relation to broader and processes of change. This dissertation's work is incited by this dilemma here, the latter of which is further spurred on by forces such as the recent COVID-19 pandemic, deindustrialisation, economic restructuring, neoliberalisation, and austerity. Against this background, the work here investigates temporary uses as facilitated or leveraged by urban regeneration approaches. This is an initial setting to illuminate the breadth and complexity of temporary use processes. The latter is of particular interest here and represented by the processes through which temporary uses stabilise.

By studying how temporary uses stabilise, this dissertation pursues two key conceptual and substantive aims. The first regards the possibility to frame the relationship between long-term processes of change and short-term temporary uses through a temporality lens. The second is to develop a temporality relevant vernacular to articulate insights gained through this lens. Three research questions operationalise these aims: How does temporary use stabilise? Which factors are key to the explanations of how temporary use stabilise? And, how can we explain temporary use stabilisation and supporting factors through a temporality lens?

The empirical insights from data collected between 2015 and 2019 in the comparative case study contexts of urban regeneration in Bremen (GE) and Rotterdam (NL) inform the analyses and mixed-methods approach of the work. These include qualitative analyses of interview transcripts, site and participant observations, as well as a range of scholarly, policy and grey literature. These also encompass hybrid qualitative and quantitative analyses through bibliometrics and fuzzy-set Qualitative Comparative Analyses. The former surfaces key socio-semiotic trends in scholarly literature and informs a framework of conditions to help with a set-theoretic and comparative study of commons conditions that help temporary uses stabilise. More generally, the empirical insights explicate the diverse patterns of temporality through processes in temporary use (adaptation, professionalisation, and communication), which are also contingent on configurations of conditions as supporting factors for stabilisation.

Elaborated through a series of five contributions, the dissertation presents not only analytical work but proposes a line of reasoning that argues for the framing of temporary uses processes as temporalities, which express various and interacting rhythmic patterns. This introduces less binary (e.g. permanent vs. temporary) illustrations of how temporary uses stabilise and colours in the paradoxical and plural nuances of temporary use processes. Such a framing does not make measures of duration the keystone for framing processes of temporary use, rather explicates through characterisations of temporalities. These understand processes of temporary use (stabilisation) as layered, interpenetrating, and subsuming processes in temporary uses (adaptation, professionalisation, and communication). A temporality framework that mobilises the concepts of 1) trajectories, 2) rhythmanalysis, and 3) entrainment helps explains stabilisation. This begins with resilience-oriented understandings for how temporary users come together to experiment and learn, in order to build capacity for adaptation. This makes an initial case for processes of adaptation in temporary uses reflecting synchronised temporalities. Adaptation applies to material spaces as well as social aptitudes and competencies. These transform structures into creative and innovative places while helping initiatives develop entrepreneurial insights and regulatory literacy. Simultaneously, efforts from

public administration through regeneration programmes and innovative policies further synchronise more formal processes of adaptation. From the synchronised temporalities of adaptation other processes unfurl. These set off tangential or parallel processes of professionalisation. Processes of professionalisation demarcate different rhythmanalytic trajectories for both spatial stabilisation and spatially detached stabilisation. Spatial stabilisation could emerge as fixed and again synchronised with other material and social temporalities. Spatially detached stabilisation in contrast are footloose and characterise syncopated temporalities. Complementing processes of adaptation and professionalisation are processes of communication, which establish temporary use's conceptual presence. Here, we uncover the (re)produced symbols encoded by the keywords of scholarly discourses. Sharpened socio-semiotic and bibliometric approach, these indicate recursivity and resonance with patterns in policy discourses. Here, temporalities are circular, looping into temporalities of practise to bring forth more discursive and conceptual stabilisation. The rhythmanlytical vocabulary helps articulate the diverse patterns of synchronisation and syncopation, while the notion of trajectory helps delineate paradoxical paths of stabilised temporary use in space. Altogether and interwoven with the temporalities of broader and external processes such as urban regeneration, temporary uses become stabilised in the forward motions of entrainment. Pulsing temporary use efforts meet and catch onto the momentum and tempos of imposing strategies for change.

The outcome of the analyses and contributions support the rationalisation that it is possible to frame how temporary uses stabilise through a temporality lens. By drawing on trajectories, rhythmanalysis, and entrainment, this work advances a temporality framework to enhance our understandings for how multiple and layered temporalities, expressed through processes in temporary use, stabilise temporary use. Diverse bundles of conditions are also brought to light and can express temporary users concerns through risk perceptiveness, entrepreneurial management, adaptive capacity and interactive attachment. Materially, they might be embodied in the spatial affordance and considerations for functional compatibility. Finally, spatial trajectories of temporary use often need some degree of municipal support. Altogether—processual temporalities and rhythmic bundles of conditions—are the factors that are key to the explanation of how temporary uses stabilise.

These findings also unearth other temporal concerns for how time is understood, leveraged, and made inclusive. While the relational explication that links temporary uses to broader processes such as urban regeneration is clarifying, it also makes highlights how different and current conceptualisations of time and temporalities are generating potential gaps in how it is valued. There are lessons to be learned by scholars and practitioners about the variety of rhythms and paces, as well as how they undergird new notions of capital, politics, futures, and spaces. Most relevant for scholarship, this dissertation draws attention to how unmindful respect for conventions (re)produce blinders in methodology. These feature an over-reliance on *duration* as measures of time that are propagated through tendencies towards singular case studies. This is not to say that these conventions do not have their place. But limitations in our instruments to understanding urban change likely rooted in limitations to our own ways of thinking. As such, further research should build on this work, both conceptually and empirically in order to address limitations in our toolbox and enhance our capacities to confront urban change. Research on processes relevant to temporary use are underway, but greater differentiation on their respective and temporal characteristics could be made. These could make use of more thorough rhythmanalytical approaches, or take on other frames of understanding including (but not limited to) resilience, intersectionality, or time-geography. Empirical points of departure are set through the exploration of configurations of conditions in this dissertation. Lastly, a more thoughtful engagement with time and temporality in the full range of domains in research design (philosophical, conceptual, methodological, and substantive) through process- and longitudinal studies could give further insights on temporary use stabilisation.

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LIST OF ABBREVIATIONS

AC	adaptive capacity
CAS	complex adaptive systems
CCIT	Canadian Cities in Transition
cf.	lat. confer “compare”
COVID-19	Coronavirus Disease 2019
e.g.	for example
EM	entrepreneurial management
ERDF	European Regional Development Fund
ESF	European Social Fund
EU	European Union
fsQCA	fuzzy-set Qualitative Comparative Analysis
FC	functional compatibility
GE	Germany
IA	interactive attachment
IBA Emscher	International Building Exhibition Emscher
ICR	Intercoder Reliability
MS	municipal support
NL	The Netherlands
pN	plaNext
RP	risk perceptiveness
RQ	research question
SA	spatial affordance
SDS	spatially detached stabilisation
SS	spatial stabilisation
UIA	Urban Innovation Actions
UP	Urban Planning
URP	Urban Research & Practise
TUTUR	Temporary Use as a Tool for Urban Regeneration
ZZZ	ZwischenZeitZentrale Bremen

1. INTRODUCTION

Constant, at interval and yet rhythmically interwoven: these characterise the subtle tensions shared through the processes of temporary uses — particularly those tending towards stabilisation. But is there a way to explain the paradoxical phenomenon of how interim activities unfurl and take on a sense of fixedness? And is fixedness the best way to determine the breadth or depth of stabilisation? As a part of processes, which I understand as "events or activities that describe how things change over time" (Mari & Meglio, 2013, p. 208), temporary uses are a particular typology of events and activities that are gaining ground. Often, they are responses to the long durées of crises (structural, political, socio-economic, or natural); these follow the repercussions of neoliberal and austerity measures (Bragaglia & Caruso, 2020; Cian O'Callaghan & Lawton, 2015). Moreover, they commonly encompass development-oriented activities for undefined periods of time; this is regardless of if they are informal (or not), tolerated (or not), bottom-up or top-down driven (Lehtovuori & Ruoppila, 2012; Till & McArdle, 2015). In the context of increasing uncertainty impacting all manners of planning praxis and processes (Lamker, 2016), some claim that they are not likely to disappear, but instead proliferate as already encouraged by trends such as neoliberalisation (Bragaglia & Caruso, 2020) or policy mobility (Liu, 2017).

Recent experiences in the draft of the COVID-19 pandemic seem to substantiate these claims as temporary uses have progressed from popular to mainstream amenities since their effectiveness as coping strategies prove more impressive than ever (Herman & Drozda, 2021; Law et al., 2021). As interventions, they help outdoor recreational spaces evolve to conform to social distancing guidelines. They illustrate panache and creativity through pop-up and spill-over structures; these creep up neglected properties and extend curb side terraces regardless of if they respect local zoning regulations.

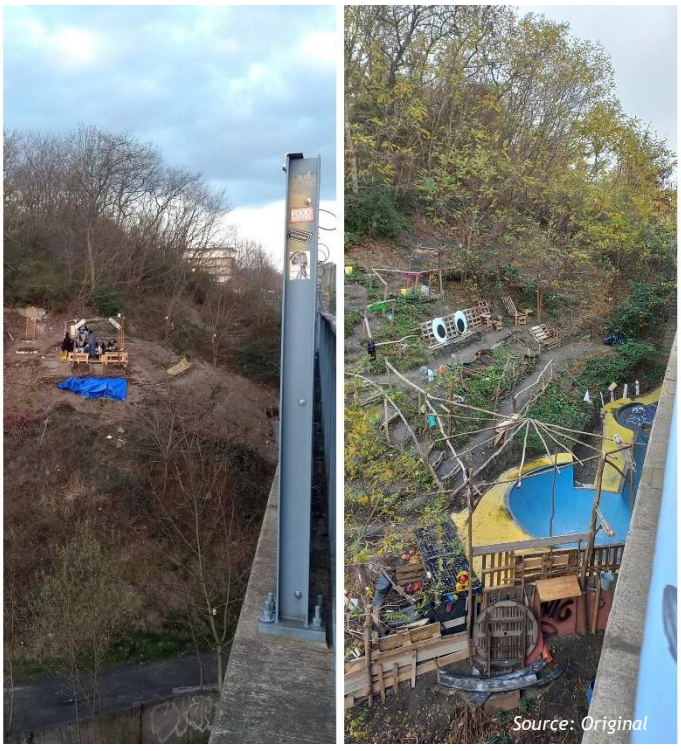


Figure 1. Temporary uses creeping up the hillside during the summer of 2020.

There is little doubt about the need or value of converting existing structures and sites into temporary public spaces, especially if they enable stakeholders to socialise, conduct business or deliver much needed health policies. But ambiguity and speculation looms beyond the proliferation of temporary use as communities struggle to make sense of the potential legacies from these interventions. Questions that surface might ask: *How long will readiness for informal and temporary interventions embodied in ad hoc structures and place endure? How robust will these interventions become? How resilient will the initiators of these*

interventions evolve? Are these now extensions of new normals? There is much terra nova about our understanding of how these temporary uses might stabilise.

In attempting to understand the potential legacies from these interim spaces and practises, this dissertation presents a research project through which I invite urban scholars and practitioners to a broader and more conceptually thicker engagement with time and ***temporality*** as a means for understanding processes of temporary use. Temporality here observes "a site where various rhythms of turn taking […] scrape against one another" (Abbott, 2001, p. 238). Abbott's interpretation of "this scraping [as] our primitive experience of temporality" is the starting point for the trajectories of tendril and interactive experiments from temporary uses (2001, p. 238). These are synchronised and syncopated. They delineate spatial trajectories and symbolic recursivity. Altogether, these forge temporary uses' tenacious processes of stabilisation. My work here presents a temporally nuanced vernacular of concepts anchored through a set of published and reviewed contributions. These explore and explain the processes in temporary use and inform an explication of *how temporary uses stabilise*. For this, I will make use of various theoretical and analytical lenses to argue for a less yoked understanding of time embodied in temporary uses. This understanding of time through the concept of temporalities might untether us in rethinking temporary uses and processes therein or thereof. Temporalities are thus various points of entry into the time-oriented patterns that emerge through the self-organizing and interacting behaviours of temporary uses. These are non-linear and manifest through rhythms that are harmonised, off-beat or, circular. This also conceptually and methodologically provides a greater palette of language to articulate the diverse and non-linear processes that emerge in contemporary cities.

I draw on work from the disciplines of urban geography and planning, sociology, anthropology, organisational as well as urban and complexity studies to assemble the vocabulary and supporting syntax to explain how temporary uses stabilise. This project explores lower-scale processes against urban regeneration backgrounds that are informed by literature and policies shedding light on urban transformations in Europe. These transformations are "about people and the process through which actors and stakeholders engage in urban making" (Andres & Zhang, 2020, p. 9), such as those provoked through urban regeneration. This also lays out the multi-scalar circumstances upon which I explore and try to explicate processes of temporary use as temporalities that become entrained. Entrainment in this light also takes inspiration from the concept of "enduring" change to understand how temporary uses stabilise (Eshuis & Gerrits, 2019, pp 5-6).

I begin first by looking to processes in temporary uses. These are introduced in part 1 of this dissertation and help root the motivations for this research. As well, processes in temporary uses are discussed in relation to the state of scholarship and gaps in understanding (section 1.1), before outlining the questions anchoring this research and how they scope this dissertation (section 1.2). Following this, part 2 of the dissertation elaborates on the contextual and conceptual framework for this dissertation. In particular, the relationships between processes of temporary use and urban regeneration of the work are explicated (sections 2.1) in the case studies' geopolitical contexts (sections 2.1 and 2.2). Subsequent to this are rationalisations for a conceptual reframing. These highlights issues in general thinking about time as well as theoretical inspirations to structure the syntactic rethinking about time (section 2.3). This elaborates the logic and arguments for a temporal re-framing, which makes use of a rhythmanalytical framework to explicate stabilisation as processes of entrainment (section 2.3.2). An overview of the critical realist ontologies that

help position the conceptual framework and methodologies is presented in the chapter on research design (section 3.0). Proceeding this, research highlights supporting the conceptual and research work are presented. These are detailed through research highlight summaries of the various publications contributing to this cumulative dissertation (section 4.0). A discussion synthesises the results and helps orient the outlook for future research and practice (section 5.0) before the conclusion of the dissertation (section 6.0). Research highlights and their specific publications are denoted throughout the dissertation with a hashtag (#), number and where deemed appropriate, journal acronym. These are outlined in the breakdown of the publications in section 1.2.

1.1. MOTIVATION FOR RESEARCH

> *We look for a setting that, rather than simply being a facsimile of the past, seems to open outward in time.*
>
> (Lynch, 1972, p. 57)

This dissertation begins by looking to processes in temporary uses, such as but not limited to the functionalisation of individual and collective activity (Bertoni & Leurent, 2017; Pruijt, 2003) or policy adaptation and amendments (Bishop & Williams, 2012b; Patti & Polyák, 2015). This recognises the need to find constructive and nuanced responses to questions of how, as opposed to if urban agendas – which include temporary use – "can find policies able to work in a selective and strategic way, producing impacts that can benefit urban societies in a differentiated way" (Zimmermann & Fedeli, 2021, p. 323). Temporary uses under the heading of ***temporary urbanism***, present as phenomenon that have become notable on the streets and in scholarly discourses with particular geographical attention to temporary uses "prevalent in Britain and Europe and involves a focus on time horizons and rhythms of change" (Stevens & Dovey, 2018, p. 324). These practises and processes also characterise a variety of sub-forms that range from "bottom-up temporary urbanism", to "top-down temporary urbanism," and "hybrid temporary urbanism" (Andres et al., 2021, p. 3). In contrast to other discourses such as tactical urbanism, which are rooted in North American examples of short-term uses that activate strategic change (Lydon et al. 2015), this source of theorising is advanced in critically reflecting on the characterisations of temporary use through time or its variations of temporality and temporariness, in relation to broader processes of change (Andres & Kraftl, 2021; Madanipour, 2017; Moatasim, 2019; Szaton, 2018). By situating this dissertation in this discourse, I consider how to enhance the congruency of the scope, analysis and concepts considered in this dissertation. As well, the work here features case studies from the European cities of Bremen (GE) and Rotterdam (NL), which further aligns geopolitical aspects of study. Key, however, is that this dissertation is most appropriately placed here as interlocutors of the temporary urbanism discourse have already called to attention the underdeveloped considerations of practises and processes involving time (Andres & Kraftl, 2021; Mc Ardle, 2020).

The irony is not lost on me, that this dissertation pursues a study of the successive legacies that come out of ephemeral and temporary uses. Indeed, studies on temporary use are moving away from the nascent or catalytic qualities of experimentation, creativity and entrepreneurialism that transformed underused spaces (Oswalt et al., 2013). Instead, reorientations that lean through a "temporary turn" (#2 UP)

are alerting and beckoning us to make sense of the convoluted and less obvious relationships involving temporary uses. In other words, the research here is motivated by a sense to bring clarity to the "overaccumulation of work and interests towards temporariness" of temporary use; I pursue this by responding to calls for a new research agenda that mobilises practitioners and scholars to better theorise time and in particular temporalities embodied in temporary uses (Andres & Zhang, 2020, p. 4). Conceptually, the research here is further motivated to unveil the implicit value of time and temporality embedded in urban (planning) practises and processes. I argue that these are channelled through multiple processes and integrated into broader and enduring urban transformations (Andres, 2013; Eshuis & Gerrits, 2019; Ferreri, 2020; Madanipour, 2017). What is invoked are questions at many levels about 1) how we frame long-term urban planning and design that leverage or are constituted by short-term activities; as well as 2) the collation of vocabulary and syntax to articulate or inform the heuristics, which might help explain the mutual implications of short-term and tactical as well as long-term and strategic urban change.

This work begins by acknowledging spectrums of urban temporality (Galdini, 2020). For instance, these might be illustrated with activities and functions that are "transient," "recurrent," or "migrant" and thus neither permanent, nor fully temporary (Lehtovuori & Ruoppila, 2012, p. 30). To date, this has received limited focus from few scholars and further iterated by scholars such, as Windemer, who recognise that "very little research has assessed the temporal framing of planning regulation, considering what is controlled, over what time period, and what might happen when time runs out" (2019a, p. 1). While valid and more focused on the context of developing renewable energies (Windemer, 2019a), I hope to respond with explications and inspirations for how theory and practise could actually provide some answers. In other words, I align my logic of questions along with considerations for permit extension patterns or repeat applications in the context of urban regeneration (Martin et al., 2020; cf. Windemer, 2019a), but aim to probe further and introduce a conceptual framework and language in order to loosen the straightjacket of constructs currently framing "temporariness in city making" (Ferreri, 2020, p. 41). I do this by positing that temporality as a conceptual lens can improve our comprehension of not only how temporary uses are initiated, but also how they evolve and persist. This might help progress considerations of concepts and policies that too weakly consider issues of reversibility (Windemer, 2019b) or repetition (Martin et al., 2020). This will also help add to characterisations of temporality in the context of temporary urbanism as "instrumental", "existential" and "experimental" (Madanipour, 2017, p. 4), with additional conceptualisation of how it might be more a "complexity of times" (Adam, 1995, pp. 17–18).

1.2. RESEARCH QUESTIONS & SCOPE

As introduced above, the impetus for this research has its origins in the complex processes embroiled in temporary use; these also help temporary uses become stable and persistent. These may be independent of, but are often backgrounded by broader processes of urban transformations. As such, the work carried forth in this dissertation considers not just temporary use processes, but relates them to more extensive and multi-level processes of change. This is inspired by multi-level perspectives that might illustrate this through the transitions and transformations of socio-technical systems (Geels, 2019) or realms of cohesion policy and governance (Piattoni, 2010).

The dissertation undertakes this by setting an agenda to progress beyond typological and qualitative studies of temporary use, which is inspired "at a more abstract level […] the qualitative, asynchronous and multifaceted conception of time evident in the multiple histories and stories that link culture and identity... [or] change as a multi-story process" (Dawson, 2013, p. 252). I do this by integrating temporality sensitive theories and lenses relevant to conceptual and substantive domains (Hassett & Paavilainen-Mäntymäki, 2013, p. 7) with a multi-method approach. These serve my work in addressing the following research questions:

1. **How does temporary use stabilise?**
2. **Which factors are key to the explanations of how temporary use stabilises?**
3. **How can we explain temporary use stabilisation and supporting factors through a temporality lens?**

The research questions are built upon each other following abductive, deductive, and inductive reasoning and logic (more on this available in section 3.0). The initial and primary research question aims to expand considerations of temporary uses by probing for more subtle processes through which temporary use both conceptually and practically evolve. ***Stabilisation***, in this sense considers processes and patterns broader than, or encompassing institutionalisation. The latter, in relation to temporary users, has been considered in social, organisational or managerial, and legal or political senses up to date (Eshuis & Gerrits, 2019; Herman & Rodgers, 2020; Pruijt, 2003). Thus, the use of 'stabilisation' aims to elucidate the shaded qualities of temporary uses by advancing temporal qualities of institutionalisation that emerge across various interacting realms; these account for social, linguistic and spatial spheres of action. This line of questioning also allows for methodological investigations and reflections. This is made operable through the second research question, which aims to account for the intricate combination of factors, and configurations thereof that might generate temporary use stabilisation. I draw on literature to inductively inform the set of considered factors (section 1.3, as well as sections 4.2, 4.3 and 4.4). Table 1 breaks down the parts of the dissertation in relation to the research questions. The degree of relevance is indicated by '*' and irrelevance indicated with '-'.

Part	Chapter	Aim or Publication	RQ1	RQ2	RQ3
1	1	Introduction	*	*	*
2	2	Context & Conceptual Framework	**	**	***
	3	Research Design	*	**	*
3	4	Research Highlight: #1 plaNext (pN)	*	***	-
		Research Highlight: #2 Urban Planning (UP)	**	***	-
		Research Highlight: #3 Urban Research & Practice (URP)	***	***	***
		Research Highlight: #4 Cities	***	***	***
		Research Highlight: #5 Canadian Cities in Transition (CCIT)	-	***	-
	5	Discussion & Outlook	***	***	***
4	6	Conclusion	***	***	***

Table 1. Breakdown of dissertation.

In the initial part of the research, I further draw on insights from emerging debates in temporary urbanism, to uncover nonlinear considerations of temporalities of temporary use processes through a rhythmanalytical lens (Andres & Kraftl, 2021; Lefebvre, 2004; Madanipour, 2017). This allows me to explicate stabilisation through temporal rhythms and entrainment (section 2.3.2), which emphasise how temporary uses involve many and diverse temporalities that interpenetrate and punctuate urban systems both conceptually and in reality. Facilitating these objectives, is an ontological positioning through a critical realist framework, which allows for this dissertation to integrate both empirically grounded and theoretically informed explanations; this completes the second part of the dissertation. In the third part of the dissertation I present summaries of the research highlights, which I also synthesise and reflect upon. These include both publications and manuscripts in review. In the final and fourth part of the research, I close the dissertation with final thoughts regarding the research work and process.

In order to scope the work in this dissertation, the research focuses on temporary use stabilisation specifically in the context of urban regeneration. This makes use of existing research discussing temporary uses against this particular urban development background. Specifically, it draws on literature in this context to also cover the adaptive (Eshuis & Gerrits, 2019; Lydon & Garcia, 2015; Wohl, 2017), the entrepreneurial (Murzyn-Kupisz & Działek, 2017; Oswalt et al., 2013), and the discursive (Honeck, 2018; Matoga, 2019; Topuzovski & Andres, 2020) processes intrinsic to temporary uses. As mentioned earlier, this dissertation will focus on the policies and planning restricted to the European context; in particular, the policies and developments laying the ground work for urban regeneration within the countries of Germany and the Netherlands will scope the geographical, political and cultural dimensions of my research work. Details and rationalisations for these backgrounds are laid out in section 2.2. A detailed breakdown of the cumulative contributions is presented below:

Part 3.1 Addressing processes ***in*** and ***of*** temporary use

#1 plaNext (#1 pN)	*#2 Urban Planning (#2 UP)*	*#3 Urban Research & Practice (#3 URP)* *(accepted and in publication)*	*#4 CITIES* *(request for revision and resubmission)*
Chang, R. A. (2018). Temporary Use & Collective Action: How Urban Planning Practices Contribute to Adaptive Capacity Building for Economic Resilience. PlaNext - Next Generation Planning, 7, 82-99. https://doi.org/10.24306/plnxt/51	Chang, R. A. (2021). How Do Scholars Communicate the `Temporary Turn' in Urban Studies? A Socio-Semiotic Framework. Urban Planning, 6(1), 133-145. https://doi.org/10.17645/up.v6i1.3613	Chang, R. A. (Accepted) Rhythmic Processes of Temporary Use: Understanding Spatially Detached Stabilization through Fuzzy-set Qualitative Comparative Analysis. Urban Research & Practice. Advance online publication. https://doi.org/10.1080/17535069.2021.2012715	*Chang, R. A., & Gerrits, L. What stabilises temporary use? A qualitative comparative analysis of 40 temporary use cases along synchronized trajectories of stabilisation. Cities.*

Part 3.2 Thoughts on practice and policy

#5 CCIT

Holden M and Chang RA (2020) The Ups and Downs of a Sustainable and Climate Resilient Development Path in Canadian Cities. In: Vinodrai T, Walker R and Moos M (eds) *Canadian Cities in Transition: Understanding Contemporary Urbanism*. Don Mills, Ontario: Oxford University Press.

Legend for published contributions towards the cumulative dissertation

Double-blind Peer Reviewed Articles	Open Peer Reviewed Articles	Other publications	Basis for cumulative dissertation

Table 2. Breakdown of contributions to the dissertation.

This dissertation will address priorities in policy and practice in a limited fashion within the dissertation publications and in an integrative manner for the discussion of the highlights (section 5.0). The work here emphasizes the theoretical reconceptualization that could illuminate and explain how temporary uses stabilise. Data collected between 2017 and 2019 are empirical sources that further support its arguments and conceptualisation. What this research offers instead, are contributions to the fundamentally underdeveloped thinking about time or temporality in urban processes (Andres & Kraftl, 2021; Madanipour,

2017). Temporary uses provided a point of entry into this endeavour; the latter aims to uncover how processes contributing to temporary uses reflect diverse, simultaneous and non-linear temporalities. By presenting this work and answering this dissertation's research questions, I will address the conceptual limitations to how we understand temporary uses and time as embodied in urban practises and processes (Andres & Kraftl, 2021; Ferreri, 2020). This could help explain how dis/continuity in practise might not appear as they seem. And finally, this dissertation will encourage continued reflection on the "path creation processes of temporary urbanisms" (Andres & Kraftl, 2021, p. 9) by advancing explicit engagement with concepts of time and temporality. This requires that we acknowledge how aspects of time are taken for granted by scholars and practitioners and that we become conscious of, or confront "temporal complexity" (Adam, 1995, p. 105). Only so can urbanists, and in particular urban scholars more expansively comprehend temporary use processes, not simply as measures of duration, but manifested and temporal patterns expressed through rhythms of becoming.

1.3. PROCESSES IN TEMPORARY USES

In delving into the various factors that contribute to temporary use, a range of dimensions can be found. While existing typologies of actors and initiatives have been prepared (Bragaglia & Caruso, 2020; Costa et al., 2021; Patti & Polyák, 2015; Polyák & Oravecz, 2015), the work here begins with the delineations of processes. This builds upon other work highlighting "different ways that land uses originally planned as temporary become more durable" (Stevens, 2020, p. 21; cf. Lehtovuori & Koskela, 2013; Oswalt et al., 2013). This processual approach helps demarcate research that has focused on the various forms of stabilisation, from which processes and conditions can be derived. Processes are elaborated in the following sections, while the latter are discussed and analysed in the publications and manuscripts (#2 UP, #3 URP, and #4 Cities) contributing to this dissertation as well as in section 4.0 later on.

1.3.1. ADAPTATION

Adaptation is paramount for temporary uses from earliest experiments with brownfields up until recent coping strategies in addressing the COVID-19 pandemic (Andres et al., 2021; Rall & Haase, 2011). This is enacted by a range of users to make use of temporarily available space. These might be activist, artists or even public administrations and developers (de Smet, 2013; Martin et al., 2019; Oswalt et al., 2013). Beginning with the material changes to "urban leftover spaces" that inspire experimental and temporary interventions, urgency for temporary uses builds through economically efficient and environmentally sustainable opportunities for the functional and interim adaptation of uses and structures; these can apply to a full range of infrastructures and resources, including the standard vacant buildings and open spaces (Hwang & Lee, 2019, p. 1). Squatters who reside in vacant office buildings illustrate this as do gardens or parklets that pop-up as more adaptive forms of spatial production (Stevens & Dovey, 2018; Van Boxel & Koreman, 2019). Without much certainty, these adaptations to structures and uses in the natural and built surroundings are not privileged with objective and determined ends; instead, they are often focused on "responding to outside forces beyond our control, seeking to survive, to preserve something, to maintain some desired level of performance" (Lynch, 1972, pp. 199–201). By building on sub-processes of learning and experimenting, these adaptations feed into fixed forms of spatial production, for which temporary interventions help pilot or prototype new functions and

combinations thereof. Iterative processes of experimenting and learning are often underscored in relation to temporary uses that endure. Only by continuously experimenting and learning can individuals enhance the purpose and value of adaptation; this ultimate helps to resist or prevent considerations and possibilities for reversibility (Havemann & Schild, 2007; Lynch, 1972; Madanipour, 2018). These are also vital in the development of capacity to understand and engage with regulatory processes, which can be facilitated through collective action and social learning (#1 pN, #3 URP, and #4 Cities).

Figure 2. Introducing ecological and material adaptation via a garden on top of het Schieblock.

1.3.2. PROFESSIONALISATION

Finally, a diversity of capacities and career pathways emerge through temporary uses and in some cases enable temporary users to benefit entrepreneurially from their experiments and learning (Oswalt et al., 2013; Stevens, 2018; Vivant, 2020). These embody the processes of professionalisation through which organised initiatives to individuals (i.e. architects, urban planners, as well as event planners or managers and programmers of spaces), generate opportunities that capitalise on the temporally available space or demand for temporary space. This is also generative of spatially detached or more migrant forms of temporary use stabilisation (Lehtovuori & Koskela, 2013; Oswalt et al., 2013; Stillwagon & Ghaziani, 2019). To be clear, many entrepreneurs also leverage temporary uses to experiment and develop original operational and economic concepts, but the proliferation of intermediaries and temporary use agencies within and outside of public administration amplify the growth, establishment and stabilisation of temporary uses, as well (Bragaglia & Caruso, 2020; Moore-Cherry, 2017; Vasudevan, 2015). I explore this in patterns of spatially detached stabilisations that is inspired by temporal patterns for professionalisation (#3 URP).

Figure 3. Stielmankoffie in Fenix Food Factory after the initiative was sold to another entrepreneur.

1.3.3. COMMUNICATION

In a more abstract sense, processes of communication also help stabilise temporary use. For instance, place-making is discussed at length as a process to promote creative economic development by inciting excitement and "buzz" the benefits are considered relevant for all range of stakeholders, regardless of whether they are public or private (Lehtovuori & Ruoppila, 2012, p. 35). While place-making processes might emphasise the creation of or identification with attractive public spaces as the locations of civic activity and residence, it is exactly this emphatic communication that underlines the core aims for economic development through marketing (Cilliers et al., 2015; C. O'Callaghan et al., 2018). Indeed, the communicative harnessing of social behaviours through place-making philosophies drive much of temporary activation to inspire more sustained manners of spatial production (Cilliers et al., 2015). The propagation of these intentions has become notable since early documentations of this on cities such as Berlin (Colomb, 2012). Since then, place-making has become a symbolic mechanism that is pivotal to policy discourse and cultural policy movements; it represents a clear and specific form of communication that leverages artistic action to steer urban policies (Grodach, 2017). Its reification as a part of neoliberal narratives is not limited to practice, which some have critically received scholarship (Andres, 2013; Andres et al., 2019; Honeck, 2018). I argue that these narratives are also permeating scholarly discourses. The second publication of this dissertation discusses through a socio-semiotic framework (#2 UP).

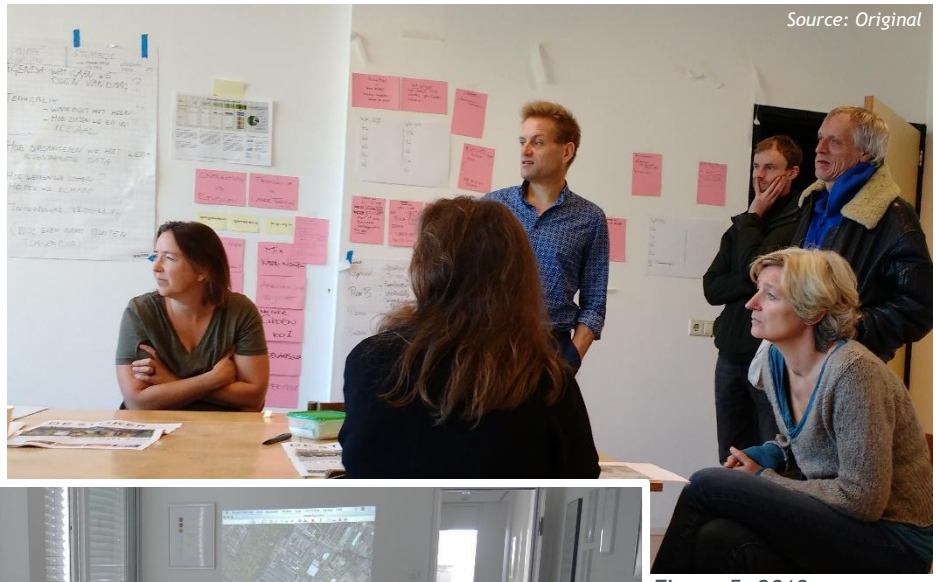


Figure 4. 2017 Participant observation at a ZOHOCitizens steering meeting in Rotterdam.

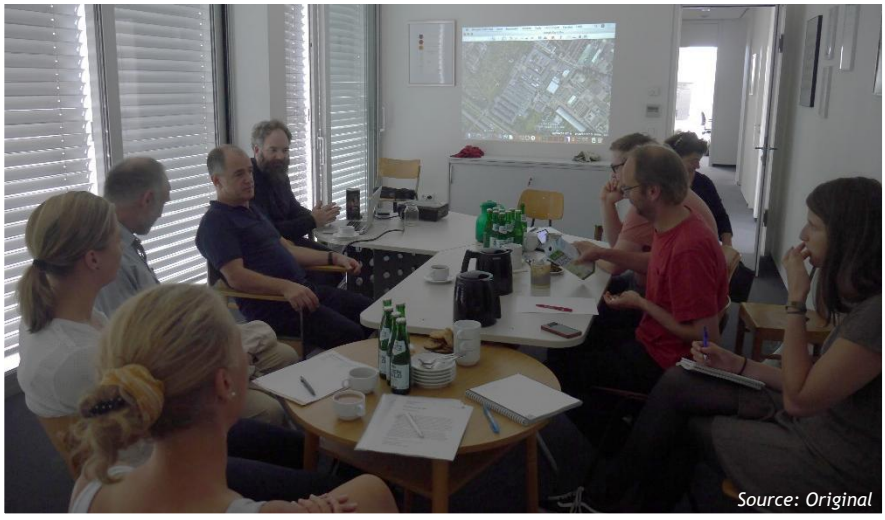


Figure 5. 2018 Participant observation at a municipal steering meeting for ZZZ in Bremen.

In short, these processes of adaptation, professionalisation, and communication enable temporary uses. Altogether, they are key to the proliferation and durability for temporary uses. Thus, an attempt to understand how temporary uses stabilise is not possible without acknowledging and understanding how the processes of adaptation, professionalisation and communication often prelude processes of stabilisation (Eshuis & Gerrits, 2019). Another way to explore this is to trespass beyond the sequential framing of processes, and to consider the question of whether other forms of ordering develop. Perhaps it is not only that stabilisation hinges upon the how and when adaptation, communication and professionalisation unfurl, but that they altogether generate stabilisation; in other words, the stabilisation of temporary use subsumes or absorbs all of these preceding processes. Indeed, these processes in temporary uses are integral to more intricate and nebulous processes of temporary uses, which the practises might weave into long-term transformation (Andres, 2013; Bragaglia & Rossignolo, 2021; Martin et al., 2019). From this point of departure, this dissertation seeks an explanation for how temporary uses stabilisation also is informed by these processes and to what extent. To this end, the following sections will introduce urban regeneration contexts for temporary uses. This will enable the theoretical elaboration for the processes in and of temporary uses as grafting into processes of regeneration.

2. CONTEXT & CONCEPTUAL FRAMEWORK

Cities define their own unending orientations of change. ***Urban regeneration***[1] and processes thereof are means to define these orientations through systematic, design- and planning-oriented processes intended to impact material, economic and social outcomes (Acierno, 2017; Altrock, 2018). In terms of scale, urban regeneration helps promote transitions[2], which might culminate in "urban transformation […] through […] redesign, reconstruction and often re-allocation of urban land" (Acierno, 2017, p. 7). Similarly, others describe urban regeneration as interventions to reclaim or refurbish vacancy or dereliction—elaborations on previous attempts to detail urban regeneration's broad palette of interventions or practises (Rabbiosi et al., 2020). Many communities and public administrations set hopeful directions for long-term transformations first by setting actionable strategies for change. These typically are characterised by mid-term ranges of temporality, most likely because they entail more feasibility and certainty. Observations also highlight that urban regeneration are policies and programmes for systematic adaptation that increasingly feed off of emerging tendencies towards economisation and what Altrock amongst others claim are "performative Planungsansätze" [performative planning approaches] (2012, p. 20; Altrock & Huning, 2015; Altrock; 2014). In emphasizing how the processes relating to urban regeneration are performed and not just spatially delineated, I perceive Altrock's claim as nudging the boundaries of previously myopic views on urban processes.

Figure 6. 2017 iteration of Park(ing) Day in Rotterdam. The initiators later opened a brunch locale.

Source: Original

In this spirit of thinking, this dissertation considers how other ways of framing urban processes (particularly those of temporary use) in the context of urban regeneration could be alternatively and

[1] Other variants of this term are also common. These include urban renewal and urban revitalisation and might be used interchangeably as some scholars tend to do in their writing (Power et al., 2010).
[2] A more detailed discussion on the relationship between transition and transformation is taken up in article #1 pN.

temporally set. A brief review of literature up to date will demonstrate that such a framing is mostly implicit, despite the fact that some examples of explicit articulation do exist. The latter might describe the temporally "continuous" quality for maintenance or renewal of buildings and open areas that property owners pursue, but they are not elaborate and go only so far to advance that urban regeneration is bracketed with "time-frames," during which resources and measures are provided (Altrock, 2018, p. 2442). In contrast, spatial interests feature explicitly and prominently in debates relating to urban regeneration. Most likely, the justification for this is that the spatial delimitations of regeneration efforts are typically very obvious and tied to visible or tangible area- or land-use plans (Altrock, 2018; Buitelaar & Sorel, 2010). The area of Hemelingen picture below is an example.

Figure 7. Nostalgic graffiti in urban regeneration areas leveraging temporary use in Hemelingen.

In contrast, the pursuit of a temporal framing of urban regeneration, requires firstly that we acknowledge how urban regeneration policies and programmes of various temporal lengths interweave with or leverage shorter degrees and qualities of time when resources for development are limited (Havemann & Schild, 2007; Szaton, 2018). The leveraging of time-delimited initiatives, recognised by qualities of temporariness or temporality, often manifests as informal and experimental practises or "architectural interventions;" this help localise processual opportunities for participation and adaptive reuse (Polyák & Oravecz, 2015, p. 9). Sometimes, the impacts do not affect the functions or activities so much, but result in new roles or responsibilities such as "the appearance of new specialisms: the participation expert, the community worker, the process manager" or new processes of "institutionalised participation" (Van der Cammen et al., 2012, pp. 334–336). In other cases, the impacts are processual, such as the subject of this dissertation, namely processes of temporary use stabilisation. Impacts aside, it is imperative to first

understand the concept of urban regeneration or any other backgrounding transitions, in order to be able to understand how processes of stabilisation to temporary use unfurl.

Figure 8. Empty Lloydhof mall that hosted temporary and entrepreneurial uses.

Figure 9. Street views of Wurst Case, also a temporary use milieu in Bremen.

In relation to programmes deploying the interim activation of vacant or declining areas, these processes often lie indirectly in the jurisdictions of public service delivery such as through temporary use progammes and milieus or the 'Wurst Case' picture above. Particularly in the context of the welfare state, bottom-up driven visions eventually enhance urban regeneration strategies or seek to optimistically redress the vacuums in public administration and service delivery; labels such as "meanwhile," "do-it-yourself," "every day," or "tactical" convey to a limited degree, the efforts of citizens' self-determined, self-organised, and temporary activities (Moore-Cherry, 2017; Rabbiosi et al., 2020; Savini, 2016, p. 1153; Stevens & Dovey, 2018; Wohl, 2017). In the worst case, these activities involve pioneering practises that are not as congruent with the linear public and urban redevelopment agendas and are short-lived. In the best case, they will synchronise and bolster systematic strategies for public and urban regeneration.

While the foundation to understanding the relationships between broader urban regeneration developments and temporary uses interventions is established in urban studies, much of this work has yet to develop a temporally nuanced understanding of processual relationship. This, again, conceptually motivates and contextualises my work in this dissertation: to explore and understand the processual temporalities of temporary use (especially for processes that stabilise) in concert with urban regeneration. Of particular interest are the ways in which the two unfurl through duration, order, sequence or other temporal qualities of policies, programmes or regulatory instruments. Processes through which temporary uses stabilise, in comparison to top-down regeneration initiatives, emerge through undercurrent or ancillary processes. These have been highlighted in earlier sections as adaptation, professionalisation, and communication. But how these in unison compel temporary uses to stabilise is a complex matter. Confronting this complex phenomenon through a temporality lens raises complicated questions: What are the terms of reference to understanding such a matter? Is there a vocabulary to help articulate this? If so, how might the theoretical syntax for this look?

The following sections take the first step in this direction by first reviewing and summarising key literature and debates concerning the relationships between processes of urban regeneration and temporary use. A second section will anchor these debates in the comparative contexts of Germany and the Netherlands. This will lay the ground work upon which I will elucidate perspectives and language to theorise time, temporality as a temporally nuanced way to understanding how temporary uses stabilise.

2.1. URBAN REGENERATION & INCREMENTAL CHANGE

In order to understand the debates concerning relationships between processes of urban regeneration and temporary use, a historical visit to the responses following the global downturns in the 1970s might be helpful. This detour will help us learn or remember how urban regeneration and its associated weaving of approaches were born. According to Häussermann et al. (2008), it was during the crises in the 1970s, that urban regeneration strategies began permeating public policies and developed reputations as responsive and appropriate ways to counteract deep and processual challenges; examples of the latter being, deindustrialisation or urban shrinkage coming out of the oil, steel and financial crises. Almost half a century later, the philosophies of urban regeneration are just as relevant and still pervade the initiatives from communities and public administrations to address the repercussions of urbanisation, suburbanisation or even recovery schemes for natural disasters (Häussermann et al., 2008; Wesener, 2015). The temporal patching of mid- and short-term measures did not just appear as a part of urban regeneration, but emerged out of much more complicated circumstances. The insights into these are presented more clearly in the politically and economically nuanced strains of the urban regeneration discourses. These saw that urban regeneration came out of how public administrations were and still are increasingly subjected to do more with less; in extreme situations, this now translates to enforcing austerity policies with “strict fiscal discipline and government spending cuts” intended to “restore budgetary integrity” (Peck, 2015, p. 2). The circumstances revealed by these discourses underlined that communities and their public administrations have had to create more efficacious means to orchestrate and deliver public services – the diversion of resources to strategic areas of interest being one way, and the temporal ordering of the programmes and interventions being another.

What also cannot be overlooked are the trends experienced by individuals and communities that accompany crisis and public administrative response through urban regeneration. These become silent and yawning remains of the natural and built environment - embodied by empty sites and vacant structures. These also comprehend that the emptiness and stillness are not only results of crises and decline, but the material interface for the mismatch between functionalities and temporalities of bygone periods. Communities must afford to activate or renew spaces and neighbourhoods in a limited fashion, because the previous purposes of these structures and sites, now serve for a large part, increasingly irrelevant temporal rhythms of Tayloristic ordering and Fordist sequencing of production lines (Adam, 2003; Häussermann et al., 2008). As such, urban regeneration and temporary uses are means to compel us to learn, through processes including adaptation or professionalisation, how to reinvent the intents of these spaces as well as the concepts for which they stand. We see this thruogh the transformation of old warehouse structures in Rotterdam below.

Through stabilisation, changes in space, such as those through temporary uses, are hemmed between the settings of previous temporalities with the new temporalities. Temporary uses, in this light, can be (if they are not already) instruments in the threaded calibration for urban change. How this might actually play out is elaborated in the following sections. These also include illustrations drawing on the established experiences in the Netherlands (Buitelaar & Bregman, 2016) and Germany (Altrock et al., 2018; Häussermann et al., 2008).

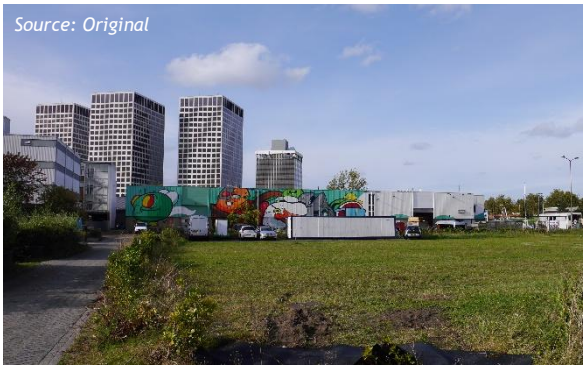


Figure 10. Modern day area around Keilestraat in 2017.

Figure 11. Re-use of industrial sheds for the Keilewerf in 2017.

2.1.1. INSTRUMENTALIZING TEMPORARY USE

Let us recall that temporary uses are flexible, intentionally undefined or short-lived and thus time-delimited uses, which many leverage to activate unused and derelict lands and structures as defined in section 1.0. While temporary uses have developed prominence in the last few decades, their “small-scale ways” have a much longer history, dating back to the 19th century (Talen, 2015, p. 142). As incremental approaches to change, temporary uses are (cost-)effective and experimental means to adaptively re-use space without making the potential and new functions permanent (Eshuis & Gerrits, 2019; Galdini, 2020). This incrementality affords “sequence[s] of integrated steps aimed at improving the economic, social, and physical structures” (Bosák et al., 2019, p. 3). In other words, it introduces new rhythms into the tacit and restful moments of vacant and derelict spaces. At a different register of analysis, some highlight how this translates into taking advantage of market scarcity to catalyse development as well as consumption demand (Stevens, 2020, p. 20). This could also be understood as ad hoc reconfigurations of functionalities that respond to market surplus of real estate when we consider the decreased demand for certain uses, such as is the case

brought to the fore during the pandemic. We can see this with the intensifying debates regarding increasing urban retail vacancy (Talen and Park, 2021) and preferences for e-commerce over malls or other inner-city commercial activities in a range of rural to urban settlements (Krüger, 2020).

In the case that temporary uses effectively make use of the combination of temporal pockets and vacant spaces resulting from market scarcity or surplus, they might catalyse change and subsequently become grafted onto or evolve into enduring processes themselves. In referring to this processual fusion, many are able to retrospectively recognise how temporary uses can be effectively leveraged and temporally framed. Madanipour, for one, reflects on this by describing processes of temporary use as "an instrument of transformation with long-term impact" (2017, p. 1). This reflection also inspires others to re-frame temporary uses as "a specific construct of temporariness" (Ferreri, 2020, p. 41).

In order to develop our articulation of how temporary uses are embedded, implicated or feed into long term processes of city-making (Bragaglia & Rossignolo, 2021), we need a different set of vocabulary and syntax to conceptualise temporary use processes. This vocabulary and syntax must also articulate this in the context of broader processes of change. This shifts the focus from temporary use as a "notion of critical urban practice" (Tonkiss, 2013, p. 323) to a "temporal designation of urban processes" (Galdini, 2020, p. 1), including those of temporary use stabilisation.

Arguments to re-frame processes of temporary use are not limited to the indirect and implied reference to time. They are also present through arguments and explications of temporary uses from a sustainability perspective. In relation to sustainability debates, temporary uses, and particularly its physical and material impacts are often promoted through an ecological lens. Claims supporting this perspective describe how temporary and adaptive uses help renaturise and rehabilitate contaminated sites (Rall & Haase, 2011). While temporality is not a part of this explicitly ecological perspective, new sustainability arguments emphasise the circular models and life-cycles of sites and structures that might serve temporary or adaptive uses. This also creates room for a temporal disposition in understanding temporary use. For instance, temporary uses that integrate practises through the renaturation of landscapes do not only engage communities, but could require the deliberation and description of time in terms of the intervals required for introducing new ecosystems and landscaping. This has explicit linkages to the life-cycle and circular models of production in deindustrialising areas, too (Partnership on Circular Economy and Sustainably Land Use, 2019; Pinch & Adams, 2013). These entrench rationalisation to further instrumentalise temporary uses, while inherently emphasising temporal qualities—a means to honing thinking regarding temporality, too.

Other debates are taken up from temporary users' perspectives. These discourses advance how temporary uses commonly try to synergise their efforts with parallel aims such as enhancing values for heritage (Galdini, 2020), culture (Bosák et al., 2019), or social inclusion (Bragaglia & Caruso, 2020). In certain cases, these objectives are also controversially absorbed by cultural and political aims to redefine cities through branding and place-making strategies (Acierno, 2017; Colomb, 2012; Martin et al., 2019; O'Callaghan et al., 2018). To some extent, this comes full circle as debates on how temporary use processes foment new cycles of financialisation and valuation (O'Callaghan et al., 2018) and bring together the critical, but social, political or economic tones of other or earlier discourses, too. Ilustrations such as those of an old

shoppingcenter above are evidence of how temporary uses enable communities to address material vacancy and decline of brownfields and post-industrial sites (Groth & Corijn, 2005; Lokman, 2017), but are contingent on the readiness of self-help and citizen-led efforts (Campo, 2014; Stevens & Dovey, 2018).

Indeed, the self-reliant unfolding of temporary uses makes it an accessible and popular subject of critique. This is buttressed by concerns for dominating neoliberal interests that privilege a selection of temporary use stakeholders[3]. Some state that temporary uses understood from this tack sacrifice creative and experimental activation for economic returns—usually, at the risk of temporary users (Moore-Cherry, 2017; Vivant, 2020). While it is not clear how even the conceptions of risk for temporary use stakeholders are (Martin et al., 2019), there are attempts to understand how temporary users relate to risk[4] as processes of socialisation or integration into professional and artistic identities (Pruijt, 2003; Vivant, 2020). Additionally, debates have made room for consideration of "cultural governmentality" in urban planning and development; this is reliant on the willingness for creative and entrepreneurial individuals to subject themselves to precarious processes of alternative participation that serve as back-door opportunities for the professionalisation or the management of temporally delimited but innovative spaces (Krivý, 2013; Vivant, 2020, p. 10). If these concerns do not increase the relevance of temporary use in urban regeneration contexts, at minimum they maintain its weight and force in a "temporary turn" for urban studies (Chang, 2021b).

2.2. EUROPEAN CONTEXT OF URBAN REGENERATION

Figure 12. Previously a temporary use, Wedderbruuk established and expanded to two locations in 2018.

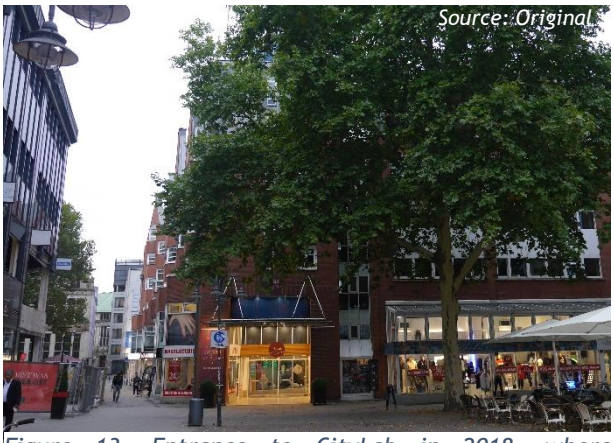


Figure 13. Entrance to CityLab in 2018, where Wedderbruuk started as a temporary use.

Within the European context for urban regeneration, debates on the concept of leveraging temporary use for urban transformation resonate strongest (Stevens & Dovey, 2018). This could be the result of a certain degree of similarity that is contained with the "European model of society," which has shaped policies within European countries since the mid-1990s (Stead & Nadin, 2009, p. 284). Another impetus to address temporary use processes is evident through its promotion in the political realm. Policy mobility has and likely still channels temporary use and urban regeneration as instruments and strategies with global traction (Andres & Zhang, 2020). While this is also a fascinating phenomenon, it is not within the scope of this dissertation to address this expansion and so the focus is on European perspectives and development. This is also more

[3] A detailed examination of this is presented in article #2 UP, which makes uses of socio-semiotics and bibliometric analysis to find that neoliberal undertones are often repeated within scholarly discourses.
[4] This is problematized in articles #3 URP and #4 Cities as factors that affect temporary use stabilisation.

congruent as the dissertation case study contexts of temporary use stabilisation are in the German and Dutch contexts.

With respect to the historical timeline of developments inciting urban regeneration and temporary uses, European regional policies have reflected the social and spatial demands for change by increasing priority for urban regeneration through its integration into various programmes and instruments since the launch of *the European Regional Development Fund* (ERDF) in 1989 (de Gregorio Hurtado, 2017b). As specific cohesion and integration policy resources (Acierno, 2017; de Gregorio Hurtado, 2017a), the *URBAN Pilot*, *URBAN* and *URBACT* programmes, *European Social Fund* (ESF) represent iterations of financial and programmatic support enabling networks of "capacity building for policy delivery, policy design, policy implementation, and knowledge building/sharing" such as that facilitated through URBACT (URBACT, 2021). More recently, experimental and thematic projects coming out of the cohesion and integration resources are subjected to coordination and alignment through the *EU Urban Agenda* launched in 2016 (European Commission, 2021; Urban Innovative Actions, 2021a). These embodied broad objectives, which encourage partnerships to contribute to bottom-up solutions, such as temporary uses activities; in particular, the *URBACT* programmes[5] and the *Urban Innovative Actions* have resulted in a range of initiatives in numerous European countries (UIA) (URBACT, 2021; Urban Innovative Actions, 2021a).

These higher-level policy initiatives permitted the establishment of structures and resources that have benefited countries within the European continent. The Urban Innovative Actions programme alone has allocated a total budget of EUR 372 million for the funding period of 2014 through 2020 to "test new and unproven solutions to address urban challenges," by convening practitioners and municipalities and co-financing 80% of projects' activities (Urban Innovative Actions, 2021b). Already within its third iteration, URBACT III has allocated a budget of EUR 96,3 million and has benefited European cities (URBACT, 2021); of these, the Germany city of Bremen constitutes one of the case study contexts for this dissertation.

Before progressing to the conceptual framing of temporalities—a more subtle reflection of the entangled processes of temporary use that can stabilise—the next section will introduce the specific contexts of urban regeneration in Germany and the Netherlands. Both these countries have experimental policies concerning temporally relevant interventions and demonstrate similar typologies of social models, planning systems (Stead & Nadin, 2009), as well as a "continuous presence of urban issues on national agendas" (Zimmermann & Fedeli, 2021, p. 328). This lends the two contexts as appropriately comparable for the case studies featured in this dissertation.

2.2.1. CASE STUDY CONTEXTS: GERMANY & THE NETHERLANDS

In the German context of the work presented here, the activities characterising temporariness or temporality are commonly embodied in *Zwischennutzung* or 'interim use' as articulated by the German Federal Building Code (Bornmann et al., 2008; Bundisinstitute für Bau-, Stadt- und Raumforschung [BBSR], 2016).

[5] TUTUR, Refill, and Re-growCity are all networks that have come out of URBACT programmes (URBACT, 2018; 2021).

Comparatively, the Dutch context often facilitates "flexibility" [6] in land use by means of exemptions to a land use plan (*binnenplanse vrijstelling*) or the legislation (*buitenplanse vrijstelling*) enabled through the Spatial Planning Act (Buitelaar & Sorel, 2010, pp. 985–986). The policy language of legislation in both countries introduce or enable the interweaving of fleeting activities into prolonged temporalities of urban regeneration programmes and policies. To some extent, the preceding sections introduce urban regeneration as constituted by various processes of various timelines. Moreover, these come together to steer alternative ways towards both transformation, sustainability, and of particular interest to the work here—stabilisation. Recall here, that the former supports strategic reorientations of political, economic and social consequence as elaborated in section 2.0. This is prioritised by leveraging transitional experiments that are limited in time—also recognised as temporary uses. Sustainability emerges through ecological objectives as discussed in section 2.1.1. Examples of these include remediation of land, reduction of land consumption, facilitation of circular production and economies, which temporary uses serve through its experimental and adaptive qualities. Matters concerning stabilisation are much more convoluted and context-specific.

[6] As a policy experiment, Oosterwold in Almere (NL) also presents compelling precedence for how temporal flexibility is re-framed through local plans. Cozzolino et al. analyse this case in terms of framework-rules that encourage emergent order (2017). Here, Cozzolino et al. claim that temporal ordering is important and not articulated "instrumentally to obtain specific (future) spatial configurations, but rather to facilitate social-spatial interaction" (2017, p. 51).

In pursuing a closer investigation of how temporary uses stabilise, the countries of Germany and the Netherlands are comparatively compelling contexts to consider processes of temporalities and their influencing mechanisms. Urban development in Germany, like in the Netherlands, has been continuously undergoing transitions in policies since the late 1960s (Häussermann et al., 2008; Musterd & Ostendorf, 2008) and both are similar in their "comprehensive integrated" approaches to spatial planning through systematic and hierarchical layering and complementing of instruments and policies (Buitelaar & Bregman, 2016, p. 1285). Their parallels presented through the context of urban regeneration evolved from concerns with post-war rebuilding to concerns with economic and social well-being from the 1970s until contemporary policies as outlined in the figure below:

Source: Altrock (2018), Häussermann et al. (2008), and Musterd and Ostendorf (2008); Original adaptation

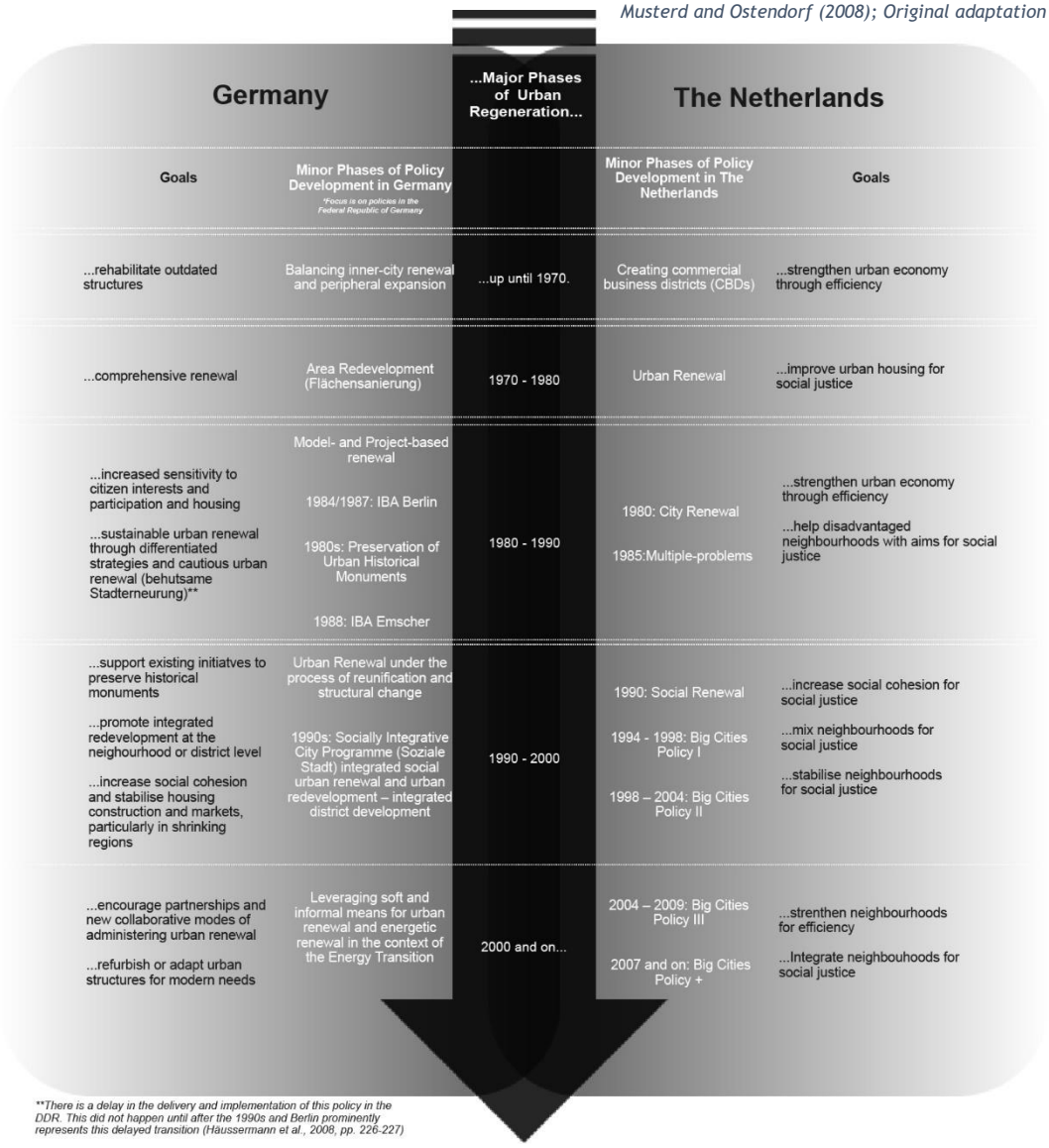


Figure 14. Comparison of urban regeneration policies in Germany and the Netherlands.

To zoom in on the comparative contexts, the following sections will detail the planning and policy histories and frameworks that direct courses of urban regeneration. These will help to sensibly contextualise temporary use processes, and in particular the process of stabilisation.

2.2.2. COMPARING CASE STUDY CONTEXTS

In the Dutch context, which many have connoted as a paradise for planning (Buitelaar & Bregman, 2016; Faludi & Van der Valk, 1994), the development for urban regeneration of the material and social environments stake out the move away from planning for urban regeneration as "simply a matter of internal management" prior to the 1970s towards practises of "participative bottom-up planning processes"; these are characterised through "sociacratic experiments," "breaks from the past" in terms of process and content, as well as institutionalised participation (Van der Cammen et al., 2012, pp. 334–336). This has been channelled through a philosophy of decentralisation or fragmentation through a three-tier system in which "the government's main role is to ensure that the regional and local authorities can develop and implement their own plans, being highly responsible for their every action" (Alpkokin, 2012, pp. 537–538; Denters, 2021) and differs from earlier regeneration efforts following WWII.

Figure 15. Temporary use of a cemetery plant nursery turned into the café 'Radieschen' in Bremen.

Figure 16. Temporary use of an office building in Rotterdam that turned into 'het Scheiblock'.

Initial urban regeneration initiatives were facilitated through large-scale and planned redevelopment of the urban fabric by repairing war damage or maintaining the economic focus of inner-city areas to enable the diversification of the urban economy (Musterd & Ostendorf, 2008, pp. 84–85). Recent efforts have progressed towards integrative objectives through area-based approaches that serve as flexible and place-specific strategies, which better account for diversity in stakeholders and interests (Boonstra & Lofvers, 2017; Eshuis & Gerrits, 2019; Musterd & Ostendorf, 2008). The 'Social Innovation' (Sociale Vernieuwing) initiative developed in Rotterdam is one model to address social challenges such as long-term unemployment and dependency on social benefits (Denters, 2021, p. 110). This shift is also traceable through planning law and eventual reforms. Since the 1960s, instruments for spatial change have been identified through national framework legislation but implemented through other levels of government (Dühr, 2009, p. 117). Revisions that were ratified for the Spatial Planning Act (*Wet ruimtelijke ordening*) in 2008 increased flexibility, reduced bureaucracy and enhanced municipal jurisdictions to prepare and enact land use plans (*bestimmingsplan*) (Van der Cammen et al., 2012). This did not mean that higher levels of government were removed from authority, since they could exercise influence through strategy or structural visions (*structuurvisie*) (Dembski, 2020; Van der Valk, 2002). These have maintained federal and regional powers to

designate development areas “which are protected due to environmental concerns” (Gerrits et al., 2012, p. 3) and co-exist with higher level authority to enact insertion plans (*inpassingsplanen*); these could be understood as superimposing instruments with legal status that is comparable to land use plans (Van der Cammen et al., 2012, pp. 33–34). Even though, another reform is underway to bring together all 26 regulations relevant to the physical environment into a single act entitled the Environment and Planning Act (Omgevingswet) as a way to modernise, digitise and improve bureaucratic efficiency (Dembski, 2020; Rijksoverheid [Goverment of the Netherlands], 2017), these efforts still intend to maintain if not increase flexibility for permitting and regulating purposes (Ministerie van Infrastructuur en Milieu [Ministry of Infrastructure and Environment], 2014).

In comparison, urban regeneration efforts through the federalist system in Germany expresses different governance dynamics with the locus of powers shared between federal, state, and municipal public administrations (European Commission, 2000, p. 39); certain city-states, such as Bremen, have combined municipal and state administrative rights (Power et al., 2010). However, a decentralised orientation has also emerged through project- and model-oriented regeneration (Pinch & Adams, 2013) and distribution of joint funding schemes; these are conducted through the jurisdiction of regional or state-level public administrations (Heinelt & Zimmermann, 2021). In the shadow of WWII, the perturbation of various crises affecting the industrial economy in Germany compelled structural change as well as changes to public administrations systems, regulations and polices for financial transfers to re-orient “urban growth and development policies in such a way that inner urban areas became the focus of a more integrative financial and physical investment. Urban renewal, thus became the particular urban policy” (Häussermann et al., 2008, pp. 89–91).

The spin-off effects of these efforts were felt in property markets and incited citizen protests—the first larger example of this occurred in Bremen as a result of pressures on the residential market (Häussermann et al., 2008). Part of the changes to policy and programme delivery included a shift towards project- and event-based formats to catalysed urban regeneration; the International Building Exhibition (IBA or *Internationale Bauausstellung*) became a notable innovation in German urban regeneration in this regard (Häussermann et al., 2008; Pinch & Adams, 2013). This facilitated punctual remediation of de-industrialised sites through the development of green infrastructures such as “community woodlands” in Eastern Germany (Atkinson et al., 2014, pp. 586–587; Rall & Haase, 2011) and “industrial forests” in the Ruhr Valley (Dettmar, 2005, pp. 264–266) to connect and improve open and natural spatial amenities (Mathey & Rink, 2015). As experimental and unclear projects for transitioning and shrinking regions, these initiatives made use of vacant sites and were often encompassed under larger programmes such as the International Building Exhibition Emscher Park, which aimed to renaturise and redesign the environmental landscape while other programmes supported the initiation of technology-driven sectors through clustered redevelopments (Butzin, 2005; Dettmar, 2005). In addition to the delivery of spatially delineated policies through the IBA programmes, social programmes such as the "Socially Integrative City" (*Soziale Stadt*) articulated through the Federal Building Code (*Baugesetzbuch*) also helped “[usher] a political sense of renewal that [attempted] to support and encourage the engagement of citizens… [by reducing] departmental and administrative barriers as well as those between public and private actors” (Häussermann et al., 2008, pp. 253–254). Heinelt and Zimmermann (2021) also detail, that in order to benefit from the social programme, municipalities were required to create and adopt integrated concept for urban development (*Integriertes Stadtentwicklungskonzept*).

Figure 17. Poster from the Güterbahnhof Artists' House in 2019.

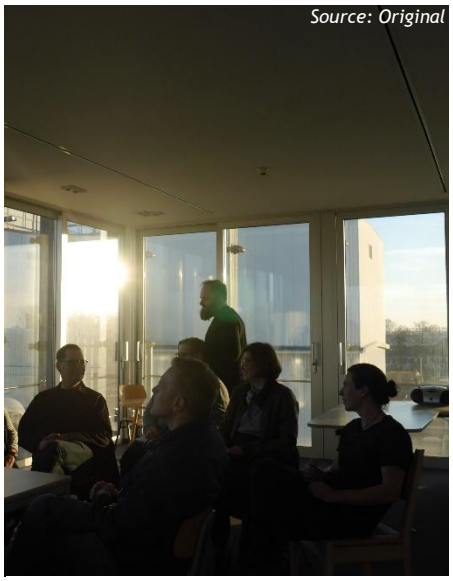


Figure 18. Wurst Case initiative's temporary user steering meeting in 2019.

Figure 19. Presentations on temporary uses in Bremen in 2018.

Indeed, various regulations and instruments from land use planning (*Bauplanungsrecht*) as well as urban development (*Städtebaurecht*), such as the Federal Building Code, the Urban Development Promotion Act (*Städtebauförderungsgesetz*) opened the legislative way for material renovations (*Substanzsanierung*) and adaptive reuses (*Funktionssanierung*) (Häussermann et al., 2008; Henckel & Pahl-Weber, 2008). These contributed to the urban regeneration (*Stadterneuerung*) and urban redevelopment (*Stadtumbau*) measures to address urban decline (*Städtebauliche Mißstände*) (Häussermann et al., 2008; Henckel & Pahl-Weber, 2008). They also mark the various political and legislative braids in the thickly woven process of urban regeneration and contextual patch for finer processes of temporary use. The following sections will introduce vocabulary and concepts to more tightly relate the levels of processes, before problematising time and temporality as well as conclusion for the chapter.

2.3. PROCESSES OF TEMPORARY USE

As mentioned in preceding sections, this dissertation is interested in the processes of stabilisation relating to temporary use. This understands that various sub-processes in temporary uses contribute to the processes of temporary uses. The former is introduced through processes of adaptation, professionalisation and communication. Detailed explications were introduced earlier in section 1.3. I have also elucidated how processes of urban regeneration contextualise the weaving of multiple processes, including those in and of temporary uses. To better articulate and explicate processes of temporary use, I draw on the concept of ***trajectories***[7]. This helps spatially delineate processes of temporary use by understanding them as:

> *"…the path followed by a 'place' concerned with temporary urbanisms, through various forces and dynamics in place (actors, planning policies, development strategies, etc.). This path may be linear as it runs day after day, but it is fundamentally iterative, adaptable and dependent upon different forms of activation. The notion of trajectory is also attuned to the (possible) changes in everyday rhythms, socioeconomic contexts and material circumstances of anyplace –in other words, that which is imagined, planned and manifested at a site experiencing a temporary intervention, where, and how (not just when). Trajectory also implies a direction of travel for the temporary project which may be planned, envisioned, or not, which as an outcome may be how to make the project permanent."*
>
> (Andres & Kraftl, 2021, p. 6)

I make use of this concept to observe temporary use stabilisation as a temporally woven and rhythmically bundled phenomenon that manifests in social, conceptual, and material realms[8]. This term of reference moors my reframing of temporary use stabilisation through a temporality lens and also responds to concerns advanced by scholars engaged in debates on temporary urbanism in the fields of urban geography, urban planning, and urban studies more broadly. This is also reflected in my introduction to the contexts of urban regeneration in Germany and the Netherlands, in which I have highlighted the implicit understandings and articulations of how temporalities of different ranges characterise broad and enduring transformation, as well as strategic regeneration and brief temporary interventions. These also reflect what others recognise as inadequacies in how current theories frame, understand, and articulate the complex dimensions of practice and policy informing understanding of processes reflecting temporariness and temporality (Andres & Kraftl, 2021; Bishop & Williams, 2012a; Stevens & Dovey, 2018).

As an articulatory stepping stone, I make use of the term 'trajectory' to outline processes of temporary use that are both spatially fixed and spatially detached[9]. Viewed through a temporality lens, these also express different rhythmic temporalities which the following sections will introduce. However, I will first

[7] Refer to article #3 URP for a detailed description of how "trajectories" can help spatially delineate the processes of stabilisation.
[8] This draws on the explication of processes in temporary use including adaptation, professionalisation, and communication.
[9] More details for these articulations are available in article #3 URP regarding trajectories of spatially detached stabilisation and article #3 Cities regarding trajectories of spatial (and fixed) stabilisation.

elucidate the theorisations of time and temporalities by drawing on research in the fields of sociology, geography, anthropology, economics, and psychology. This will provide us a fuller set of vocabulary and syntax to comprehend how patterns, understood through a temporality lens, emerge.

In developing thinking on processes of temporary use, such as stabilisation, I turn to the sociologically grounded insights from Adam to reconceptualise processes of temporal relations. These define temporal relations as those of "dis/continuity" that entangle and mutually implicate the breaks and overlaps of multiple, other, or sub-processes (Adam, 2003). To illustrate, this dissertation sees sub-processes of adaptation, professionalisation, and communication with their own distinct temporalities. These, as a layering or web of temporalities, may fuel processes of temporary use stabilisation along their own trajectories of dis/continuities. In parallel, the temporal relationship embodied in processes of temporary use stabilisation relate to the dis/continuous process of urban regeneration and can at a higher level also weave or hook into new and subsuming temporal relations. What this line of reasoning underlines, is a processual consideration of temporality that might be characterised as entangled. Ferreri, in the context of temporary urbanism, argues for a conceptualisation that should be understood as "entangled" (2020, pp. 39–40). Entanglement in this sense involves not just actors, urban and cultural practises, but also the various disciplines and processes that emerge spatially or institutionally to encourage broader imaginaries and sense-making of cities. This tack in theorising temporary uses, in the broadest sense possible, secedes from prevailing and binary assessments of temporary use and its concepts. Instead, the intentions put forth in this dissertation seeks alternative language beyond the established vocabulary used to characterise temporary uses. To start, most qualifications for the temporality of temporary uses are defined by their "durations" [10] (Andres & Kraftl, 2021, pp. 3–4) or are content in recognising differences between "normal" and "temporary" uses (Kohoutek & Kamleithner, 2013, p. 87; cf. Bornmann et al., 2008;). Beyond the measured value of the intervals during which we perceive uses as present or absent, the existing language does little to express the textures and weight of how time is made tangible, even if momentarily, through temporary uses. And for this reason, it is essential that we consider how new theoretical framings might extend and enrich existing temporal language. If conceptual appetites are not yet whet for the explications of intricate relationships depicted through processes in, of, or related to temporary uses, then perhaps inspiration from other disciplines' considerations might inspire a glimpse of what this might be like.

2.3.1. ISSUES OF TIME

In the context of studies on urban change, our comprehension of time, in comparison to space, is less concretely articulated and so, it is no wonder how urban scholars weakly reflect complex processes through which institutions are reproduced or newly produced (Madanipour, 2017). Madanipour contemplates this in relation to temporal processes of (re)production and highlights how temporary events lay bare the tense but shallow dichotomies of "change and movement" versus "fixity and permanence," of which the latter is often promoted (2017, p. 34). What temporary uses magnify are previously unseen paradoxes in time and practice; these emerge along a spectrum of temporalities and temporariness for which our pronunciations and

[10] This could hinge upon methodological constrictions in urban studies as most research introduces qualitative and in-depth case studies of temporary uses that are useful in foregrounding exceptional contexts with reduced barriers and policy regulation for temporary use, but rely overwhelmingly on temporality framed through 'durations' as opposed to concepts such as 'trajectory'. Detailed discussions on this are available in articles #3 URP and #4 Cities.

articulations are still clumsy (Andres & Kraftl, 2021). Recent debates on temporary urbanisms are changing this and prompting scholars to admit this gap in research (Madanipour, 2017; Stevens & Dovey, 2018). Andres and Kraftl, for instance, explain in detail how "there is a lack of a systematic conceptual language that can embrace the diversity of temporary uses [that]… could help urban scholars better understand and unwrap complex and multi-temporal, built environments" (2021, p. 2). Part of this lies in the undiscerningly conceptual and methodological bias for "duration," which most often characterises time or temporality in studies on temporary uses (Andres & Kraftl, 2021, p. 3). This is no wonder as duration is a prevailing and convenient characterisation for indicating the start and the stop of changes, but "not able to capture the nonlinearity of time and space in which our current interpretation of events are influences by past experiences and future expectations" (Dawson, 2013, p. 249). It references clearly regular or fixed temporality that "prevails in modern life" (Zerubavel, 1985, pp. 5–6). It might be replaced with similar terms, such as 'interval,' 'period,' or find exotic translations such as the German term "Zeitabschnitte" [period] in the context of regional, good practice guides (Bornmann et al., 2008, p. 16). Even so, what is still missing is a cultivated vernacular that better appreciates time.

Progressing beyond narrow interpretations of time requires that we step through the notion of *trajectories* to seek understanding of times and temporalities existing beyond the confines of *duration*. As introduced earlier, trajectories might help ground the manners and vectors through processes temporary use unfurl. The following sections dig deeper into this account by first elucidating the historically rooted limitations that have set our sociologically and historically moulded considerations of time. From this it is possible to more expressively argue or explicate processes in, or of temporary uses and urban regeneration. I will do this by making use of an alternative and rhythmanalytical lens of temporality in urban development and practises (section 2.3.2). Rhythmanalysis will help focus and illuminate how temporary uses stabilise by becoming entrained as temporalities, in temporalities and by other temporalities.

While time is integral to practises and processes of urban change, it is often only superficially addressed. My claims for this, are not singular if we turn to Graham and Healey to find critiques in urban planning studies. They also observe how time "still tends to be either neglected completely in planning practice and theory, or is assumed—echoing classical Newtonian physics—to be a single, universal, container for events which flow in a linear, one-directional flow" (Graham & Healey, 1999, p. 627). More recently and in the British context, Windemer notes that "little research has assessed the temporal framing of planning regulation, considering what is controlled, over what time period, and what might happen when time runs out" (2019a, p. 1). Graham and Healey draw on Thrift to explain how this conceptual myopia is a consequence of overwhelming attention to space, through which "conceptions of space remain divorced from conceptions of time, even though it really only makes sense to consider the multiple, overarching and interlacing webs of space-time in the city" (1999, p. 627). While I agree with this, I also draw on theories and concepts found in complexity thinking and philosophies (see Excursus) to reason that much of this oversight or weak conceptualisation is girded by the excessively linear thinking that has framed our conceptualisations of time. The nature of time and temporalities, instead should be considered open and interacting.

EXCURSUS: A COMPLEXITY UNDERSTANDING OF TEMPORARY USE

In setting up arguments and a new set of vocabulary to reconceptualise the temporality, I implicitly draw on complexity theories to form the syntax of this framework. Complexity theories interpret the urban environment as systems that are open and emergent, and assumed to progress in a non-linear way (Rauws, 2014, p. 128). They also recognise the nested and networked nature of systems (Johnson, 2012) that result from openness and recursive interaction, which in turn facilitate emergent, unpredictable and non-linear patterns (de Roo, 2020; Portugali, 2012a). Complexity thinking, according to Roo et al. and others, helps make sense of the outward fuzziness and messiness of "wicked problems" with which planning tries to contain (2020; 2007). These are influenced by the uncertainty embodied in future states, amplified by non-linear systems, as well as the lack of predictability from the effects of our interventions (Marshall, 2012; Turner & Baker, 2019). In acknowledging systems as non-linear and unpredictable, complexity theory also admits to viewing systems as "process[es] that [are] self-organizing" as well as challenging to predict according to linear causal laws and impossible to "be analysed or managed using traditional techniques" (Turner & Baker, 2019, p. 12).

Beginning with non-linearity, we can find implied characterisations in observations of temporary uses and their trajectories as "fundamentally iterative, adaptable and dependent upon different forms of activation […which] also implies a direction of travel for the temporary project which may be planned, envisioned, or not, which as an outcome may be how to make the project permanent" (Andres & Kraftl, 2021, p. 6). This echoes more explicit appreciations of non-linearity in comparable processes such as those of collaboration (Innes & Booher, 2018) and reflect what we can interpret as (socially and temporally) irreversible and irreducible processes through which new patterns might emerge (Turner & Baker, 2019). A minor caveat here being the possibly reversible material or physical structures as they may be removed from a site. However, this is not always discernibly possible for the social and temporal. Others consider how temporary uses might be interpreted as complex adaptive systems (CAS) or generate patterns that interact as CAS (Boonstra & Rauws, 2021; Wohl, 2017). These are sources of non-linear and irreducible patterns (Boonstra & Rauws, 2021; Turner & Baker, 2019).

From an inward perspective, complexity thinking helps to understand planning-relevant processes as its own practice and a weaving of other diverse processes as well. Portugali, as an example, makes use of complexity theories to differentiate between qualities of planning that are in some cases top-down or "global" versus bottom-up or "local"; the former demonstrates mechanistic and engineered approaches while the latter indicate self-organised approaches (2012b, p. 230). He more importantly emphasises that neither one approach is exclusively effective, rather both are needed in processes of planning that control or engage (Portugali, 2012b). This strain of thinking has been applied to temporary uses, too. Wohl does this by identifying "urban tactics" to explain how temporary uses are "enacted" when planners engage with the physical environment through temporal enactments to provoke change (2017, pp. 15–17). Comparable research interprets these enactments as "spontaneous" and "endogenous" and catalysed when broader and encompassing systems suffer a "symmetry-break" (Boonstra, 2020, p. 220). The two claims both attempt to frame temporary uses as complex adaptive systems and acknowledge the environmental systems within which temporary uses might be nested. These for instance refer to crises induced responses for urban regeneration that manifest as public participation and self-organisation (Boonstra & Boelens, 2011; Van Meerkerk et al., 2013). What these responses also characterise are decentral "patterns and unforeseen initiatives," "[processes] of autonomous development and the spontaneous emergence of order out of chaos" (Boonstra & Boelens, 2011, p. 108) that are made visible through temporary uses that help cities evolve (Silva, 2016). Finally, these are valuable as parts of urban experimentation and polities (Savini, 2016, 2019) in the context of limited public support and resources (de Bruijn & Gerrits, 2018).

In social theoretical terms, complexity thinking is also helpful for illuminating the linkages between structure and agency. Here I turn to Byrne and Callaghan (2014) who discuss how they are constituted through relational and reproductive interactions that are comparable to Bourdieu's concept of (collective action through fields or social spaces) and Archer's notion of morphogenesis (also known as system change through interaction). These interactions are subject to uncertainties that are internal (of the temporary uses themselves), external (of their experimental environments) and temporal (of future states); they also influence how temporary uses could "die off" or become durable and even replicate depending on the "environment's suitability for longer-term interventions" (Wohl, 2017, p. 15).

The concepts here could help delineate patterns in temporalities and their trajectories. To illustrate, temporalities in their diverse profiles and rhythms through processes of adaptation, professionalisation, and communication can be buttressed by processes of urban regeneration to create the scaffolding through which temporary uses stabilise. What is additionally important to emphasise here, is that it is not just the social and material systems that are engaged in this process, but that temporal systems are entangled as well. Temporal systems in this context could be seen to be anchored by time-reckoning systems embedded into and implicating social and material systems (Bergmann, 1992). An illustration of this in relation to temporary uses and urban regeneration are the (planning) policies and instruments that dictate or conduct their temporalities. By articulating specific temporal conditions or parameters during which these processes might unfurl, they impose upon or unfetter other patterned temporalities as well.

And so, resulting non-linear interactions are not limited to social and material processes of temporary use, but engage in systems of time as well. These produce patterns distinguished by "loops and recursivity, and fractures and folds…cycles and circuits of memory and reality" (Crang, 2003, p. 205; cf. Adam, 1990; Byrne & Callaghan, 2014); time and temporality are thus both system and trajectory. Temporal systems inflict "enslavement" or "the stable ordering of local dynamics by a few ordering parameters that arise from firmly established patterns" (Boonstra & Rauws, 2021, p. 6), to manifest in processual trajectories. It is also temporal systems and trajectories that help make visible the "successive generations of spatial iterations (each learning from the last)" or the "multitude of parallel spatial iterations" (Wohl, 2017, pp. 12–13).

The disassociation of space and time or the linear framings of time are not the only obstructions with positivist flair in how we understand time. An extension of positivist thinking in planning further ingrains how we similarly treat time as we do space—parcelled and ordered (Davoudi, 2012). In response to this, Davoudi advances new approaches through interpretive planning that "acknowledges the existence of multiple times ranging from the rhythm of everyday life to the dynamics of glacial changes" and more importantly underscores "time […] as cyclical, with past, present and future being interlinked" (Davoudi, 2012, p. 435). This reflexivity is also brought to bear on policy and practice as well. Van Schaick and Klaasen, in particular, unpack temporality embedded within the layered approach to planning in the Netherlands (2011). They posit that time-oriented planning and design reflect temporal grains that are different in size and dynamic than the lived and natural temporalities, which they are meant to constrain (Van Schaick & Klaasen, 2011). In reference to regulatory policies and instruments in Dutch planning, Van Schaick and Klaasen further claim that gaps in linking time and function are not effectively bridged or, more precisely, "enriched with a use layer—not even those cases where a cultural layer was added" (2011, p. 1793). They go so far to also call for "a profound discussion on the time concept and further research on time-oriented planning and design" (Van Schaick & Klaasen, 2011, p. 1793), emphasising a weakly developed understanding of time as an issue in urban studies more generally.

2.3.2. THEORIZING TEMPORALITY

The access to different theorizing on time and temporality is helpful in revealing the sharpness in thinking which urban (planning) studies lacks currently. Other disciplines such as sociology, geography, anthropology, economics, psychology, and organisational studies, are already underway with critical analyses of time and temporality (Abram, 2014; Adam, 2003; Andres & Kraftl, 2021; Massey, 2005; May & Thrift, 2003; Preda & Matei, 2020; Whillans, 2020). These uncover general and practice-specific partialities for space that unevenly influence our knowledge of time. With specific reference to planning, Abram writes:

> *"While the normative academic literature of planning theory acknowledges that planning is a process that implies progress through time, the concept of conflicting temporalities is generally underemphasised in favour of questions of spatial justice. Yet games of temporality are constantly being played. New varieties of future horizon have emerged as well as disappeared, and models of the progression from one to another have been postulated, discarded, and adopted. Political beliefs in participative planning have survived various attempts to create discursive forums, and future-visioning and scenario techniques have come and gone. A brief survey of planning horizons also suggests a range of temporalities in play that are fleetingly concretised into planning documents, documents which give the appearance of solidity and endurance, yet are constantly in the process of revision and reinvention."*
>
> (Abram, 2014, p. 132)

Abram is not alone in her critique. Observing the impacts from political and economic processes, May and Thrift highlight a general increase in awareness for time across disciplines and admit the scholarly concern owed towards the "examination of the nature of time itself" (May & Thrift, 2003, p. 2). An illustrative example might be that of politicians whose rhetoric emphasise accelerating permitting processes. Their intents and words often are spoken without heeding the intervals, rhythms, and cycles of approvals factually necessary in such processes. Indeed, there is "need to fundamentally shift from conceptualising time and space as distinct and instead view them as interwoven" (Mc Ardle, 2020, pp. 29–30). This also is true for different instances or processes engaging time in various contexts, or subjecting time to various pressures. In Adam's words, these are the "mutual implication[s] of time, timing, temporality and tempo"; these emanate from natural rhythms and social processes that demonstrate temporally how "complexity reigns supreme" (1995, pp. 23–24). Returning to processes of temporary uses, we could conceive stabilisation as rhythmic patterns of "a multiplicity of temporalities, some long run, some short term, some frequent, some rare, some collective, some personal, some large-scale, some hardly" (Crang, 2003, pp. 189–190). All patterned temporalities play a part in the intermingling of processes in temporary uses (adaptation, professionalisation, and communication) with those external to temporary uses (urban regeneration) to shape processes of temporary use (stabilisation).

We can also turn to other historical work of disciplines to better understand why time is often presuppositionally approached (Elchardus, 1988). Bergmann, amongst others, commonly highlight Durkheim's studies on religious influences as the earliest work to thoughtfully consider the nature of time (1992; Cheng, 2017; Karakayali, 2015; Zerubavel, 1985). The results from this work spotlight technologies and behaviours that gave rise to understandings of time that are social and institutionalised or made intelligible through collective processes and interactions (Bergmann, 1992; Madanipour, 2017). More concretely, Durkheim's insights help us to comprehend how the clock and the calendar anchor a "time grid" in Western societies' temporal understanding has sharpened (Adam, 1995, p. 20). Clock and calendar underpin not only daily activities but are also reproduced and amplified through the plans and permits for a range of micro-level operations such as temporary uses that extend to higher-level processes such as urban regeneration. Keep in mind here, that the very articulation of seconds, minutes, hours, days, months, and years permitted through such formal policies and instruments are all premised on the logic and systematic of these specific technologies of time. Even the most basic signature on a contract is anchored to a specific date imposed by the system of clocks and calendars. The reproduction of this is endless, if we consider how project

management, campaign and development cycles, work patterns, even meal times all rely on the systematics stemming from the calendar.

These technologies and conventions have been and continue to vital for the structuring or interactions and processes in the contemporary world; they also carry our capacities to understand temporal flows through less precise patterns of difference (e.g. day versus night, summer versus winter) (Adam, 2006), or abilities to track, anticipate and influence how other social processes engage with, occupy, or "reckon" time (Adam, 1995, p. 26). In other words, "time is subject to continuous and social (re)construction and naturalised in the "set of indispensable guidelines for daily life that transcend the individual" (Van Tienoven, 2019, p. 976). In Adam's words and more critical terms, these mechanisms also continually (re)structure social institutions and reify a seemingly "artefactual" form of time (1995, pp. 25–26), so that it has become "given and unalterable" (2003, p. 60). Even in more temporally sensitive studies such as longitudinal and process research is there "a need to focus more on the temporal dimensions" (Hassett & Paavilainen-Mäntymäki, 2013, p. 17). It is no wonder that studies on temporary use have been so fixated on 'duration;' how could we think otherwise when our comprehension has been tied to the confining but all-encompassing technologies and insights that we have known up to date? In attempting to move beyond this, we could try to understand that "time is instead conceived of as an inherent and constitutive feature of practises" (Blue, 2019, p. 15), and remember that while practises and contexts evolve, a key and constraining philosophy to control temporalities permeates our histories and knowledge up to date.

If we recall earlier discussions on historical phases of change, then we can order processes such as industrialisation, Fordism, and Taylorism—after the establishment of routines in early and religious institutions, as a continued development of subjugated time; these resulted in temporal standards in work and values that eventual manifested as well in built and natural space (Häussermann et al., 2008). Häussermann and Laepple elaborate that the Fordist mode of production became a "*zentrale[r] Taktgeber*" or a central generator of time; these affected not only the temporal structuring of work within factories but also determined the separation of functional and spatial realms for work and living and thus shaped roles and norms outside of work, as well (2008, pp. 154–156). This modern logic of work and living evolved to become a new model of societal regulation through which "*Zeitgeber*," or time-givers, are embodied in dominant temporalities and periodicities (Häussermann et al., 2008; Parkes & Thrift, 1979, p. 356). The dominant conceptualisation of time has not expired, however, but is reproduced through other processes that shape time-relevant meanings and values; these include urbanisation, globalisation and even climate change (Adam, 2003; Pahl et al., 2014). Recent disruptions from technology and globalisation to industrialisation's temporalities highlight the domination through which certain temporal legacies have side-lined other more natural and less linear temporalities (Adam, 2003; cf. Nowotny, 1992). As mentioned earlier, these temporal legacies also impregnated other modern processes with what Adam highlights as "the clock time and linear-perspective" (Adam, 2003, p. 65). If we recall Davoudi's critique that "linear time with a precise beginning and a fixed end is still dominant in the contemporary plans" (2012, p. 435), then we realise that Adam's processes include urban studies and its subjects of study, too.

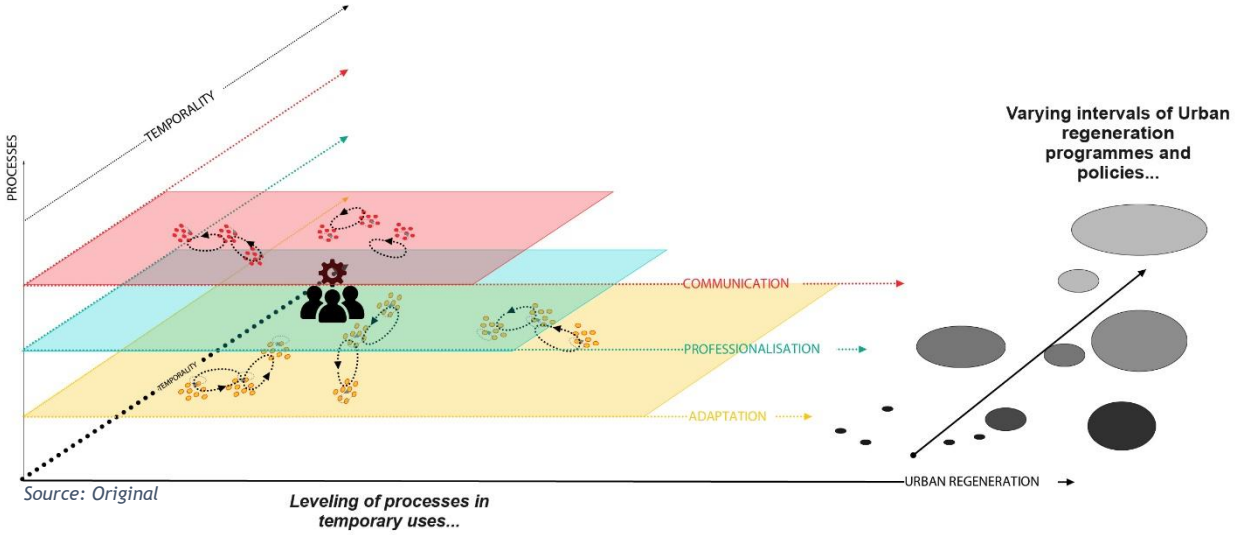
In awakening alternative understandings of time, it is valuable to break away from linear treatments of time that strive for a future that "is controllable and can be planned" (Andres & Kraftl, 2021; Davoudi, 2012, pp. 434–435). A better suited direction might be to conceptualise time as "multiple, composite,

simultaneous, open-ended and changing" (Adam, 1995, p. 5). Within the contemporary city, this arises from interactions between as well as (re)configruations of "chronos" (linear and objective time) and "Kairos" (nonlinear and subjective time) (Barabara, 2014, p. 225). This also perceives time through differentiated systems that can be social, natural, psychological and environmental (Elchardus, 1988). Each system and its own temporalities serve as references for time-reckoning systems, for which "the degree of generalisation and precision of the coordination of time-reckoning systems must become greater and greater" as systems increase in complexity (Bergmann, 1992, pp. 100–101). A time-reckoning mechanism "presupposes a standard system of units of time" (Zerubavel, 1982, p. 4); most often these references are embodied in duration (e.g. number of years for which a strategic plan might be valid, or length of time and expiry date by which permits might expire). Temporary uses are eventual openings that reveal less orthodox time-reckoning. These prioritise, above all, temporalities of experimentation and adaptation of communities and materialities. These also are generative of time-reckoning that emerges, entangles, and stabilises through temporalities, which we have yet to fully understand. From this perspective, restricted/bounded conceptualisations of time expressed through temporalities provide more distinctive means to explore processes of temporary use:

> *"Temporalities are not times; like continually broken clocks, they must be reset again and again. They are expected to recalibrate and fit into a larger temporal order. Temporalities do not experience a uniform time but rather a time particular to the labour that produces them. Their experience of time depends on where they are positioned within a larger economy of temporal worth. The temporal subject's living day, as part of its livelihood, includes technologies of the self-contrived for synchronizing to the time of others or having others synchronise to them. The meaning of these subjects' own times and experiences of time is in large part structured and controlled by both the institutional arrangements they inhabit and the time of others—other temporalities."*
>
> (Sharma, 2014, p. 8)

Temporalities, in other words, are more powerful characterisations of how temporary uses stabilise. In building on understandings of the events and durations of time, they encourage us to perceive the subtler shadings or flows of time. More importantly, they demonstrate that timings are not congruent with anticipated urban patterns and routines; they are processual forms of temporary urbanisms that "may be considered as the examples of Kairos, the occasional and qualitative time" (Madanipour, 2017, p. 143). Concerning temporary uses, Madanipour observes that temporary activities intersect three forms of temporality through their patterns of events; these are "existential," "experimental," and "instrumental" (2017, 4). Respectively, these reflect intuitive and vulnerable, open and future-oriented, as well utilitarian understandings of time (Madanipour, 2017, 4). I propose that an alternative set of temporalities (refer to Figure 28) might be used to illustrate patterns of temporary use stabilisation. In the context of urban regeneration, these reflect a layering of processes in temporary use (adaptation, professionalisation, and communication) and those external to temporary use (urban regeneration), which in sum feed into or shape resulting processes of temporary use (stabilisation).

Figure 20. Layers of temporality relevant to how temporary uses stabilise.



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Drawing on Madanipour, this means that contributions to the stabilisation of temporary uses, would leverage utilitarian and future-oriented understandings of time to inform how new regularities brought forth might intertwine or resound with established temporalities. Temporalities also demonstrate performative micro-repetitions or rhythms that are different from those of conventional planning such as those of larger scale masterplans or longer-term strategic processes (Andres & Kraftl, 2021). Micro-repetitions pop up or are mobile, moving through streets as parklets and through empty storefronts as pop-up shops. These rhythms might syncopate as spontaneous and ephemeral events—a mobile stand here for one day and there for another—contrasting the regular rhythms of fixed storefronts, other uses or functions. The rhythms of these temporalities also have potential to synchronise to commanding rhythms, as illustrated with individual temporary users who find a milieu with which the identify and finally decide to commit. Regardless of the temporal rhythms and their rich layering, time has more texture and weight when appreciated through a temporality lens. Now the next step is to sharpen both the conceptualisation and perception of its matter, which the terminology of rhythmanalysis can support. The next and final sections will explicate ryhthmanalysis and how it might illustrate the processes through which temporalities attune and generate what the work here understands as how temporary uses stabilise.

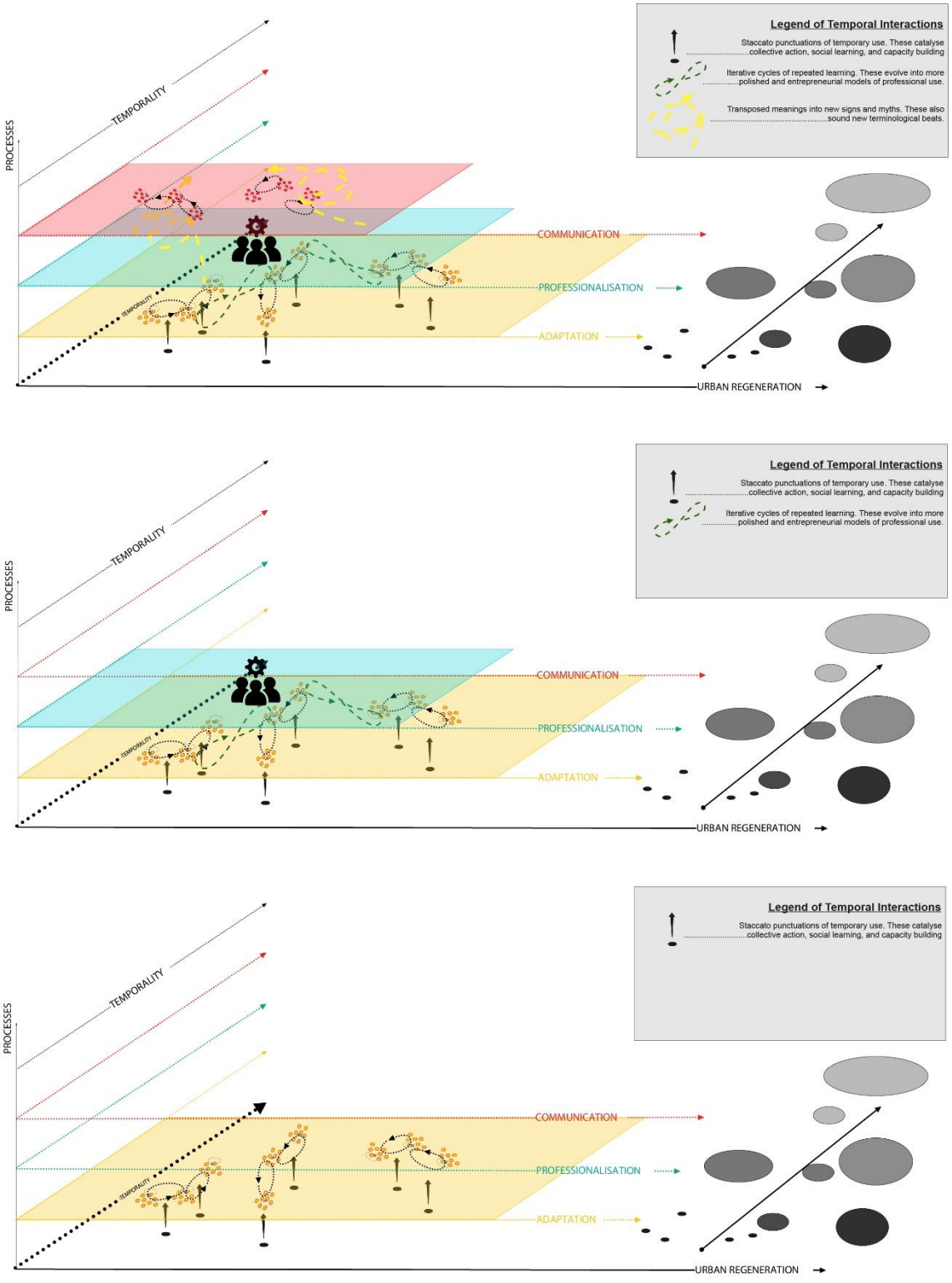
RHYTHMANALYSIS

Temporary uses and processes thereof, emerge through ragtime rhythms that are recognised as lively, spontaneous and pop-up patterns of initiatives and spaces (Bosák et al., 2019; Matoga, 2019; Prawata, 2015). Recall that mobile stand that suddenly appeared next to that permanent store—its rhythm is unpredictable and suddenly repeating again through contracted and uneven pulses—off the beat or ragtime, but still there to see. These patterns reflect irregular syncopations that emerge both with and without planning, unlike the linear and rigid synchronisation that epitomised the planned and industrial temporal regimes of Fordism (Häussermann et al., 2008). ***Rhythmanalysis*** presents a Lefebvrian theory that is not often mobilised to help understand the temporal variation and processes of the socialities and materialities in urban environments (Andres & Kraftl, 2021; Lefebvre, 2004; Lefebvre & Régulier, 1985). However, its analytical utility is already recognised in initial attempts to unpack everyday temporary urbanisms (Andres & Kraftl, 2021). These broadly encompass the short-lived or open intentions of temporary uses that can steady as nonlinear temporalities of

existence. As introduced earlier, conceptualisations on temporalities acknowledge both objective (Chronos) and subjective (Kairos) forms of time (Barabara, 2014). The conceptualisations of time also understand that their (in)variance are functionally commanded through various temporal conventions such as calendars and clocks (Cullen & Godson, 1975). These conventions help societies to standardise through ordering and sequences of durations and routine (Zerubavel, 1985); these also extended through planning and its instruments by framing time through "different futures", "temporal cycles", process and permit durations, or even mark administrative and bureaucratic turnovers (Abram, 2014, pp. 142–143). Let us now consider other possibilities for characterising time. These could be the less explicitly articulated and variable velocities (tempo) that might seem lethargic as we wait (Wexler, 2015). They appear as phases of acceleration as a result commodification, new forms of valuation (Levine, 2006; Rosen, 2012), or even digitalisation. This dissertation contends that an exploration of temporal rhythms expressed through temporality, including but not limited to cycles, velocities, synchronocities (attunement), and simultaneities (density) helps us transcend the dominant temporal notion of duration and more richly reflect a "diversity of permanent and non-permanent temporalities within the process of urban making" (Andres & Kraftl, 2021, p. 5; Levine, 2006).

Also, of particular relevance to urban (planning) studies, I draw on the conceptual strengths of rhythmanalysis as a spatial and temporal framework and transpose it to a scale above its original intentions as a method and theory (Lefebvre, 2004). This acknowledges a Lefebvrian understanding of how temporalities could be experienced as rhythmed relationships for people with the built and natural environments (2004) and builds upon the insights of others in conceptualising the spatial and temporal together (Blue, 2019; Bopp & Bercht, 2021; Crang, 2003; Walker et al., 2020). Rhythmanalysis offers greater depth and richness to explicating how temporal qualities and "dynamics of repetition and 'beat'" might "pervade everyday life, providing temporal structures that organise and order repetitions within the complex, ongoing flow of the social world" (Walker, 2014, p. 51). This equips us with vocabulary that is expressive, precise and articulate of how temporalities are more than the dominant orientations towards a durational understanding of time. By contrast, temporalities are multiple and flourishing expressions of time that exist in standardised and ordinary mess— "polyrhythmic" or "eurhythmic" (Lefebvre, 2004, p. 67). The former acknowledges the multiplicity and simultaneity of a variety of rhythms, while the latter underlines a normal or harmonised state of rhythms (Lefebvre, 2004). Temporal rhythms can exhibit an isorhythmia by means of higher-order, rare and equal rhythms; these also express arrhythmia as "rhythms break apart, alter and bypass *synchronisation*" (Lefebvre, 2004, p. 67; emphasis in original; see also Blue, 2019). Isorhythmia might illustrate the imposed temporalities from clocks and calendars that have not only become socially accepted, but are the keystones to determining schedules or time zones. Whereas arrythmia could illustrate how the pandemic catalysed struggles with asynchronous or blurring schedules and lifestyles; these are forcing us away from the reliability of old normal. In an *animated* and profile illustration (refer to Figure 29 on the next page) of how these temporal impositions and inspirations might look, we can draw on multi-level perspectives to help background the various rhythmic temporalities embedded into broader transitions of systems (Geels, 2010, 2019; Olsthoorn & Wieczorek, 2006).

Figure 21. 'Animated' layering of temporalities and their interactions.



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Thus, it is rhythms of practises and uses, performed through programmatic activities or delineated by spatial trajectories, that can insinuate but attachment and durability. Attachment would support interpretations for fixed temporary uses as stabilised. In contrast, durability would support interpretations of operationally unchanged but footloose temporary uses as stabilised. Polyrhythmic temporalities can unravel through arrhythmia but also entangle and conform as eurhythmic processes. The temporal (dis)continuities are stressed through their co-existing and contrasting patterns. Temporary use stabilisation through this lens exemplifies polyrhythmic enmeshing. Their processes show how arrhythmic temporalities

become captured, pushed or pulled into stronger and eurhythmic temporalities. How this happens will be elaborated in the next section before the final ontological and epistemological positioning for this dissertation.

ENTRAINING TEMPORALITY

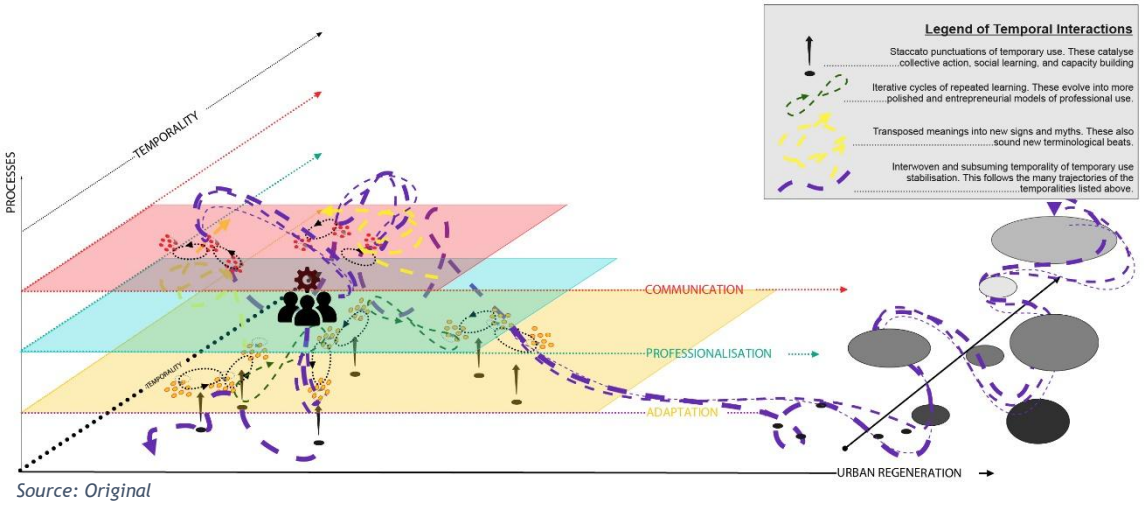
The capacity to discern polyrhythmic and eurhythmic temporalities enables the articulation of processual dynamics through temporary uses; to some extent, these are already identified as diverse and changing "rhythms" with varying "time horizons" expressed through the very label "temporary" (Stevens & Dovey, 2018, p. 324). The accounts for rhythm in scholarship are still nascent but have already found resonance in studies on energy and climate change (Oppermann et al., 2020; Walker, 2014), inequities resulting from air pollution (Walker et al., 2020) and gendered behaviours of night-time economies (Schwanen et al., 2012). These contributions integrating rhythmanalysis expand efforts to theorise on temporary uses not only as a spatial phenomenon, but relational developments between (in)congruent temporalities and uneven spatialities (Andres & Kraftl, 2021; Mc Ardle, 2020).

Temporary uses catalyse activities that often appear incongruent with pre-existing circumstances because of their spontaneity or different functionalities. In some cases, these might seem desirable as Desmini explains by drawing on Harvey's notion of the spatial and temporal fixes (2015). Here, a critique of the "Proportional Mismatch" reveals preponderances to frame these fixes spatially since "[temporary use] projects become exemplary and best practises, despite the fact that they have not influenced enough change to solve the original causes for abandonment and decline" (Desimini, 2015, pp. 288–290). What is implied by 'original causes' are the more continuous and capitalistic temporalities; these motivate property owners and developers to attribute value to the durations, frequencies, acceleration and cycles of time, which manifest a "temporal fix" by "converting the fluidity of money into long-term commitments, where the financial returns to investors are realised over many years, not weeks or months" (Castree, 2009, pp. 46–47). What is more, these proclivities drive and are pulled by a "perverse Schumpeterian gale" intended to "encourage 'a habitude of use' which means something might stick" (Tonkiss, 2013, pp. 319–320). To this, Lefebvrian rhythmanalysis presents a much stronger explanans by revealing how corresponding rhythmic embodiments and experiences with everyday practice find entry "into use" (Lefebvre, 2004, p. 69).

Besides enabling us to acknowledge time's influence in creating or anchoring particular space or "places" (Mulíček et al., 2015), rhythmanalysis also provides meaning to these spaces by highlighting how they "provide a general sense of 'pause'" in contrast to activities; in short it helps suggest rhythms of temporalities (Crang, 2003, p. 192). Similarly, temporary uses initially seem contrary to established and capitalistic activities since they help "slow the accelerated pulse of cities given over to retail consumption and rapid transit…[and] help to retard the frenetic cycle of urban obsolescence, investment, and intervention" (Tonkiss, 2013, p. 320). However, as temporary activities hasten or steady, the reverse is also illustrated as vacancy and dereliction of discontinuous temporalities catch up to more continuous temporalities of use. They establish themselves as fixed and fall into metronomic or market-oriented rhythms. What were syncopated rhythms identified through processes of temporary use stabilise and synchronise with the temporalities commanded by longer and established processes. At the same time, we notice through the regularities of rhythms how temporalities can become densely layered and simultaneously the sources of

temporal scarcity (Zerubavel, 1985). Nowhere do we see this clearer than through the contingent tensions and risks that arise when temporary uses succumb to fatigue as "their efforts to transform the city are consistently erased by wider market forces...[while] the importance of the spaces themselves to the production of these initiatives is often underestimated and it is assumed that they can be reassembled IKEA-style in another location without the loss of anything essential" (O'Callaghan & Lawton, 2015, p. 85; see also (Marian-Potra et al., 2020). We also understand the irregularities of rhythms; they were the vacuums for temporary uses and are the temporal lags identified through the syncopation of different activities (Bergmann, 1992; May & Thrift, 2003).

Figure 22. Temporary use stabilisation as entrainment.



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As rhythmanalytical patterns and their demands become clearer, so too does the need to find new means to articulate and discuss such phenomena become urgent. Schwanen et al. make use of the chronobiological notion of ***entrainment*** to describe how certain elements—"*Zeitgeber*," or pacemakers—impel others to adopt or adjust to their rhythm (2012, p. 2066). Put differently, entrainment describes forward moving processes through which arrhythmia evolve into eurhythmia, such as what happens when spontaneous or erratic temporary uses stabilise and interlace into larger processes of urban regeneration. They further explicate that "entrainment should not, however, be seen as a deterministic and top-down or hierarchical process emanating from a single core or a few centres. Different theoretical registers […] hold that entrainment is open-ended, characterised by contestation, and based on local self-organisation" (Schwanen et al., 2012, p. 2066).

From an urban geographic angle, Parkes and Thrift point out how Zeitgeber facilitate the "containment" of events in space and time; Zeitgeber govern both spatial and temporal processes of synchronisation, of which the latter is specifically associated with entrainment (Parkes & Thrift, 1979, p. 363). This manner of theorizing time is constructive as it supports "thinking beyond time flowing like simple 'lines' and trajectories to look at loops and recursivity, and fractures and folds in the spacetime fabric of the city" (Crang, 2003, p. 205). This perspective also acknowledges the complexity of time and encourages us to "focus on connections, relationships and interpenetrations, and recognise the multiplicity of times: lived, experienced, known, generated, reckoned, allocated, sold, controlled and used as an abstract exchange value" (Adam, 1995, p. 60). Here again, it is helpful to draw on complexity thinking (see Excursus) to consider how temporal systems, as much as material, natural and social systems are implicated in the non-linear

patterns that emerge disproportionately from interactions; these could also be represented by generative elements understood in complexity (Byrne & Callaghan, 2014). Entrainment in this sense is comparable to the conception of dampening feedback loops that dominate or impose upon amplifying feedback loops and enable emerging but temporal patterns to turn into structural transformations (Boonstra & Rauws, 2021). Key to this, however, is the forward motion of this temporal pattern which dominates and is different from explanatory concepts such as path-dependency and feedback rooted in other complexity sciences[11]. The first publication (#1 pN) addresses this in relation to processes of adaptation in temporary use.

In view of this, temporalities are susceptible to other temporalities; they also generate other temporalities. These, in aggregate, institutionalise through different socio-temporal orders. To support this, Blue's rhythmanalytical interpretation of practice theory sees institutions as constituted by networks that produce and reproduce practises as well as their effects (2019, pp. 8–10). In terms of temporary uses, this perceives temporary activities and initiatives (arrhythmia) not as opposed to but constituting urban regeneration (eurhythmia) since "every eurhythmia always already contains arrhythmia, pauses, breaks, and off-beats" (Blue, 2019, p. 20). Disruption might result through the production of arrythmia, which weaken previously prominent temporalities. Entrainment might result when reproduced arrythmia layer and reinforce temporalities; through regular reproduction can make temporal rhythms become resilient to other arrhythmia (Blue, 2019). Indeed, the temporary uses in the context of transformation by Eshuis and Gerrits reaffirm notions of entrainment by recognising institutionalisation in the "solidifying of behavioural patterns into normative patterns with rule-like qualities"; and specifically, through stabilisation processes dependant on objectification and naturalisation (2019, pp. 3–4). Characterisations of entrainment or regular and resilient rhythms of eurhythmia also imply this stabilisation, albeit from a temporal point of view.

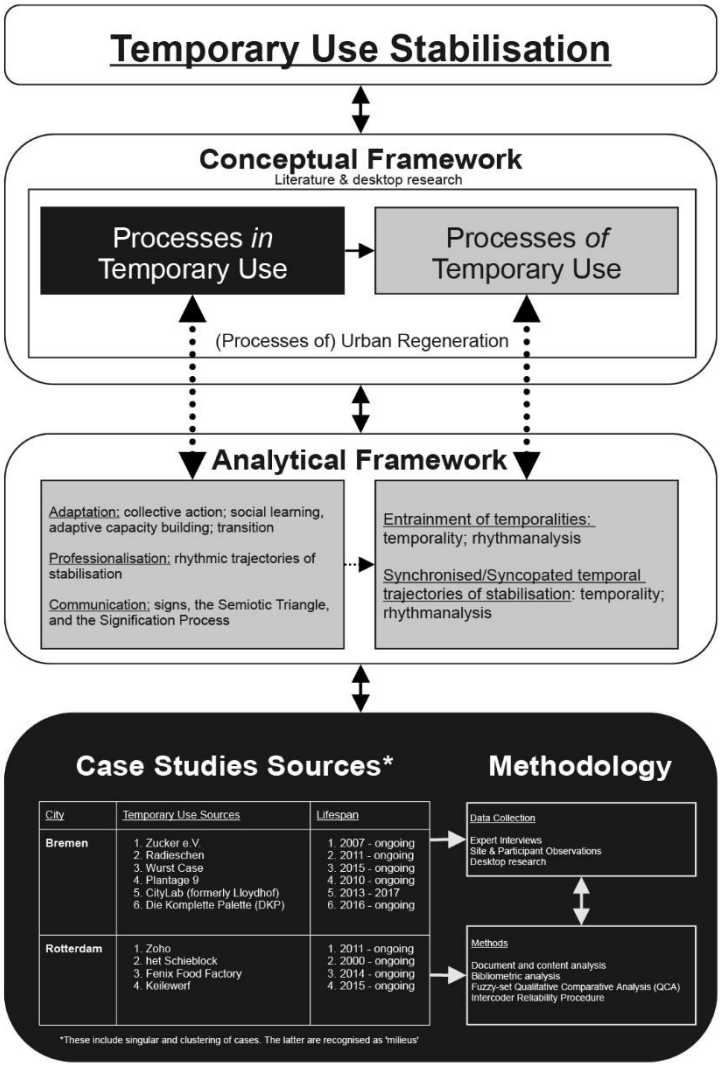
The parallels between the diverse processes relating to temporary use are bridged through the rhythms and temporalities. These bridging and temporal relations also help temporary uses stabilise and endure; these could be through recursivity, reiteration, or reversal. These might become evident through patterns of permit renewals (Eshuis & Gerrits, 2019; Martin et al., 2019; Windemer, 2019), nomadic or pop-up locations (Marian-Potra et al., 2020; Oswalt et al., 2013; Stevens, 2020) or even transposed but reproductive narratives (Honeck, 2018). Indeed, it is the prerogative of this dissertation to suggest that multiple rhythms can be discerned in the entrainment or stabilisation of temporary uses. This could be carried forward with the capacity for adaptation through temporally iterative and tangled lessons learned through collective action (#1 pN). It could also be the recursive delineation marked by the cycles of symbols that reinforce neoliberal narratives in processes of communication about temporary uses (#2 UP). Another is a spatially syncopated temporality emerging from temporary uses that are more intensively steered through processes of professionalisation; these manifest through syncopated trajectories of spatially mobile but operationally stable versions of temporary uses (#3 URP). Finally, it could be the spatially synchronised trajectories marked in the temporary uses that effectively adapt the material and operational systems so that the processes of stabilisation are perceived as fixed to single sites (#4 Cities). When we grasp and understand the interweaving of the diverse and many temporalities of processes that relate to temporary use processes, then we begin to fully comprehend how temporary uses stabilise. We also understand that

[11] In connecting this to concepts of adaptive and ecological resilience, entrainment could be understood as a means to analyse contradictory but simultaneous feedback mechanisms and dynamics. Ernstson et al. for instance describe "positive feedbacks" as mutually reinforcing and sustaining dynamics that could lead to path-dependent regimes (2010, p.532). Entrainment helps to highlight the temporally negative feedback that occurs while more social modes of positive feedback are taking place. In this sense, both positive and negative feedback dynamics are present and made visible through entrainment.

stabilisation is entrainment and paradoxical—fixed but also in motion, discerned through rhythms in space and time. In essence, temporary use is both a conceptual and real nexus of processes that generate multiple, recursive, syncopated and synchronised temporalities. Conventional theories and frameworks lack the astuteness to explicate temporally the processual relationships linking space and time. In contrast, rhythmanalysis can help us discern temporalities and how the various the rhythmic undertones might slacken, mesh or take on motion.

3. RESEARCH DESIGN

As revealed in preceding sections, I present research through this dissertation that is conceptually and epistemologically oriented towards a theorisation of time and specifically temporality. Scaffolding this research design is an ontological logic rooted in realist and subjectivist positions of ***critical realism*** (Fryer, 2020). This meta-framework understands that urban (planning) scholars make sense of reality in a co-constructive manner; this is contingent upon the interpretations of the researcher as well as the objects of study and provisional at best (Alexander, 11, 2022; Gerrits & Verweij, 2013). Guided by this meta-framework, I attempt through this dissertation to answer the question: How does temporary use stabilise? The logic paved through this conceptual and ontological framing reflects on processes of stabilisation as encompassing a diversity of other sub-processes and factors in temporary use. Some of these processes and factors are tangible and obvious while others are subtler and abstract. In making sense of the reality that subsumes and encompasses this range of influence, critical realism endorses the study of ***becoming***, instead of ***being***, by appreciating that "different causal powers operate simultaneously. Some amplify each other, others counteract each other and some are only activated under the influence of other causal powers. All this varies with the specific context" (Næss, 2015, p. 1231); accordingly, "the main objective of scientific research is to explain observable phenomena by uncovering underlying causal mechanisms. Objects have properties enabling them to exercise certain forms of influences on other objects and/or make them liable to certain kinds of influences from other objects" (Næss, 2015, p. 1231). These properties can also include "mental states and attributes (including meanings and intentions), [which] although not directly observable, are part of the real world" (Maxwell, 2012, p. 8).



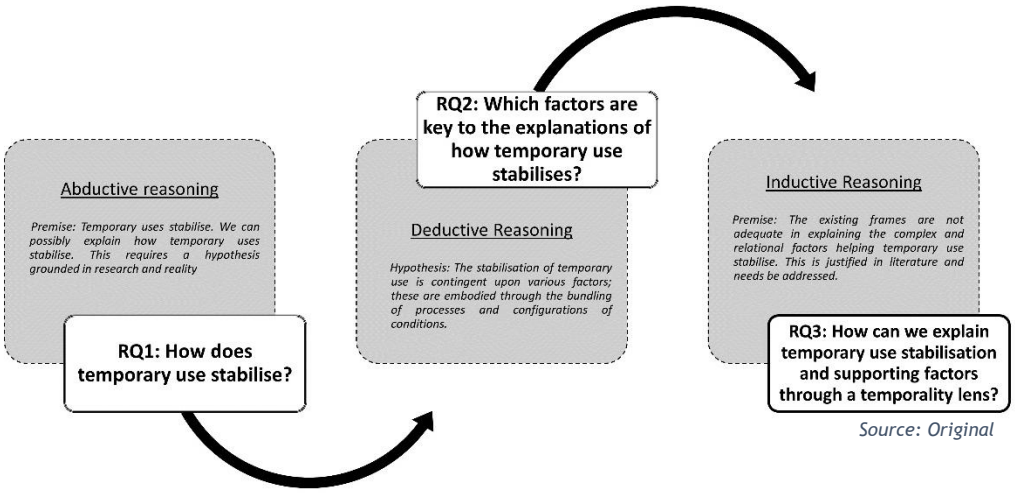
Source: Original

Figure 23. The research design.

This philosophical positioning guides the research in this dissertation, including its triangulated study of temporary use stabilisation. Triangulation refers here to the multiple methods or sources supporting the "confirmation, completeness and 'abductive inspiration' or retroduction" and general validity of the research work (Denzin & Lincoln, 2018; McEvoy & Richards, 2006, p. 71). This is a key dimension informing the multiple stages of the research work (research strategy, data collection, and analysis) in order to develop a deeper

and richer understanding of the processes of study (Denzin & Lincoln, 2018; Kumar, 2011; McEvoy & Richards, 2006). Figure 31 details this in the context of the overall research design. While relevant to the line of reasoning that threads together the research behind the research questions, this positioning also supports the abductive, deductive and inductive reasoning that inform the development of the research questions that is illustrated in Figure 32. This reasoning follows the iterative "three-stage logic of research" through which an initial and discovery phase establishes a "meaningful rule" to be tested in the form of a hypothesis; this is followed by a secondary phase of testing and tertiary phase of supposition (Reichertz, 2014, 130-131.).

Figure 24. Abductive, deductive, and inductive reasoning of the research questions.



Source: Original

In helping delineate an "explanatory programme" (Archer et al., 2015, p. 13), a critical realist ontology is not only relevant for social and planning theories (Archer et al., 2015; Boonstra & Rauws, 2021), but key in framing processes of stabilisation through a temporality lens. The following sections elaborate on the elements of critical realism supporting this endeavour before addressing methodological considerations.

3.1. GETTING REAL

> *"Verstehen now consists in the melting of horizons, and truth no longer resides in being but in becoming."*
>
> Roy Bhaskar, 2005

Let us recall that this dissertation argues for conceptualisations of time that are defined by temporalities and temporal rhythms. This appeal is established by others as an alternative to the concept of 'duration', which has long served as a measure for qualities of stability or permanence (Andres & Kraftl, 2021). By framing processes of stabilisation through 'temporality', what emerges are not closed or bracketed intervals during or within which the stability of temporary use is enacted. Rather, processes of stabilisation emerge out of the nested relationships that comprise bundled factors and entrained processes. The latter are embodied within (processes in temporary use) and outside (process of urban regeneration) of temporary uses. Individually, these processes individually characterise (activate) alternative temporal patterns that may, at different tempos and rhythms, layer, punctuate or cycle through and even demarcate temporal trajectories in space. Most interestingly, they can also entrain (stabilise) to become coherent and broader summation of

other temporalities. The coherence coming out of this demarcates the temporalities through which temporary uses stabilise[12].

This way of framing how processual temporalities layer and synchronise draws on the ontological sensitivity of an "emergent reality" (Karakayali, 2015, pp. 736–737) outside of social reality. This interpretation of reality rejects positivism's instrumentalist predilections or complete abandon for causality; at the same time, it rejects constructivism's narrow framing of knowledge as a construct and part of human reality (Fletcher, 2016; Maxwell, 2012). Instead, it forges a philosophical and middle ground to acknowledge causal mechanisms and how these play out within a stratified understanding of reality. Before moving onto methodological discussions, I introduce the critical realist concepts in more detail in the following sections. This will round off the ontological foundations for this dissertation's research design.

3.1.1. GENERATIVE MECHANISMS & PATTERNS

What a temporality lens offers in making sense of complex phenomenon such as temporary use stabilisation is a conceptually analytical framework for the patterns that unfold according to a more qualitative measure of time. This qualitative measure of time reflects the open, interacting, unpredictable and non-linear nature of urban phenomena. It also provides the means to explicitly articulate the multiple and diverse understandings of time inherent to, and generating complex and urban phenomena. Temporality, in a critical realist sense, could be interpreted as what Bhaskar identified as a ***generative mechanism*** or "nothing other than the ways of acting of things" (2008, p. 3); which "at work causes the sequence of events" (Bhaskar, 2005, p. 189). In other words, generative mechanisms induce non-deterministic, tendencies or "demi-regularities" (Fletcher, 2016, p. 5) that catalyse patterns and processes of events. More urbanely, these contribute to activating, "influencing," "enabling," and "constraining" forces in social and material structures (Boonstra & Rauws, 2021, p. 15; Næss, 2016; Wohl, 2017). They are also embodied in conditions imparted "through framework rules, incentives and experimentation" (Boonstra & Rauws, 2021, p. 15) that might orchestrate the stabilisation of temporary use.

3.1.2. STRATIFIED REALITY

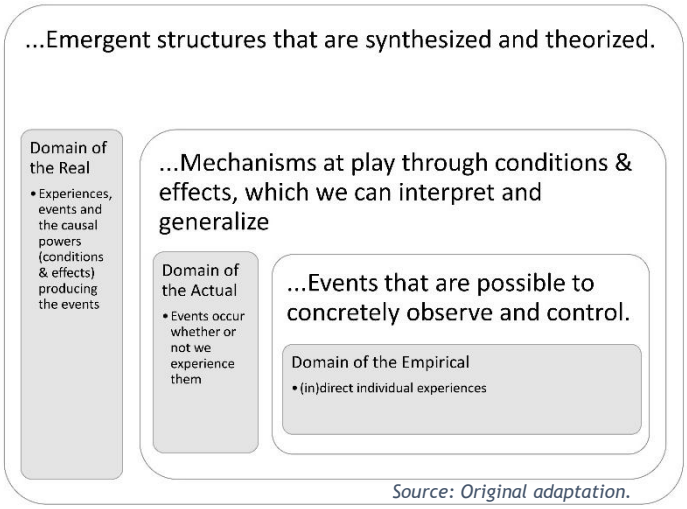
Critical realism also sketches out a framework of stratified realities (Næss, 2016, p. 59). It is possible to identify causal patterns expressed through generative mechanisms; the latter can be recognised through interactions at, and between the levels of the stratified realities (Gerrits & Verweij, 2013). Reality as illustrated in Figure 33 is composed of what Fletcher identifies as a "three-layered 'iceberg' of reality… [that can be] … inherent properties in an object or structure that act as causal forces to produce events (e.g. those appearing at the empirical level)" (2016, p. 3). The initial empirical level "is the realm of events as we experience them," while the level of the "actual" designates the realm for which "there is no filter of human experience. Events occur whether or not we experience or interpret them" (Fletcher, 2016, p. 3). Finally,

[12] Refer to visuals presented in the section 2.3.

the level of the "real" indicates the realm in which phenomenon exist with reference to "structures and causal powers" (Archer et al., 2015, p. 12).

This scaffolding of reality presumes openness and plurality in how processes and phenomena come to be and presumes that there is likely no single cause nor explanation for a single effect (Archer et al., 2015). This is also congruent with this dissertation's approach to explaining how temporary uses stabilise, with the help of which factors, and through a temporality lens.

Figure 25. Levels of stratified realities.



Source: Original adaptation.

A weakness addressed by Bhaskar along with other critical realists by positing the notion of a stratified reality, is that of the "epistemic fallacy"; this indicates how western philosophies have reduced questions of "what is" to questions of "what can we know" (Archer, 2009, p. 12). In resisting the reduction or conflation of the domain of the real to the domain of the actual (that is, it argues for the irreducibility of the reality of causal structures and generative mechanisms to the patterns of events that they produce) (Hedlund-de Witt, 2012, p. 7), critical realism confesses awareness for the limits or incompleteness in our understanding complex systems (Gerrits & Verweij, 2013; Turner & Baker, 2019). Methodologically, this implies that in order to achieve richer explanations and understandings of reality, the objectives of research design and methods are to uncover "causal mechanisms [that] cannot be apprehended directly as they are not open to observation, but [that] can be inferred through a combination of empirical investigation and theory construction" (McEvoy & Richards, 2006, p. 69). The next sections address this by discussing the methodological procedures taken through this research.

3.2. METHODOLOGY

In order to support the inquiry of this dissertation's research, a primarily comparative, and mixed-methods approach is taken to towards finding explanations for how temporary uses stabilise through a temporality lens. This makes use of both qualitative and quantitative methods to uncover the context-specific and temporally contingent empirical demi-regularities or generative mechanisms (Maxwell, 2012). As well, this approach engages in "theoretical redescription – through which empirical data are re-described using theoretical concepts," in order to help "[raise] the level of theoretical engagement beyond thick description of the empirical entities, but with an acknowledgment that the chosen theory is fallible" (Fletcher, 2016, p. 8). As introduced earlier, an abductive, deductive, and inductive logic helps formulate the inquiry in this dissertation. This logic of reasoning also leverages retroduction, which entails intensify iterative engagement between "empirical and deeper levels of reality to fully understand the phenomenon under study" (Fletcher, 2016, pp. 9–10). Retroduction, allows for complementary and reflexive consideration of causal mechanism that interact between transitive (empirical) and intransitive (real) domains (Bhaskar, 2008; Fletcher, 2016;

Næss, 2015). This additionally supports the triangulation that is also mentioned at the beginning of this chapter. Again, triangulation ensures validity; it also supports reliability. Validity is respected in terms of the logic and completeness of the information, while reliability is respected in terms of the consistency and confirmation provided through the information (Denzin & Lincoln, 2018; McEvoy & Richards, 2006). This integration and position of multiple conceptual and analytical constructs are broken down in Table 3 and associated with the corresponding research questions.

Table 3. Conceptual and analytical positioning in relation to research questions.

	Research Aim	Conceptual Construct	Analytical Construct	Sources, Data, and Methods
RQ1: How does temporary use stabilise?	...to understand the possible context, interactions, and factors that contribute to the stabilisation of temporary uses	...critical realist ontology	...generative mechanisms ...stratified reality	...literature review ...abductive, deductive, and inductive reasoning ...retroductive reflection
RQ2: Which factors are key to the explanations of how temporary use stabilises?	...to identify which key factors contribute to the stabilisation of temporary uses ...explicate how the key factors contribute to the stabilisation of temporary uses ...determine empirically, if possible, which factors are necessary and sufficient for the stabilisation of temporary uses	...processes of 1) adaptation, 2) professionalisation, and 3) communication ...conditions of entrepreneurial management, risk perceptiveness, adaptive capacity, interactive attachment, municipal support, functional compatability, and spatial affordance	...1) collective action, social learning, adaptive capacity building, transitions; 2) synchronised and syncopated rhythmic trajectories of stabilisation; 3) signs, the Semiotic Triangle, and the Signification Process ...rhythmic bundles, institutional rhythms	...(meta-analytical) literature review ...document and content analysis ...bibliometrics ...interviews ...site and participant observation ...Fuzzy-set Qualitative Comparative Analysis (fsQCA) ...multiple and cross-case approach to a comparative case study ...Intercoder Reliability (ICR) procedures
RQ3: How can we explain temporary use stabilisation and supporting factors through a temporality lens?	...reframe temporary use stabilisation through an alternative set of vocabulary and syntax that frame a temporality lens	...temporality ...rhythmanalysis	...entrainment of temporalities ...sychronised and syncopated temporal trajectories	...literature and desktop research ...abductive, deductive, inductive reasoning, and retroductive reflection ...(meta-analytical) literature review ...document and content analysis ...bibliometrics ...interviews ...site and participant observation ...Fuzzy-set Qualitative Comparative Analysis (fsQCA) ...multiple and cross-case approach to a comparative case study ...Intercoder Reliability (ICR) procedures

Source: Original

The multi-method approach draws on primary data from semi-structured interviews, site- and participant-observations. This also draws on secondary data from scholarly literature, planning policy and regulations (including plans, grey publications and archival documents), as well as (social) media articles and updates. These broad ranges of sources informed all case studies within the context cities of Bremen (Germany) and Rotterdam (The Netherlands), as alluded to in the section 2.2.

3.2.1. DATA COLLECTION

The data collection followed a purposive sampling strategy through which considerations for the best sources of information (policy experts, temporary users, and possibly affected stakeholders) were made (Denzin & Lincoln, 2018; Kumar, 2011). Pursuing this, the snowball sampling strategy facilitated access to a greater number of contacts for semi-structured interviews until a point of saturation was attained (Denzin & Lincoln, 2018; Kumar, 2011). In sum, 65 semi-structured (group) interviews were conducted between 2015 and 2019. These informed 40 temporary use case studies. The interviews were conducted in German, Dutch and English and resulted in a final dataset of 53 transcripts. Details for the list of interviews and a transcript are available in the appendices as well as online supplementary materials (Appendices 8.1, 8.3, and 8.6; cf. Chang &

Gerrits, 2021a, 2021b, 2021c). There are more interviews than transcriptions as certain interviews included multiple interviewees. Additionally, Intercoder Reliability procedures involving two coders were followed. This was guided by a coding tree and rigorous process of cross-checking the coding (Appendices 8.5.4; cf. Chang & Gerrits, 2021a, 2021b, 2021c). Over 150 archival and policy documents were also reviewed to help annotate or confirm insights derived from the coded interviews.

3.2.2. CASING

Initial decisions were "made" to consider general initiatives engaging in temporary uses as case studies; during the process of data collection, cases were "found" anew or refined to only include temporary uses initiatives that were registered as legal entities (Denzin & Lincoln, 2018, p. 591). Details regarding the temporary use case studies and relevant milieus along with listed interviewees are available in the Appendices (Appendices 8.1, 8.3; and 8.6; cf. Chang & Gerrits, 2021a, 2021b, 2021c). Figure 4 below shows three milieus (orange: Plantage 9, Zucker e.V., CityLab, and Wurst Case) and 2 individual temporary uses (purple: Radischen, DKP) in Bremen. Figure 35 on the next pages shows four milieus in orange (Zoho, het Schieblock, Fenix Food Factory, and Keilewerf).

Source: Open Street Maps; original rendering

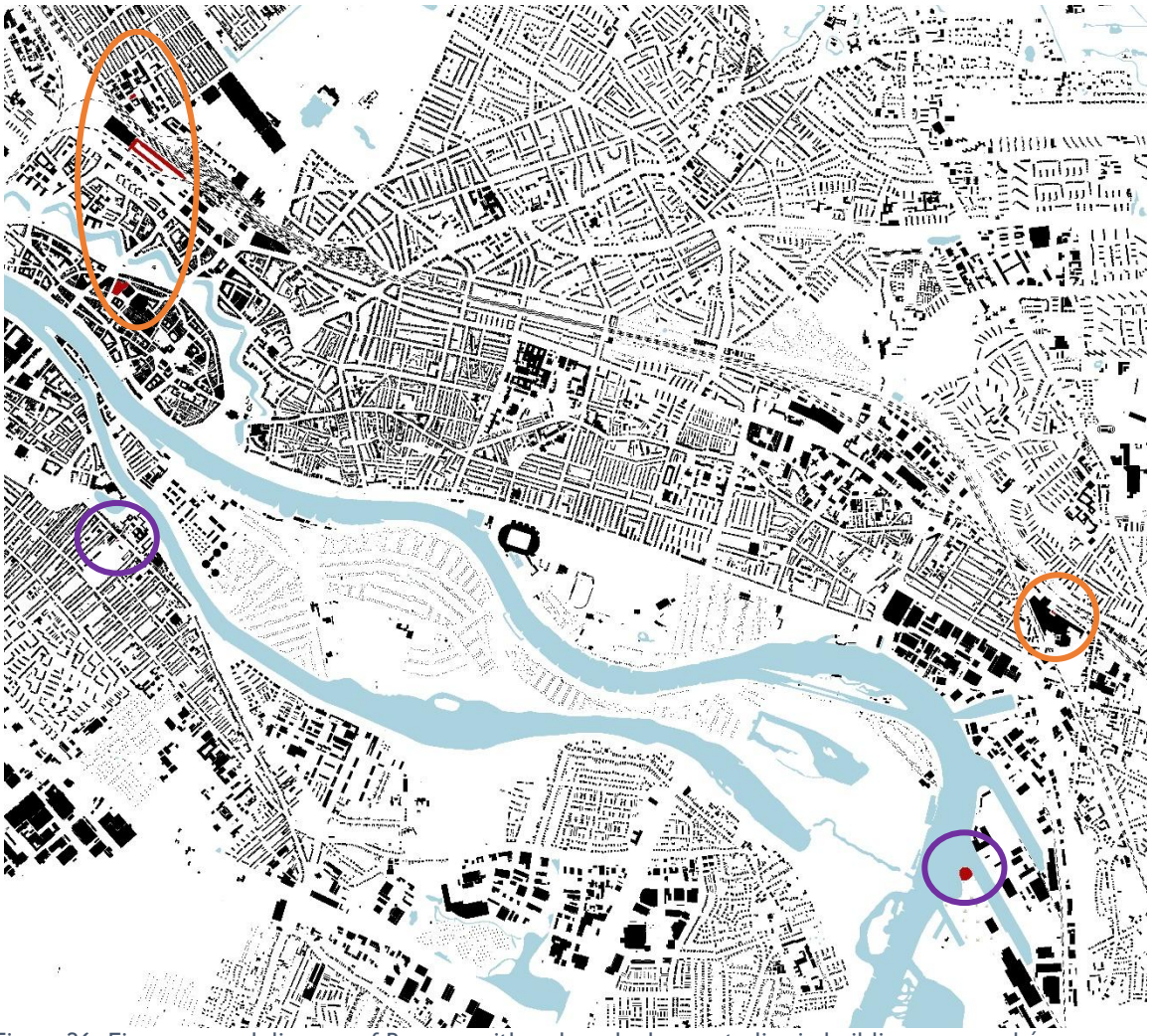


Figure 26. Figure-ground diagram of Bremen with red-marked case studies in building mass poches.

Source: Open Street Maps; original rendering

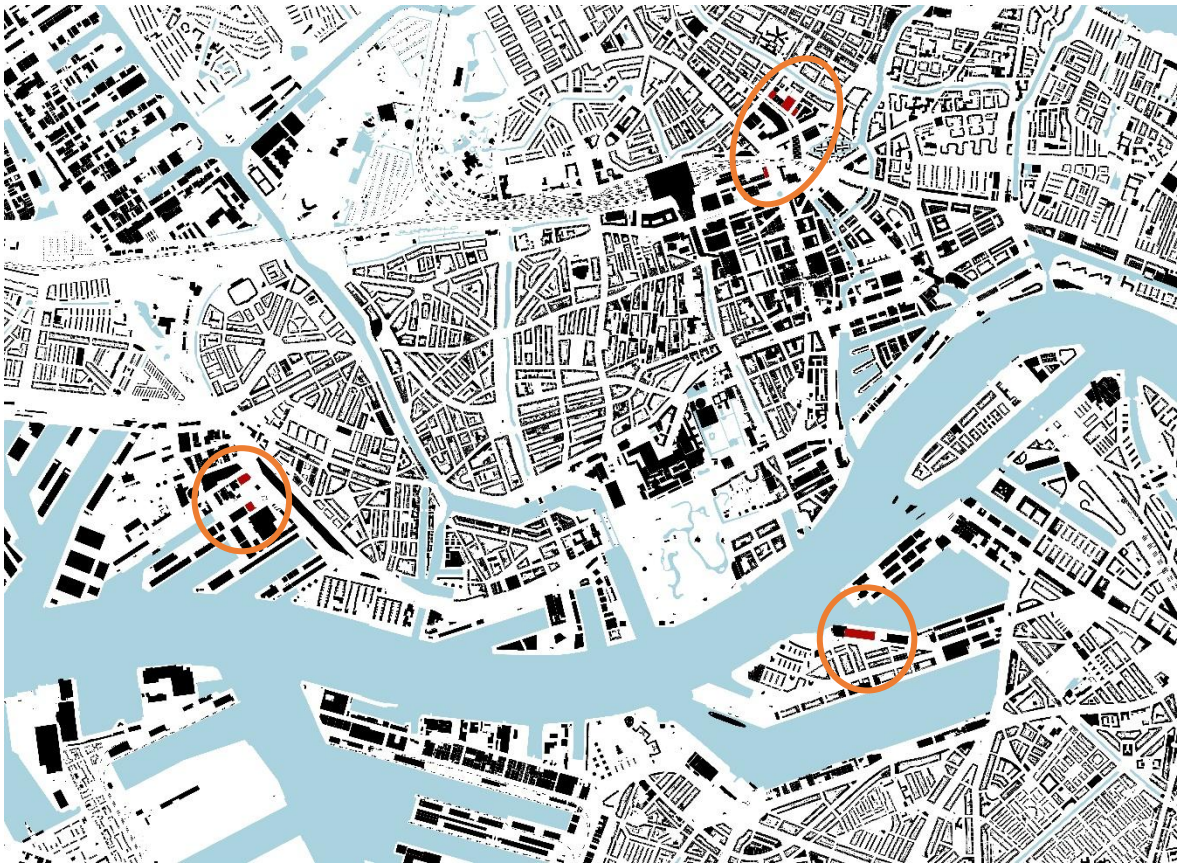


Figure 27. Figure-ground diagram of Rotterdam with red-marked case studies in building mass pochés.

The value of the case study method is not how it affects the gathering and comparison of localised information (Yin, 2017), but its greater suitability in addressing 'how' and 'why' forms of research questions (Flyvbjerg, 2011; Yin, 2017)—as is the case in this dissertation. In other words, the case study method supported both holistic description and hypothesis generation as well as theory testing (Denzin & Lincoln, 2018; Yin, 2017). While other interpretations of case studies exist, for instance as "intensive units" of both qualitative and quantitative study (Flyvbjerg, 2011; Ragin & Becker, 1992; Yin, 2017), the interpretations from Ragin, Bryne and Callaghan, conceptualising case studies as "complex systems" or as "fuzzy realities with complex properties, that have a holistic element whilst being constituted from complex configurations" (Denzin & Lincoln, 2018, p. 591; Ragin, 2007) is notable in light of this dissertations epistemological and ontological positions.

3.2.3. METHODS & ANALYSIS

While it is not within the confines of this part of the dissertation to detail the procedures of all the empirical, the following will present a brief overview of the underlying considerations and methods. The genesis to considering temporary use stabilisation as a result of multiple processes begins with considerations for processes beyond adaptation highlighted in section 4.1 (#1 pN); this also prompts the abductive logic that helps formulate research questions two and three. The abductive approach to the data analysis is most pertinent to section 4.2 (#2 UP), through which a theoretical rediscription of temporary use stabilisation is explored and illustrated in processes of communication. This bibliometric analysis and socio-semiotic framing of scholarly discourse draws on a literature review of temporary use in relation to stabilisation. It also

discusses the recursive patterns through which temporary uses conceptually stabilises through a socio-semiotic framework. Peräkylä and Ruusuvuori (2018) claim that textual analysis, as was integrated into this part of the research, are possible through semiotics and critical discourse analysis; the former considers symbols (through keywords) while the latter explicates how inequalities might be reproduced through discourses (Fairclough et al., 2002; cf. Denzin & Lincoln, 2018). In concert to this, the retroductive approach to the data analysis was applied through the Fuzzy-set Qualitative and Comparative Analysis (fsQCA) which is expanded upon in sections 4.3 (#3 URP) and 4.4 (#4 Cities). As a way to uncover the causal and configurational complexity of factors that help stabilise temporary use, fsQCA enabled both within and cross-case comparisons (Denzin & Lincoln, 2018; Ragin, 2007). These considered the most common factors contribution to temporary uses stabilisation—as claimed in literature and existing research. The final set of conditions were derived inductively from the literature review informing section 4.2 (#2 UP). These include risk perceptiveness (RP), entrepreneurial management (EM), interactive attachment (IA), adaptive capacity (AC), functional compatibility (FC), municipal support (MS), and spatial affordance (SA) and contribute to the analysis in sections 4.3 (#3 URP) and 4.4 (#4 Cities). In relation and contribution to stabilisation, these were correlated as generative mechanisms for patterns and demi-regularities (Fletcher, 2016; Gerrits & Verweij, 2013; Yin, 2017).

4. RESEARCH HIGHLIGHTS

Fleshing out this dissertation's work and the research questions in this dissertation is a series of five publications and manuscripts. These components of the dissertation bring together multiple conceptual lenses and a variety of analytical methods. They are also outcome of work that I, and in some cases with co-authors have conceptualised, developed, and created. As highlights in our research work, these contributions shed light on the phenomenon that constitute the process of temporary use stabilisation. In parallel, this helps expand theorizing on the processes in temporary use as interpreted through the following processes and their associated theoretical concepts:

*Processes **in** Temporary Use*

- Processes of adaptation: collective action, social learning, adaptive capacity building, transitions
- Processes of professionalisation: synchronised and syncopated rhythmic trajectories
- Processes of communication: signs, the Semiotic Triangle, and the Signification Process

*Processes **of** Temporary Use*

- Processes of stabilisation: entrainment of temporalities and their synchronised/syncopated temporal trajectories as well as rhythmic bundles of conditions

In addressing research question one, research questions two and three support the empirical and conceptual operationalisation of the work here. Publications two through four frame the factors that are key to temporary use stabilisation and respond to research question two. This includes the consideration of processes in, and of temporary use. This also derived conditions from literature that were empirically and analytically assessed through fuzzy-set Qualitative comparative Analysis (fsQCA) methods. Regarding research question two, all five contributions address factors (process and/or conditions) that are integral to the explanation for temporary use stabilisation. Publications three and four foreground the articulation of temporality to address research question three. Table 4 breaks down the conceptual and empirical relevance of each contribution undergirding this dissertation with '+' indicating degrees of relevance and '-' as not addressed. For instance, '+++' is highly relevant.

Source: Original

Publication	Conceptual & Analytical Constructs				Empirical Depth
	Adaptation *collective action, social learning, adaptive capacity building, transitions*	Professionalisation *synchronised and syncopated rhythmic trajectories*	Communication *signs, the Semiotic Triangle, and the Signification Process*	Stabilisation *entrainment of temporalities*	
Research Highlight: #1 plaNext (pN)	+++	-	-	-	++
Research Highlight: #2 Urban Planning (UP)	-	+	+++	-	+++
Research Highlight: #3 Urban Research & Practice (URP)	+	+++	-	+++	+++
Research Highlight: #4 Cities	+	+++	-	+++	+++
Research Highlight: #5 Canadian Cities in Transition (CCIT)	+++	-	-	-	+

Table 4. Breakdown of conceptual, analytical, and empirical relevance of the dissertation contributions.

The first and fifth publications (#1 pN and #5 CCIT) explore and explicate the social dynamics and policy direction that help communities build capacity for adaptive management. The latter is often highlighted as a key factor in catalysation of temporary use, but not necessarily considered in relation to processes of stabilisation. By framing the local-level processes of social- or policy-learning and action as path-creating dynamics, these contributions reason that adaptation facilitated through planning and management responses are vital factors in sustaining and stabilising temporary uses. To spotlight contrasting orientations of how this could happen, the initial publication (#1 pN) elucidates the more complex negotiations through social learning amongst temporary users in establishing and stabilising temporary use. The last publication (#5 CCIT) illustrates this through examples of progressive policy-crafting and citizen initiatives, which articulate opportunities for temporary and adaptive (re)use. These contributions discuss temporary use stabilisation in the explicit context of planning and redevelopment programmes or policies. Moreover, conclusions are forwarded in these publications for adaptive frameworks in and multi-level perspectives for confronting socio-economic transitions and urban sustainability goals to address climate change.

The second publication (#2 UP) steps back in relation to the other contributions to frame how temporary use stabilisation might be discursively observed and interpreted. A socio-semiotic lens and bibliometric analyses are used to assess the evidence of temporary use stabilisation through a “Temporary Turn” in scholarly discourses. The analysis on the finer-grained literature research conducted in relation to previous studies on temporary uses that have become permanent or stabilised. This reveals gaps and weaknesses in how scholars are studying temporary use and recommends methodological and conceptual expansion in research. As well, this contribution provides the conceptual justifications for the third and fourth publications (#3 URP and #4 Cities).

The conceptual elaborations taken up in the final contributions argue for a shift in interpreting temporary use stabilisation through temporal concepts other than those anchored by “duration” and “permanence”. This draws on concepts such as “temporality” and “rhythmanalysis” to uncover the spatial implications of different stabilisation trajectories. To support the theoretical frameworks for these two contributions, fsQCA are pioneered to untangle the configurational patterns of conditions that help stabilise temporary uses. These are structured by a framework of key and interacting conditions helping stabilise temporary use. This framework draws inductively on the literature review conducted in the second publication.

The cumulative insights from these contributions provide stepwise interpretation of how stabilisation takes form through multiple processes and that weave through multiple realms of (inter)action. What also comes out of this progression of publications and thinking are critiques for the limited methodological breadth of studies on temporary use. Questions are also raised in relation to the range and appropriateness of theories and concepts currently used to understand and explain processes of temporary use—such as stabilisation. This also lays the ground work for the theoretical arguments raised in this dissertation a critical realist approach to explaining temporary use stabilisation by means of the temporalities that characterise diverse processes.

4.1. #1 plaNext (pN)

Chang, R. A. (2018). Temporary Use & Collective Action: How Urban Planning Practises Contribute to Adaptive Capacity Building for Economic Resilience. PlaNext - Next Generation Planning, 7, 82-99. https://doi.org/10.24306/plnxt/51

Status: Published in 2018 as an original and open peer reviewed article for the journal plaNext.

Research Summary:

This publication…

- draws on concepts from regional studies and economic geography to introduce practises and processes for planning, temporary use, and economic development through an evolutionary and adaptive resilience framing;
- addresses epistemological challenges in transferring the concept of 'resilience' from the ecological to social realm by investigating possible explanatory and analytical advantages;
- summarises literature discussing 'transition' in relation to the resilience of economic and regional development;
- links discourses on regional and economic 'transition' to local-level mechanisms of temporary use advanced in planning studies;
- reasons and illustrates that there are linkages between longer term regional and economic transition to shorter term, local-level, and planning mechanisms embodied in temporary use policies, instruments, and activities within general contexts of urban regeneration and specifically the German context of economic and industrial re-structuring;
- introduces the concept of Zwischennutzung or interim use as an example of temporary use and mechanism in planning for adaptive capacity building;
- considers how temporary uses catalyse (social) learning and experimentation as tendencies towards building adaptive capacity;
- identifies, analyses and discusses practises of collective action that contribute to adaptive management that make use of competencies of experimentation and social learning;
- introduces the temporary use policy and programme ZwischenZeitZentrale and the case study of Plantage 9 within the historical and contemporary context of the Bremen (GE);
- discusses the collective action as well as the extent of experimentation and social learning through data collection and analysis (document analysis, interviews) conducted between 2015 and 2018;
- explicates the adaptive management and design that relates the socialities (community of temporary of users) to the materialities (vacant structures) of temporary use;
- highlights challenges in facilitating collective action through temporary use; these include navigating political tensions and regulatory limitations, mutual learning and exercises in decision making within group contexts, developing understanding and literacy for technical and structural regulations involved in adaptive reuse, and exceptional circumstances – this is not representative of the majority of temporary uses in Bremen;
- acknowledges the methodological deficiencies through this investigation on adaptive and evolutionary resilience through a micro-level case study of temporary use;
- concludes that collective action embodied in temporary use can enhance adaptive capacity at local levels of economic development;
- concludes that an adaptive and evolutionary resilience framing of can be useful in explaining social processes of transformation.

Keywords: Evolutionary resilience, experimentation, social learning, adaptive capacity, temporary use, Bremen

Extent of Original Contribution:

- conceptualising and formulating the overarching research and manuscript aims,
- designing and developing of methodology and analytical framework,
- conducting and curating data collection and analysis,

- preparation and creation of manuscript draft and presentations,
- preparation and creation of manuscript amendments in response to critical commentary during processes of review as well as pre-publication,
- engaging as corresponding author during review and publication processes,
- managing the planning and coordination of the research and manuscript activities and publication.

4.2. #2 Urban Planning (UP)

Chang, R. A. (2021). How Do Scholars Communicate the `Temporary Turn' in Urban Studies? A Socio-Semiotic Framework. *Urban Planning*, *6*(1), 133-145. https://doi.org/10.17645/up.v6i1.3613

Status: Published in 2021 as an original and double-blind peer reviewed article in the special issue "Innovations and Development in Urban Planning Scholarship and Research" of the journal Urban Planning

Research Summary:

This publication…

- questions the potential for a 'Temporary Turn' (Stillwagon & Ghaziani, 2019) in urban studies through an analytical response that pioneers bibliometric analyses and semiotics in relation to 'temporary use;'
- scrutinises the increasing popularity of temporary use in scholarly discourses and theorizes this trend through a Gottdiener's understanding of socio-semiotics (1984);
- summarises literature research on temporary use qualitatively and quantitatively, as well as through text and visuals;
- sheds light on the titular expansion for events and activities that characterise temporary use;
- relates the proliferation of titles for temporary uses as street-level practises to keywords as signs in scholarship by drawing on semiotics;
- analyses the proliferation, abstraction, and stabilisation of temporary use as concept by means of the 'Signification Process' and of 'the Semiotic Triangle' (Ogden & Richards, 1966; Gottdiener, 1984; Li, 2017); elements of the latter are 'the referent', 'the signifier,' and the 'signified;'
- highlights sequential patterns in how new signs are (re)interpreted through multiple signification processes that contribute to the institutionalisation and transfunctionalisation of temporary use;
- discusses the political economic undertones that are sequentially and re-iteratively channelled through discursive processes of temporary use;
- presents the step-by-step methodology beginning with literature research queries, and running through varieties of filtering and finally software assisted, bibliometric analysis (co-word and co-citation) of keywords and citation; the application used for latter is the *biblioshiny R-package* and the *Biblioshiny* interface (Aria & Cuccurullo, 2017);
- delineate cumulative keyword growth (draws on appearances in titles, abstracts, and keywords from publications between 2007 and 2020)
- maps, thematically, 500 of the most common and co-occurring keywords – following 'temporary use,' 'Temporary Urbanism' and 'Tactical Urbanism' characterises the next most common keyword with highest number of keyword co-occurrences;
- concludes that the disproportionate reliance on qualitative analysis through singular, in-depth case studies requires attention and encourages conceptual path-dependency in relation to temporary use;
- confirms the evidence of a 'Temporary Turn' (Stillwagon & Ghaziani, 2019) in urban studies that is polysemic and politically economically steered;
- recommends more critical and less entrenched manners of investigating and positioning temporary use that employ alternative theories and a greater diversity of methods.

Keywords: bibliometrics; socio-semiotics; temporary turn; temporary use; urban studies

Extent of Original Contribution:

- conceptualising and formulating the overarching research and manuscript aims,
- designing and developing of methodology and analytical framework,
- conducting and curating data collection and analysis,
- preparation and creation of manuscript draft and presentations,
- preparation and creation of manuscript amendments in response to critical commentary during review processes as well as pre-publication,
- engaging as corresponding author during review and publication processes,
- managing the planning and coordination of the research and manuscript activities and execution.

4.3. #3 Urban Research & Practise (URP)

Chang, R. A. (2022: accepted and in publication) Rhythmic Processes of Temporary Use: Understanding Spatially Detached Stabilisation through Fuzzy-set Qualitative Comparative Analysis. *Urban Research & Practice*. Advance online publication. https://doi.org/10.1080/17535069.2021.2012715

Status: Accepted as an original and double-blind peer reviewed journal article in Urban Research & Practice in 2021. Anticipated for publication in 2022.

Research Summary:

This publication…

- seeks to support a more nuanced understanding of temporary use spatially detached stabilisation processes influenced by processes of professionalisation through a temporality lens;
- addresses methodological gaps in research and follows a set-theoretic, as well as multiple- and cross-case approach to analysing temporary use processes by means of a fuzzy-set Qualitative comparative Analysis (fsQCA);
- highlights limited theorisation on temporary use stabilisation that have been defined by 'duration;'
- synthesises temporal concepts of *trajectories* (Andres & Kraftl, 2021), *rhythmic bundles* (Chen, 2016), *institutional rhythms* (Blue, 2019) or more broadly *rhythmanalysis* (Lefebvre, 2004) to theorise how temporary uses stabilise;
- accounts for spatially detached stabilisation (SDS) processes that differ from stabilisation processes that are fixed to single sites;
- hypothesises that processes involving spatial and functional resources or needs as key and interacting conditions for stabilisation;
- advances the re-articulation of the different stabilisation processes as 'syncopated' for detached from sites and 'synchronised' for processes attached to sites;
- draws on urban planning and geography literature examining temporary use stabilisation in processes of urban regeneration to inductively develop an analytical framework of seven factors that support temporary use stabilisation (entrepreneurial management, risk perceptiveness, adaptive capacity, interactive attachment, municipal support, functional compatibility, and spatial affordance);
- develops the analytical framework of factors with expectations, set definitions, and fuzzy-scale calibration; these structure the set-theoretic analytical methods;
- outlines coding and Intercoder Reliability (ICR) procedures for the processing of 53 transcripts from 40 case studies in Bremen (GE) and Rotterdam (NL);
- presents the analysis results and limitations from the calibration methods that make use of the software Tosmana;
- discusses the results from two fsQCA models that spotlight and confirm spatial affordances and functional compatibility that support temporary users' motivations to adapt or professionalise in addition to spatial concerns as tendencies for SDS;
- concludes that rhythmanalytical framing is an effective means of explaining less visible stabilisation processes and meaningful extension of temporal considerations for temporary use;
- successfully pioneers fsQCA methods in multiple and cross-case approaching to studying temporary use.

Keywords: Temporary Use; spatially detached stabilisation (SDS); fuzzy-set Qualitative Comparative Analysis (fsQCA); Rhythmanalysis; urban regeneration

Extent of Original Contribution:

- conceptualising and formulating the overarching research and manuscript aims,
- designing and developing of methodology and analytical framework,
- conducting and curating data collection and analysis jointly with co-researchers,
- preparation and creation of manuscript draft and presentations with jointly co-researchers.

4.4. #4 Cities

Chang, R. A., & Gerrits, L. (Resubmitted and under Review). What stabilizes temporary use? A qualitative comparative analysis of 40 temporary use cases. *Cities*.

Status: In review as an original and double-blind peer reviewed article in 2022.

Research Summary:

This publication manuscript…

- explores possible configurations of combination that support processes of spatial stabilisation driven by processes of professionalisation for temporary use;
- seeks to add to literature on comparative, multiple- and cross-case studies of temporary use by making use of fuzzy-set Qualitative Comparative Analysis (fsQCA);
- extends literature that considers processes of temporary use in relation to longer-term processes of urban change;
- draws on rhythmanalytical trajectories (Chang, 2022; Andres & Kraftl, 2021) to discern 'synchronised stability' as processes of temporary use stabilisation that are fixed to a single site over a longer duration;
- reasons that permanence should not be the only measure of successful temporary use;
- draws on discussion in urban geography and planning literature to highlight and propose an analytical framework including seven of the most common conditions associated with temporary uses that have attained permanence (risk perceptiveness, entrepreneurial management, interactive attachment, adaptive capacity, functional compatibility, municipal support, and spatial affordance);
- assesses for the centrality of risk perceptiveness and entrepreneurial management in the combinatorial tendencies supporting stabilisation;
- outlines data collection and processing methods including coding, Intercoder Reliability (ICR) procedures for 53 transcripts representing 40 temporary use case studies;
- explicates the pioneering analysis involving translation, calibration, and minimisation informing two models of fsQCA;
- discusses results that associates spatial stabilisation with temporary use intermediaries and milieus and prioritise the overwhelming influence of no singular condition;
- demonstrates that spatial affordance is most consistently represented in these combinations, but that the entrepreneurial socialities and the functional programming afforded through spatial resources are most helpful in spatial stabilisation of temporary uses;
- highlights that in the absence of municipal support, intermediaries are instrumental to spatial stabilisation processes;
- presents evidence that challenges common claims on risk as an issue for temporary users;
- concludes that combinations of conditions support temporary use stabilisation;
- concludes the need for more QCA studies to help untangle contradictions in the analysis when all conditions are considered in a single model as well as through the mirrored relationship demonstrated in models focusing on risk perceptiveness and entrepreneurial management;
- concludes that while certain configurations of conditions support spatial stabilisation, this might differ from other trajectories of stabilisation.

Keywords: Temporary Use; fuzzy-set Qualitative Comparative Analysis (fsQCA); spatial stabilisation; entrepreneurial management; risk perceptiveness; urban regeneration

Extent of Original Contribution:

- conceptualising and formulating the overarching research and manuscript aims,
- designing and developing of methodology and analytical framework jointly with co-author,
- conducting and curating data collection and analysis jointly with co-author,
- preparation and creation of manuscript draft and presentations jointly with co-author,
- drafting of section "Introduction,"
- drafting of section "Conditions Influencing Stabilisation,"

- drafting of section “Research Approach & methods” with co-author,
- drafting of section “Results” with co-author,
- drafting of section “Conclusions” with co-author,
- preparation and creation of manuscript amendments in response to critical commentary during processes of review as well as pre-publication with co-author,
- engaging as corresponding author during review and publication processes,
- managing the planning and coordination of the research and manuscript activities and execution.

4.5. #5 Canadian Cities in Transition (CCIT)

Holden, M., & Chang, R. A. (2020). The Ups and Downs of a Sustainable and Climate Resilient Development Path in Canadian Cities. In T. Vinodrai, R. Walker, & M. Moos (Eds.), *Canadian Cities in Transition: Understanding Contemporary Urbanism* (pp. 397–416). Oxford University Press.

Status: Published as a blind peer reviewed book chapter in 2020.

Research Summary:

This publication…

- seeks to introduce "urban resilience" as a means of smoothing the lines of tension that Canadian cities face in achieving climate resilience and urban sustainability goals;
- illustrates the lines of tensions by means of case studies relating to housing and flooding and elucidates urban resilience through dynamic opportunities embodied in initiatives and uses that are temporary or catalyse functional and social change;
- details the negative impacts from urban sprawl on land use and affordability in suburban areas of development;
- highlights policy changes necessary for households' locational decision making and compacter and denser (sub)urban form that could address the effects of urban sprawl;
- critically discusses potential challenges in aiming for policy changes that might inspire or exacerbate the affordability of land and housing in cities;
- discusses trends responding to the 'Missing middle' or residential options between apartment and single detached dwelling typologies embodied in 'accessory dwelling units,' triplexes, quadruplexes and low-rise apartment buildings;
- highlights concern for the decrease in quality of living that might follow such housing policies;
- reasons that the neighbourhood scale is a starting point for urban design responses;
- argues that resilient approaches characterised by adaptive, pre-emptive and evolutionary approaches to designing public strategies and streetscapes is a more effective way to further address urban sustainability challenges;
- illustrates a continuum of policies and processes that support resilient and adaptive management initiatives inherent to recent coastal flooding strategies and land use planning;
- elucidates climate adaptation as a part of urban planning processes informing a Coastal Flood Adaptation Strategy and the development to improve the effectiveness of policy development and participation for local residents;
- discusses urban resilience planning processes that integrates temporary use as a form of adaptive experimentalism in land use planning and citizen-driven greening efforts;
- elaborates on the integration of temporary use into the redevelopment plans to increase innovation and green industries on industrial lands, while also better integrating these areas into surrounding urban landscapes;
- introduces incomplete and bottom-up streetscape initiatives that adapt land use through depaving;
- concludes that Canadian cities are heavy contributors to the lack of progress in confronting climate change and sustainability challenges, but could address this through aims to build urban resilience capacity;
- concludes that dynamic concepts represented by experimental and adaptive initiatives, such as planning to accept and prepare for climate risk or embrace and innovate with (temporary) reuse of land are ways forward in building urban resilience capacity.

Keywords: resilience, urban sustainability, sprawl, urban resilience planning, adaptive management, adaptive experimentalism

Extent of Original Contribution:

- conceptualising and formulating the overarching research and manuscript aims jointly with co-author,
- preparation and creation of manuscript draft and presentations with jointly with co-researcher,

- drafting of section “Vancouver: Adaptive Experimentalism in False Creek Flats,”
- Drafting of section “Depave Paradise: Adapting Ecologies of (In)complete Streets,”
- preparation and creation of manuscript amendments in response to critical commentary during processes of review as well as pre-publication.

5. DISCUSSION & OUTLOOK

“Nous n'avons conscience de la plupart de nos rythmes que lorsque nous commençons à souffrir d'un dérèglement. C'est dans l'unité organique, psychologique et sociale du « percevant » orienté vers le perçu, c'est- à-dire vers les objets, vers les alentours et vers les autres personnes, que se donnent les rythmes qui composent cette unité. Une analyse est donc nécessaire pour les discerner et les comparer.”

"We are only become aware of most of our rhythms once we begin to suffer from a disturbance. It is in the organic, psychological and social unity of the "perceiver" oriented towards the perceived, that is, towards objects, towards the surroundings and towards other people, that the rhythms that make up this unity are given. An analysis is therefore necessary to discern and compare them.”

(Lefebvre & Régulier, 1985, pp. 194–195; original translation)

In the previous section, I introduced and summarised the highlights from five publications and manuscripts that provide insights and answers to the research questions posed at the start of this dissertation. These are namely: How does temporary use stabilise? Which I support by further asking: Which factors are key to the explanations of how temporary use stabilises? And, how can we explain temporary use stabilisation and supporting factors through a temporality lens?

The work presented here demonstrates a possible means to make sense of temporary use stabilisation through a temporality lens. Moreover, it illustrates how a temporality lens sharpens the multitudes of factors that play diverse and moving parts in processes of stabilisation. In light of expanding uncertainty that stymies all manners of planning, which in turn fuels the rising interest in temporary uses, this dissertation is a responsive exploration and invitation for deeper reflections on the (temporal) conventions in planning that are produced or reproduced through current debates on temporary urbanism.

Exploring how temporary uses stabilise is an investigation of processual temporalities; it is also an engagement with temporal and rhythmic interactions that generate urban enduring transformation. Through the work here, I advance an understanding of the latter as the unfolding of temporal patterns, at multiple levels, set through various trajectories and rooted through rhythmically bundled conditions that entangle over time. These patterned temporalities can be explicitly analysed through the rhythms of spatial (re)production that is channelled through the adaptability of local level interactions. These generate (social) learning, experimentation and capacity building (#1 pN and #5 CCIT) as integral dimensions of adaptive management, as well as enhanced education for how policy and regulations function, are created or implemented. Furthermore, as local level processes, they are transpositions of the street-level and staccato interventions of temporary uses that derive new regularities and paces in temporalities. The resulting new regularities and paces facilitate the emergence of new intermediary professions, which shape diverse trajectories of spatial stabilisation supporting temporary use practises and policies (#3 URP and #4 Cities). These trajectories of stabilisation are not contingent on singular conditions. Rather, the configuration of conditions present and absent, or how they are rhythmically bundled could set pre-conditions for their spatial trajectories. Specifically, the conditions for spatial affordance as well as concerns for functional programming

are key—in particular through intermediaries when public administrative support is lacking. The trajectories of these temporalities do not only obliquely transpose processes of adaptation and professionalisation through layers of temporalities, but also cyclically generate and regenerate, at a higher level, symbols in scholarship (#2 UP). As a result, the parallel temporalities of staccato interventions along with temporal trajectories of adaptation and professionalisation, synchronise with temporal cycles of communication. Simultaneously, these re-enforce the softer and less tangible forms of temporary use stabilisation in order to institutionalise new meanings and definitions for temporary use and its stabilisation. Not only do new meanings for temporary use become reinforced, but the iterative ways through which these new meanings and definitions are created – in relation and conjunction to the real phenomenon they address – further stabilise temporary use in theory and in reality. These altogether bring to bear on explications of how temporary uses stabilises could be more than permanence and also enduring.

What is also of note is a revelation that comes out of this ordering of stabilisation processes. This highlights potential methodological reasons for why bias towards less spatially obvious trajectories of stabilisation are overlooked (#2 UP, #3 URP, and #4 Cities). The sources for this lack of awareness are possibly grounded in unchecked methodological conventions. Often these are tied to the restrictive considerations for time anchored by the notion of duration. These deserve questioning and induce opportunities for alternative re-interpretations and methodological studies of temporary use and its processes. Aside from this compacted summary of the contributions as responses to the research questions are broader revelations for how processes of temporary use and time should be understood.

In this next section, I take up the task of synthesising the findings and outcomes of the contributions and reflect on what the communities for urban (planning) studies, complexity studies, as well as policy and practise might take away from the research. I structure the discussion into three parts through which I first review the theoretical interpretations and discuss the methodological implications for those studying temporary use processes and elucidate how time— and temporality specifically, require more attention. I follow this by considering what urban and complexity thinkers might take away from these insights. In subsequent sections I present contemplations on the utility of these findings for practice and policies before I conclude with limitations of this work and propose how further work could improve or develop on my dissertation.

5.1. PROCESSES: TEMPORALLY REFRAMED

To complement existing studies on processes this dissertation has attempted to illuminate more clearly the extent to which processes and practices in urban settings are also affected by an “increasing attention to the variety of temporal logics” (Adam, 2003, p. 65). Current conceptualisations for processes of temporary use, however, still need to be cultivated. This is brought to bear when we fail or weakly account for less tangible contours of stabilisation that enmesh in contextual processes of change. Put simply, this challenge comes to the fore through our attempts to relate street-level interactions or trajectories of temporary use stabilisation to broader processes such as urban regeneration. We see the outcomes in the limitations of justifications anchored in singular case studies or events for how temporary uses stabilise. These tend to focus on narrow realms such as social action and institutionalisation or physical and material adaptation. A more integrated and encompassing understanding of how processes of stabilisation occur accounts for multiple orders of

various temporalities, and seeks out bundled instead of singular conditions of concern. This re-interprets processes in temporary uses as stratified and fettered by configurations of conditions; some of which, when aligned and entrained through their temporalities, help to stabilise temporary use. Moreover, these do not unfurl through even lines, but are threaded together through more (re)cursively synchronised or entrained tapestry of processes that are characterised by uneven and diversely weighted trajectories. By perceiving processes of stabilisation through this lens, we allow for and develop a more commonly accessible and temporal vernacular. This can help in recognising and pronouncing the asymmetrical and messy realities of temporary use phenomena that relate to urban regeneration and transformation. This also brings to light how intellectually wanting it is to analyse temporary use processes as simple and dualist representations of ephemeral versus permanent.

I argue through various approaches to studying processes in temporary use that stabilisation subsumes multi-level and entangled temporalities. When we consider the street-level and embedded interactions promoted by practices and policies, then stabilisation is threaded through both obvious and obscure impressions for us to trace. The urban regeneration programmes in the context of Bremen illustrated clear temporal imprints through the structures that were adaptively reused as well as the delegation of clear intermediaries who profited by professionalising from temporary use (#1 pN, #3 URP, and #4 Cities). As an illustration of collective action engaged with intermediaries that had professionalised through temporary use, temporary users were able to innovate the way through which they temporarily appropriated and adapted space. This demarcated a spatial trajectory of stabilisation characterising temporalities of synchronised temporary use with space. This innovation enabled them to sustain their tenancy while also developing the skills and competencies to negotiate the regulatory structures supporting their futures at Plantage 9. In a more peripheral approach to urban regeneration through the innovative urban redevelopment of industrial lands and adaptive re-use, we find less punctual but explicit and sustaining policy language or concrete changes by means of depaving (#5 CCIT). This presents both top-down and bottom-up initiatives that affect or reverse the material temporalities of space. Regarding the depaving, we see how interventions punctuate not only sealed surfaces, but adapt and stabilise more material and tangible temporalities. In contrast, through policy development for industrial lands, we see the possibility of interpenetrating temporalities of activities and space stabilised in the time- and rhythm-reckoning function through the policy instruments. This underscore the ex-ante manner through which policy and regulation preserve the possibility for multiple and interacting temporalities of and at a specific industrial site. Comparatively and in Rotterdam, exploring stabilisation does not start with such clear traces of temporalities. Instead, the coherence of temporalities fuelled by many temporary users crescendo through the milieus of temporary uses. The trajectories of these temporalities are facilitated by spatial affordances, but further encouraged by capacities for functional programming and entrepreneurial development amongst other conditions (#3 URP and #4 Cities; Keilewerf BV, 2019; Van Boxel & Koreman, 2019). What this confirms are the increasing relevance of intermediaries or alternative representations for planning and regulatory competencies when planning is not present (Andres & Zhang, 2020). This counters problematisations with risk (Martin et al., 2019) and begs for more critical study of its relationship to processes of professionalisation. In comparison to the Bremen case studies, the cases in Rotterdam also show contrasting vectors in agency (more bottom-up than top-down) but demarcate, nevertheless comparable processes of stabilisation for temporary uses. Their countering trajectories to urban regeneration and temporary use policies are consolidated in the integration of temporary uses into newly crafted incubator policies or hub and area development strategies (Dellot et al., 2018; Gemeente Rotterdam [City of Rotterdam], 2017a, 2017b; M4H, 2017). In more co-constructive terms, processes of temporary use stabilise in discursive realms, too. The temporalities here express more recursive and narrative patterns

supporting a temporary turn (#2 UP). This further echoes the economically strained messages reflected in urban development (Bragaglia & Caruso, 2020; Colomb, 2012; Honeck, 2018) and also (re)generate scholarly symbols of their own.

What these snakes and ladders linkages through processes of adaptation, professionalisation, and communication provides, is a canvas upon which we perceive how temporal processes compound. How these temporalities unfold and fold into each other demonstrate their own logic of reckoning with time. The concept of temporalities and principles of rhythmanalysis help to identify and describe the time-relevant qualities they present. These might be encouraged by certain programmes or strategies, but the fashion through which they advance are not governed by master plans nor strategies. Instead, they advance their own and alternatively effective form of time tracking embodied in "know-how knowledge for the structuring, ordering, synchronizing and regulating of social life" (Adam, 2006, p. 121). This social life is within buildings, on streets, amongst other stakeholders, and in exchange with diverse interlocutors. Proponents of temporary use have come to understand the temporal re-configurations of functions, which can both make use of existing spaces or be designed and delegated for created spaces. They are the contributors or helmspersons who calibrate the extent of coherent stabilisation (in theory and in reality), which temporary uses take on. In other words, they share lessons through which we can develop the capacities to articulate phenomena temporally. These capacities enable us to perceive how temporalities tie together, or into each other, and are products of sophisticated cultures that are not intent on allocating time; but instead commit through action and space to choose or distribute time (Lynch, 1972).

5.1.1. TEMPORAL TERMS FOR URBAN SCHOLARSHIP

The implications from this dissertation for urban scholars, however, go beyond stating the possibility to explain processes of temporary use stabilisation through a temporality lens. Initially, these findings confirm existing claims that our understandings for temporality, temporariness and time in urban settings are far from developed (Andres & Kraftl, 2021; Lehtovuori & Koskela, 2013; Lehtovuori & Ruoppila, 2012; Madanipour, 2017). But a more meaningful lesson is the reminder to reflect on the ironic awkwardness in attempting to plan for uncertainty and answer to "questions [about] traditional models of planning and development and […] alternative[s] for when the latest models cannot be achieved" (Andres & Zhang, 2020, pp. 7–8). If we have courage to take up this invitation for introspection, it becomes clearer that planning with regards to time is more "the desire to bridge the gap between what happens and what can be done" than it might be "an antidote to the uncertainties generated by the future and a perceived insurance against its contingencies" (Davoudi, 2012, p. 435). Moreover, the effectiveness of planning that is oriented towards the design of plans and policy might not be as great as the design of processes. The static temporalities bound to the outlines of administrative and plan-based boundaries might be efficacious in the preservation of functions and their space. But, however effective are these intents when the temporalities of these functions disappear? And how do we respond when temporalities through new rhythms emerge, but might appear mute to regulatory considerations because we lack the inherent aptitude to make sense of their developments? To what extent is it still helpful to focus on the designation of functions? Particularly in light of activities and functions that are transient, recurrent or migrant (Lehtovuori & Ruoppila, 2012). As they spread, such as the case through temporary uses, should we as urban (planning) scholars and practitioners also reconsider or even shift perspectives on what this means for scholarship and practice?

ADAPTATION: ANTICIPATING THROUGH TEMPORALITY

Some suggest that a shift in perspectives that might view urban temporalities and rhythms as points of entry into "seeing spatiality as a becoming" (Crang, 2003, p. 205). The emphasis here is not on stasis but the dynamic motions of change and how or through which patterns they relate to planned and unplanned action. Conventional urban design and planning has followed more functional mandates to design, plan and construct for a durational understanding of use. Current planning debates on extreme inner-city vacancy caused by disruptions from the Pandemic (Krüger, 2020) highlight the tangible and spatial challenges when we are too committed to singular temporal concepts. Extreme intents to plan and design for duration, result in empty building stock that cannot accommodate the flows of temporality. More earnest engagements with time and temporality in urban design means that buildings "should be planned with the possibility of transformation, so that a shopping mall can turn into a school or a museum into a temporary residence whenever it has to change its end use or needs more than one purpose simultaneously" (Barabara, 2014, pp. 226–227). Citizens and community initiatives have already found ways to shift their perspectives with regards to how time is considered in relation to space. Their actions, as foreground in the evidence of this research, demonstrate that processes of adaptation empower citizens and communities to accept more rhythmic trajectories for their activities and functions. This means that they might be less bound to specific and singular sites for fixed durations of time. Rather, values for learning are increasingly embraced. In learning with others, temporary users demonstrate the ability to become more literate with planning regulation and policies and make use of the temporal openings in vacant spaces and structures. Moreover, some become so regulatory literate, or competent in interacting with public administrative representatives and systems, as well as entrepreneurial sound (#1 pN) (Oswalt et al., 2013), that they are able to shift the temporal trajectories so that less detached or recursive trajectories of stabilisation become entrained into the lengthier temporalities of what is considered permanent tenancy (#3 URP). At the core of this, however, is a willingness and less threatened attitude towards the more discontinuous temporalities of temporary use, and the aptitude to discern or anticipate opportunities to switch to, or entrain into more continuous temporalities.

PROFESSIONALISATION: CAPITALISING ON TEMPORALITY

Shifting perspectives also have conceptual implications. On one hand, this generates attitudes that foreground extreme and flexible understandings of what Preda & Matei (2020) identify as ***time capital***. Value for time capital can be derived from not just durations but rhythms as well. This allows individuals and communities to govern or make decisions about the resource of time in order to achieve "other forms of capital prone to generate economic, social or cultural development at a societal level" (Preda & Matei, 2020, p. 119). To some extent, entrepreneurs and industry organisation have already grasped the opportunities here in that they are engaged or invested in temporary uses as a way to leverage financial benefits from the "fallow time" afforded by vacancy (Bishop & Williams, 2012a, p. 43). The advantage of this is that it could help reduce the likelihood of repossession for previously dormant sites (Bishop & Williams, 2012b). But, it also means that access to temporal decision-making is exclusive and likely unequal. As such, the concerns for "ways in which dominant regimes of capital are privatising and individualising time, and not just space" (Brigstocke, p. 153) are increasingly pertinent. This also aligns with concerns for the economisation of urban policy, as is the case in Germany; as such, it provides another extension to the "broad front" of an integrative urban development policy that should be bolstered (Altrock, 2014,p. 171). Current grapples with the COVID-19 Pandemic are confounding this process with concerns for social distancing (Caramaschi, 2021; Chang,

2021), but this might only be a delay in addressing concerns for fair access to time capital as opposed to its erasure in urban development. We should aim to engage with temporality in such a way that promotes operable and manageable strategies, while also encouraging us to value time as "an object of strategic management [that] cultivates ethics of care and intergenerational support based on a responsible perspective towards the future" (Preda & Matei, 2020, p. 122).

COMMUNICATION: MULTIPLICITIES & METHODOLOGIES FOR TEMPORALITY

I have further argued that the ways in which urban (planning) scholars have understood temporality through its conceptual formulation is enforced by methodological dispositions. These promote not only discursive patterns regarding temporary uses, but also constrain our capacities to re-think through temporality. For this reason, I main that perspectives in scholarship with hopes for productive centring on time or temporality should first understand and acknowledge the legacies of industrial era rhythms. This has potentially left us anchored to duration instead of rhythm, or more quantitively accessible or successful measures of time (Andres & Kraftl, 2021; Till & McArdle, 2015). A better orientation might be an interpretive approach to planning that respects "the existence of multiple times ranging from the rhythm of everyday life to the dynamics of glacial changes"; here, "time is seen as cyclical, with past, present and future being interlinked" (Davoudi, 2012, p. 435). This also recommends that we "draw on past memories and present experiences to shape future expectations" (Davoudi, 2012, p. 439) so that we connect the multiplicities of shaped spaces and temporal expectations. Temporal multiplicity comes from various levels of processes, and through a diversity of perspectives. As well, it comes from the multitude of measures we afford it – the very terms and adjectives we use to give it shape, value and presence. We could do well to earnestly consider the question of whether or not more diversity in time structures might better fit the needs of our diverse society. Or, expand our terminological and temporal repertoire in planning scholarship and practice, by considering rhythmanalysis or articulating time or temporality through its grain, period, amplitude, rate, synchronisation, regularity or orientation (Lynch, 1972). This promotes a non-Euclidean from of planning intended to identify potentials and opportunities through "the exploration of unknown and the search for novelty" instead of emphasising "the fear of unknown and the recourse to conformity" (Davoudi, 2012, p. 435). This also views planning and its processes (which include temporary use stabilisation) "as iterative rather than linear," which observes knowledge as "explicit and systematized as well as tacit and noncodified with no sharp distinction between 'expert' and 'lay' knowledge" (Davoudi, 2012, p. 437). This promotion and articulation of temporal awareness in scholarship and practises would contribute then to Davoudi's interpretive planning that values an "evidence-informed society" (2012, p. 437).

In turn, this demands that the knowledge we generate and communicate should not be stilted. So, treatments and conceptualisations regarding time and temporality should qualify time in its multitude of forms; they should pursue multiple approaches of study and be made "as explicit as possible" (Selig et al., 2013, p. 88; cf. Mitchell & James, 2001). We do ourselves injustices, by concentrating only on parameters such as duration or binary taxonomy of permanent or temporary. Instead, we could more productively take inspiration from other studies such as those delineated literally and visually through movements in space over time through time-geographic discourses (Ellegård, 2018; Thrift, 2005, 2006). Apart from embracing rhythmanalytical methods, we could also integrate and communicate time more intentionally in methods themselves, in order to allow for greater if not just as much sensitivity to time as we do place (Gerrits & Pagliarin, 2020; Pagliarin & Gerrits, 2020). These might build upon established methods that consider time

by analysing through event-sequences (Spekkink, 2016; Spekkink & Boons, 2016; Abbott, 2001), process-tracing (Schneider & Rohlfing, 2013) or longitudinal methods (Hassett & Paavilainen-Mäntymäki, 2013). These could also in a more comprehensive fashion integrate time and temporality into all domains of research design; these would address the philosophical, the conceptual, the methodological and the substantive domains so that the validity of the research in relation to time is thoroughly considered (Hassett & Paavilainen-Mäntymäki, 2013).

TEMPORALITY & COMPLEXITY

I have also drawn on complexity thinking to shape my theorisation, since it helps in structuring arguments and formulations for a temporality frame. Here, I prudently reflect that (urban) complexity thinkers might have some insights to take here as well. Portugali highlights already that there are potential research gaps to address in using complexity theories in urban studies (2012). A more thoughtful articulation of time through temporal qualities might help "create a better balance between the short- and long-term aspects of "cities as complex self-organizing systems" (Portugali, 2012, pp. 60–61). For example, a temporal vernacular could increase the precision through which we explore and study relationships between short- and long-term relationships of complex and urban systems. It could help frame how we pronounce specific elements and patterns in processes, such as in relation to feedback mechanisms that help stabilisation. The temporal lens could help articulate the simultaneous presence of negative and positive feedback dynamics. Negative feedbacks relate to how temporary uses stabilise by means of their temporalities that become entrained into existing or imposing temporalities. In other words, certain temporalities impose upon other and thus exercise a dampening effect. We see this in how broader processes with more influential temporalities draw in newer or more syncopated and rhythmic temporalities into their own. This is illustrated through instances in which policy or strategy formulations come after the proliferation of temporary uses. We could also observe this in how certain more syncopated temporalities such as those of temporary uses submit or negotiate themselves, with willingness, into to the temporalities of broader levels of development. Positive feedbacks introduced through temporary uses could be seen to amplify through how their interactions are integrated into programmes and policies. In other words, temporary users through their temporary activities inject new functional dynamics that feed-forward or introduce new (mixes) of functionalities into urban systems. In contrast to the negative feedbacks of the temporalities, the positive feedbacks in the social and spatial systems thus help gently "push [systems'] … dynamics into entirely new kinds of order" (Batty & Marshall, 2012, p. 34). These dynamics ultimately draw from other processes, such as adaptation, professionalisation and communication, to feed into new trajectories and temporalities of temporary use.

Finally, this dissertation has combined both qualitative and quantitative methods to support the conceptually analytical strengths of a temporality framing and rhythmanalysis. This is a step in responding to both qualitative and quantitative messaging of complexity thinking and highlight one of "many interesting links between social-theory-derived and complexity theories-derived interpretations of cities and urbanism" and especially regarding complexity-oriented thinking on urban planning and design (Portugali, 2012, pp. 60–61). What a temporality lens offers is not the argument for "one system replacing another" but the capacity to make explicit how "time control" and "temporal reach" affects through "interpenetration and mutual implication" (Adam, 2003, p. 74). Temporary use and its interactions ignite both sources and outcomes for effective urban regeneration. Similarly, urban regeneration is both context and impact from stabilising temporary uses. A temporal demarcation of how this relates rhythmically through processes of adaptation,

professionalisation, and communication to help stabilise temporary use underlines entrainment by means of rhythmic interpenetration and mutual implication.

5.2. PRACTICE & POLICY

In final reflections on what the findings here mean for practice and policy, I have tried to also respond to "wider questions in contexts where urban planning is not well represented as a profession" by shedding light on processes that link the formal and informal as well as the planned and unplanned; this ultimately leads to reflections on "how temporary urbanism is instrumentalised" (Andres & Zhang, 2020, p. 8). What is brought to the fore here are new capacities and competencies embodied in new stakeholders and professions. They have readiness and aptitude to become literate with planning regulations and processes so that they can broker temporary uses for themselves and on behalf of others. They also show us differences in "planning time" and "chronological time" that is "accelerated or contracted according to the experience that should be generated" (Barabara, 2014, p. 230). In other words, planning time as projected or represented through public administrative capacities is slower paced in comparison to the temporary users and intermediaries who, through collective action and social learning, build capacity for adaptation. This adaptation is not only in relation to structures, but also in relation to the shifting definition of roles and responsibilities that public administrations are demonstrating. These experiences are also embedded into the entrepreneurial wisdom that provide the operational acumen for temporary users to strike out with professional experiments that are transient and migrant, expressing both spatial attachment and detachment. These experiences are also oriented towards creating awareness for anticipatory conditions in which our senses for ***futures literacy*** might make "more effective use of the future [by depending] on simultaneously expanding and refining why and how anticipation is integrated into decision-making" (UNESCO, 2014, p. 10). Support and capacity building within public administrations to facilitate regulatory literacy of temporary users are a few of many integral dimensions (#1 pN, #3 URP, and #4 Cities). But this also means that public administrations must (re)consider how they are to engage with these new stakeholders and in which constellations. These could be integrated into public programmes such as was the case through temporary uses agencies or incubator policies. These could also shape the instruments, or socio-temporal technologies that "bring the future into the present" or consider "the preservation of present possibilities of choice and action for future use" (Elchardus, 1988, p. 53; cf. Bergmann, 1992).

An example of the former might be plans and strategy documents, or foresight methods whereas the latter are embodied in land reserves or designations for use cycles and temporary uses. These are also highlighted through the increasing relevance of processes models and designs that shape not only materialities and spatialities, but socialiaties of time, but also try to make them more visible for study and discussion. It is difficult for many to understand the abstract nature of time, unless they can see it in written or graphical form. So, reconceptualising time also means reconceptualising tools that help us envision or become aware of the multiple ways of approaching multiple futures. As well, these instruments are key in confronting tendencies to monopolise the generation of time capital. Recall here, that time capital refers to the ability to take advantage of time and convert it into other forms of capital. These might be embodied in firms or professionals that develop competencies or even secure the temporal and spatial access to shape how others (such as start-up temporary uses) might also benefit from time capital. Planning practice and policy must also be cognisant of opportunities to create productive foreclosures of time capital and preserve forms of "intangible" and "temporal" commons (Brigstocke, pp. 153–154). This temporal re-interpretation of

enclosures allows for, or facilitates access to primarily time, and secondarily, for those with limited resources but ideas and willingness to learn and experiment. This could be channelled through urban regeneration policies, calling for temporary use agencies or explicit delineations for temporary use (#1pN, #3 URP, #4 Cities, and #5 CCIT). Considering the diversity of cities, with their respective range of needs, urban policies that articulate temporally explicit or differentiated strategies could be more nuanced ways to empower cities and invite serve as responses to open questions raised by Zimmermann & Fedeli (2021) regarding how higher levels of government shape or sharpen national urban policies. When we consider how higher-level EU policies also shape and (financially) support urban regeneration and its relevant interventions such as temporary uses, then here as well are regional levels of the European Union also relevant (Altrock, 2014; cf. Zimmermann & Fedeli, 2021; URBACT, 2018).

Generally, there are also possibilities to better articulate and calibrate planning instruments and processes as time- and rhythm-reckoning systems and mechanisms. The concept of time-reckoning embodies in planning policies and instruments is made clear in how it sets schedules for processes or the creation and implementation for policies and their improvements. What the integration of rhythm-reckoning could look like would be the more emphatic consideration for rhythms (e.g. regularity of activities, or synchronised or syncopated ordering of uses). These would not only designate multiple rhythms through explicit permission for temporary use (#5 CCIT), but might take inspiration from articulations on extensions, use-cycles, and Leaseholds over time (Dransfeld & Lehmann, 2008; Windemer, 2019) to address less certain end-of-life phase of certain policies (Windemer, 2019). These might also be relevant when considering the lifecycles of policies and programmes that might overlap the different lifecycles of politics. When we consider how many programmes stop when the advocating or majority (coalitions) are no longer administrating, then we also see tensions and conflicts in how the diverse rhythms and their ends are not considered in smoothly coordinated for political transitions.

Source: Original

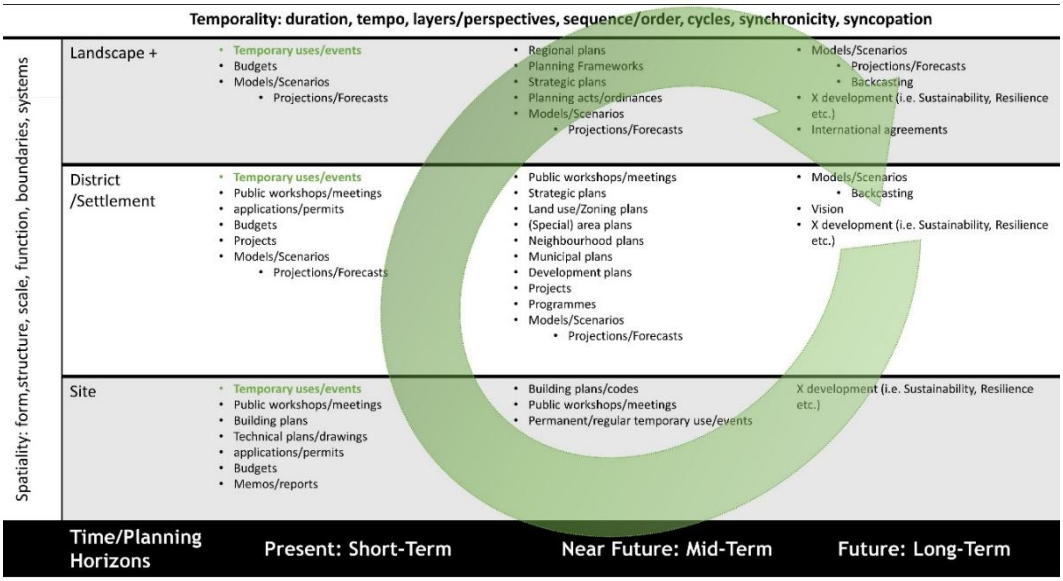


Figure 28. Layered temporalities of governance.

This could also help emphasise or anticipate opportunities to tune the multiplicity of processes, which first requires that practitioners develop a sensitivity to the temporal textures of multiple and layered processes. As illustrated in Figure 36, macro-level urban transformations could be understood to have their own temporal lifecycle. This both draws from, and imposes upon meso- and micro-level policies and strategies.

By implementing policies and programmes such as urban regeneration, temporalities at meso-level processes can plan or design for the provision of micro-level pockets of time-capital; these could both contextualise and catalyse shorter or punctual interventions of temporary use that are illustrated in Figure 37 on the next page. The forward moving patterns of syncopating uses might proliferate and in aggregate provide the rhythmic momentum to synchronise with meso-level processes. This in total can become entrained and subsumed into the broader change through meso- and macro-level processes.

Within the realms of politics and governance, there is also need and urgency to consider who is subject to and in need of support for temporally delimited vulnerability (Bopp & Bercht, 2021). What is important here is to become sensitive to the urgencies of all vulnerabilities and confront the ongoing and ethical dilemmas in discussing and deliberating what this means for victims of the immediate future, but also those of the mid- or far-future such as those threatened by catastrophes with longer horizons such as climate change (Bopp & Bercht, 2021). Forms of politics or governance that are temporally aware could address challenges or barriers put forth through structures and dynamics of power. Suggestions embodied in "democratically elected guardians of the future" (Adam, 2003, pp. 74–75) or representatives; these might be temporary users for those under pressure from temporally precarious circumstances. Youth could also be the initiators for such efforts, as we are already starting to see through initiatives such as the Fridays For Future movement (Wallis & Loy, 2021). As such, concerns with ***chronopolitics*** could be confronted through avenues and agencies with responsibilities and jurisdictions to promote or prevent unproductive or discriminatory attitudes toward certain conceptualisations of time (Wallis, 1970).

Practice and policy also include the culture and art of design. This is relevant for new structures and spaces, which could be conceptualised so that their life-spans are not limited to singular programmes. In this sense, a shift in design thinking might also rely more the design of arrangements and agreements that are informal and conducted between owners and users. Leasehold agreements and contracts could be legislatively stipulated as options to help reduce risk in setting up temporary uses and clarifying subsequent temporal conditions. Public administrative representatives, are here still key in ensuring and monitoring the appropriate interpretations and implementation of such agreements. A few examples were highlighted earlier from the German planning instruments. To this, I add examples such as urban development or redevelopment plans and contracts (Dransfeld & Lehmann, 2008). But above all, what is key to facilitating such exchanges in relation to temporary use stabilisation is that practitioners and policy administrators acknowledge the need and demonstrate willingness to work with temporary users. Temporary users still need support in their processes of adaptation or professionalisation, which eventually allow them to develop concepts and capacities to stabilise their uses and activities (#1 pN, #3 URP, and #4 Cities). The accompaniment of

intermediaries and temporary use agents in such processes are always effective (#3 URP, and #4 Cities), but that is not a replacement for the temporalities of public administration.

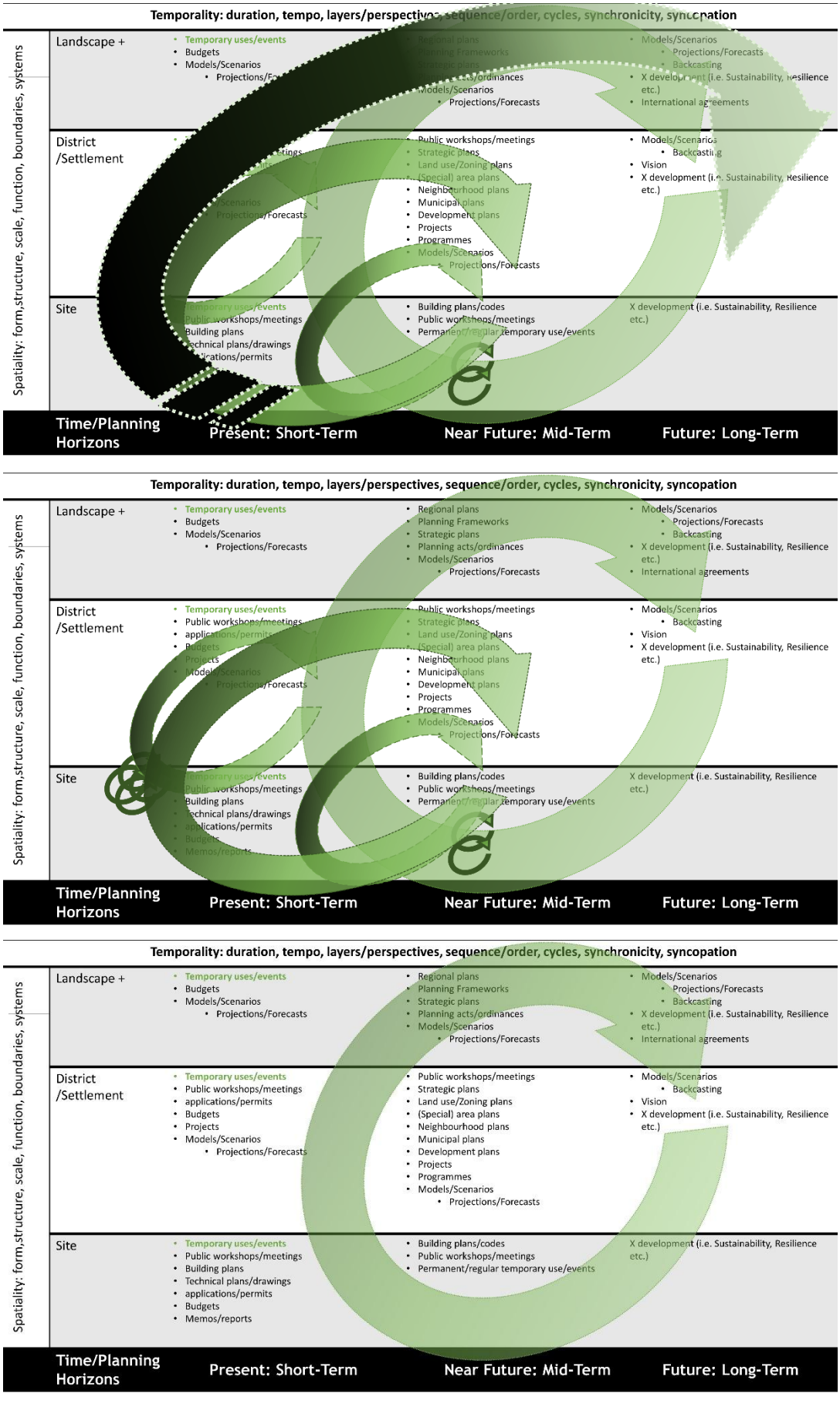


Figure 29. 'Animated' governance temporalities from bottom, moving up.

Finally, I add to my thoughts here that while the findings from this research are more explanative in nature. This does not discount the critical and necessary considerations for the normative and prescriptive opportunities highlighted through a temporality lens. Urban (planning) scholars and practitioners still have a role to play in processes of stabilisation. Whether it is in facilitating through programmes and intermediaries (#1 pN, #3 URP, and #4 Cities) or through explicit policy delineations (#5 CCIT), the conceptual framework here highlights that new temporal logics are surfacing, which we still need to understand. This framework has the potential to highlight temporalities that might also be emerging in other contexts of change.

The responsibility still lies in our hands to consider to what extent we can reflect on and integrate insights from such a perspective. The possibility to let other temporalities outpace or entangle processes of urban development is always at hand. But the hope through this dissertation is to provide constructs to help us think beyond and ahead of these possibilities in order to recognise that there is need for introspection and reflection on how we identify, (re)conceptualise, and articulate time or temporalities through our practice and our instruments.

5.3. LIMITATIONS

I set out through this dissertation to examine the processes of temporary use (section 2.3), in particular that of stabilisation, and attempt to clarify the factors supporting this through a temporality lens. What has evolved out of this research project is a conceptually analytical framework that draws on observations and data collected regarding processes in and contextualising temporary use (section 1.3, sections 2.1 and 2.2). These demonstrate that a variety of ways and conceptual lenses can be used to explain the social processes that help temporary users adapt and become more competent in their interactions with public administrations. These also highlight that processes of professionalisation from temporary users who have developed the acumen to generate a means of living from temporary users are key to stabilisation but also delineate various spatial trajectories of this stabilisation. The scientific process of generating this knowledge was, however time-intensive and not possible without the access to many temporary users over a longer period of time. In this sense, the insights from this work are only as productive as the circumstances have been generous—both from collaborators as well as funders. The realities of replicating such a research project are thus contingent on the possibilities of such comparably generous circumstances. Moreover, the ironic but fortunate timing of this work took place during urban development phases in Rotterdam and Bremen that included urban regeneration efforts and active temporary uses landscapes. Not all timing of such research projects could be so opportune. Future research could consider other contexts in which processes of temporary use stabilisation could be studied. For example, existing work highlight many post-disaster (Finsterwalder & Hall, 2016), reconstruction (Wesener, 2015), or even more current post-pandemic situations (Andres et al., 2021), which could provide other opportunities to test the explanatory robustness of such a framework. Likewise, other geopolitical comparative contexts could examine the transfer of such temporalities through policy mobilities (Liu, 2017). I have highlighted policy illustrations that also extend beyond the geographical scope for this dissertation (#5 CCIT). While this brings to light inspirations, this does not necessarily respect the comparative congruency of the research project. So, the possibilities exist to improve or build upon this dissertation through more thoughtful comparative work.

Finally, this research set out with an explorative motivation which also unearthed quite of number of conditions that I derived inductively from literature. While this was helpful in the initial attempts at assessing factors that help temporary use stabilise through fsQCA, this was also not without its challenges. I have outlined in my publications that the findings presented challenges including the need to conduct the analyses through two models for both spatial and spatially detached stabilisation (#3 URP, and #4 Cities). Moreover, while results were able to demonstrate that configurations of conditions help stabilise temporary use and that certain conditions seemed to have greater influence, the clarity of which exact configuration of conditions are key still require more research attention. The decision to also make use of set-theoretic methods might also be criticised for reducing the congruency of analysis. For example, process tracing or event-sequence analysis might have been more appropriate, while time-based QCA methods were not yet available. This also links back to earlier discussion suggesting more intentional and explicate consideration and communication of how time is integrated into methods as well as general research design (Gerrits & Pagliarin, 2020; Pagliarin & Gerrits, 2020; Hassett & Paavilainen-Mäntymäki, 2013). A more coherent integration of time and temporality into the philosophical, the conceptual the methodological and the substantive domains of research design could enhance the validity of overall research design (Hassett & Paavilainen-Mäntymäki, 2013).

6. CONCLUSION

This chapter presents the conclusions that follow from the research project presented in this dissertation. The source of the research originates with three research questions:

1. **How does temporary use stabilize?**
2. **Which factors are key to the explanations of how temporary use stabilizes?**
3. **How can we explain temporary use stabilisation and supporting factors through a temporality lens?**

These questions aim to help analyse both conceptually and methodologically how factors embodied in the multiple processes in temporary use and configurations of conditions help stabilise temporary use. The research project undergirded by these questions also attempt to address how urban (planning) scholars might 1) better understand and explicate long-term urban planning and designs that leverage or are constituted by short-term activities; and 2) develop the vocabulary and syntax to support these understandings and insights. I do this by exploring processes in temporary uses through a series of five contributions (section 4.0; cf Appendix 8.5) and considering how their interplay (including configuration of conditions) through a temporality lens (section 2.3) is subsumed in a process of stabilisation. I argue that this could be conceptually explained through rhythmanalysis and the notion of entrainment in relation to the temporalities expressed through the various processes. These are further contextualised by and entangled into processes of urban regeneration. I further posit how a temporality lens could frame the rhythmic configurations of conditions that also contribute to stabilisation (#3 URP and #4 Cities, cf. Appendix 8.5).

The research and its investigation are contextualised by processes of urban regeneration in the cities of Rotterdam (NL) as well as Bremen (GE). These provide comparable backgrounds for a multi-method research design that is empirically informed by data collected from 40 temporary use case studies between 2015 and 2019. Theoretically, the contributions draw on different conceptual lenses to characterise particular sub-processes within temporary use; these are processes of adaptation, professionalisation, and communication in temporary use and discourses thereof. The first of these lenses includes economic geographic and adaptive management considerations for resilience, which highlights the synchronised temporalities expressed through processes of adaptation (#1 pN and #5 CCIT). These indicate that temporary use stabilisation is not only about achieving permanence at a site, but a measure of individuals' and collective aptitude to build adaptive capacity and regulatory literacy while they foster entrepreneurial and management competencies (#1 pN). What is also highlighted is the value of active public administrative engagement with temporary uses programmes and policies (#1 pN and #5 CCIT). However, how exactly adaptive capacity translates into regulatory literacy and the extent this bolsters or impeded the development of entrepreneurial competencies could still be more deeply explored.

The second lens explores processes of professionalisation through a rhythmanalysis to show the trajectories of spatially detached (syncopated) and spatial (synchronised) stabilisation of temporary uses (#3 URP and #4 Cities). This is also brought to bear through the application of fsQCA to untangle the multiplicity of conditions that are rhythmicanalytically bundled in configurations to help support temporary use

stabilisation. These conditions include risk perceptiveness, entrepreneurial management, interactive attachment, adaptive capacity, functional compatibility, municipal support and spatial affordance and are inferred inductively from literature with findings on temporary use stabilisation (#2 UP, #3 URP, and #4 Cities). While spatial and functional considerations are priorities in determining how temporary uses stabilise spatially, the presence and absence of public administrative support also creates influence how processes of professionalisation are channelled through temporary use. Likely out of necessity, processes of professionalisation capitalising on temporary uses themselves might be more dominant in the absence of public administrative support. Whereas the processes of professionalisation in the presence of public administrative support might encourage more original and entrepreneurial concepts. This also illuminates opportunities for more study as problematisations with risk do not seem to factor in as greatly in this investigation of the relationships between processes of stabilisation and professionalisation. Thus, how exactly risk and the more nuanced processes of professionalisation relate are grounds for further research.

The third lens highlights recursive temporalities that are brought to light through the socio-semiotic framing of communicative processes relating to temporary uses (#2 UP). Temporary use stabilises in this realm through the reiteration of new signs and symbols that elevate temporary uses through various processes of signification. We can demarcate the iterative processes through the emerge of new and competing keyword symbols in scholarship that can be associated with temporary uses in practice. While this dissertation here has attempted to address suggestions to find alternative ways to frame temporary use, more work could be done here through other alternative and comparative approaches. In light of the increasing proliferation of temporary uses in different countries and cultural contexts, intersectional and cross-cultural approaches could be other means for investigation.

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8. APPENDICES

8.1. LIST OF CASE STUDIES & MILIEUS

	City	Relevant Milieu	Organization Name
1	Rotterdam	ZOHO	Baars & Bloemhoff
2			Marché Beybun
3			Broeinestcafé
4			WijkTV
5			Studio Bas Sala
6			Wijk COOP 010
7			Hostel De Mafkees
8			Gare du Nord
9			Mesh Print Club
10			MONO Cafe
11			ZohoCitizens
12			Stipo
13			De Viltmannen
14		Schieblock	Ka-Ching Cartoons
15			Architects for Urbanity
16			VR Composers
17			Jelte Boeijenga
18			IABR (& Vergaderruimte)
19			seriousFilm
20			Friends for Brands
21			ZUS [Zones Urbaines Sensibles]
22		Keilewerf	Studio Met; Spaak
23			We. Umbrella.
24			Buro van Wieren
25			Maarten Bel
26			DANSVOER
27			Keilewerf
28		FFF	Stroop Rotterdam
29			Stielmankoffie
30			Bosch & de Jong Boekverkopers
31			Kaapse Brouwers Rotterdam
32	Bremen	Zucker	Zucker e.V.
33		WurstCase	Emtisomething
34			AAA; ZZZ
35		-	Radieschen
36		Plantage 9	Ole Mollenhauer. Digitale Kommunikation
37			Valeska Scholz: Grafik & Illustration
38		CityLab (Lloydhof)	Noon
39			Wedderbruuk
40		-	Die Komplette Palette / Das Kleine Paradies

City	TU Case Study Milieu	Address	Type	Duration
Rotterdam	Zoho	Vijverhofstraat 15, 3032 CM Rotterdam; Vijverhofstraat 47, 3032 CM Rotterdam; Zomerhofstraat 70-75, 3032 CM Rotterdam; Zomerhofstraat 76-90, 3032 CM Rotterdam (Het Gele Gebouw); Anthoniestraat 2, 3032 CP Rotterdam	* multiple users * multiple and diverse range of buildings spread within a block	2011 - ongoing
	het Schieblock	Schiekade 189, 3013 AA Rotterdam	* multiple users * single larger, multi-storey building	2000 - ongoing
	Fenix Food Factor	Veerlaan 19D, 3072 AN Rotterdam	* multiple users * single larger building	2014 - ongoing
	Keilewerf	Vierhavensstraat 56, 3029 BP Rotterdam; Keileweg 4, 3029 BP Rotterdam; Keilestraat 5a, 3029 BP Rotterdam	* multiple users * multiple buildings on a single parcel	2015 - ongoing
Bremen	Zucker e.V.	Beim Handelsmuseum 9, 28195 Bremen	* multiple users * single larger building	2007 - ongoing
	Radieschen	Am Friedhof Buntentor, Buntentorsteinweg 65, 28201 Bremen	* single user * single smaller building	2011 - ongoing
	Wurst Case	Zum Sebaldsbrücker Bahnhof 1, 28309 Bremen-Hemelingen	* multiple users in single building	2015 - ongoing
	Plantage 9	Plantage 9, 28215 Bremen	* multiples users * single smaller building	2010 - ongoing
	CityLab (formerly Lloydhof)	Ansgaritorstraße 4, 28195 Bremen	* multiple users * single larger building	2013 - 2017
	Die Komplette Palette (DKP)	Zum Sporthafen Hemelingen 8, 28309 Bremen	* single user * larger greenfield	2016 - ongoing

8.2. LIST OF POLICY DOCUMENTS

8.2.1. BREMEN

	Title	Document Type
1	Bremen Senate. (2010). Zukunft geWiNnen - WiN-Programm fortsetzen! [Securing the Future - Continuing with teh WiN-Programme]. Mitteilung des Senats an die Stadtbürgerschaft vom 30. November 2010 [Communication from the Bremen Senate to the Citizenship from 30 November 2010] [Press release]. Bremen.	Press Release
2	Bremen Senate. (2016). "Wohnen in Nachbarschaften" wird bis 2019 unverändert fortgeschreiben ["Living in Neighbourhoods" Program Will Continue Unchanged Until 2019]: Pressestelle des Senats [Senate Press Office 9 [Press release]. Bremen.	Press Release
3	Lecke-Lopatta, T., Thiemann, W., Schobess, D., Krämer, P., Kumpfer, W., & Petry, W. (2014). Begründung zum Flächennutzungsplan Bremen [Explanatory Memorandum to the Bremen Land Use Plan]. Bremen. Der Senator für Umwelt, Bau und Verkehr [Senator for Environment, Building & Transport of the Free Hanseatic City of Bremen].	Policy Study
4	Statistisches Landesamt Bremen [Bremen State Statistical Office]. (2017). Statistical Yearbook 2017. Bremen. Free Hanseatic City of Bremen [Freie Hansestadt Bremen (Municipality)].	Policy Study
5	Statistisches Landesamt Bremen [Bremen State Statistical Office]. (2019). Bremen in Zahlen 2019 [Bremen in Figures 2019]. Bremen. Statistisches Landesamt Bremen [Bremen State Statistical Office].	Policy Study
6	Statistisches Landesamt Bremen [Bremen State Statistical Office]. (2020). Bremen in Zahlen 2020 [Bremen in Figures 2020]. Bremen. Statistisches Landesamt Bremen [Bremen State Statistical Office].	Policy Study
7	Sünnemann, A., Löwer, M., Lecke-Lopatta, T., & Thiemann, W. (2018). Bericht zur Flächenbereitstellung "Wohnbauflächen in Bremen" [Report on land provision "Residential building land in Bremen"]. November 2018. Bremen. Der Senator für Umwelt, Bau und Verkehr [Senator for Environment, Building & Transport of the Free Hanseatic City of Bremen].	Policy Study

8	Casper-Damberg, J., Lecke-Lopatta, T., & Heuss, M. (2016). Weiterführung der Zwischennutzungsagentur Bremen (ZZZ) bis 2020 [Continuation of the Bremen Temporary Use Agency (ZZZ) until 2020]. Vorlage Nr. 19/125 – S für die Sitzung der städtischen Deputation für Wirtschaft, Arbeit und Häfen am 11.5. 2016 [Submission Nr. 19/125 - S for the Session of the Delegation for Economy, Labour, and Ports on 11.5.2015]; Vorlage Nr. 19/109 - S für die Sitzung der Deputation für Umwelt, Bau, Verkehr, Stadtentwicklung, Energie und Landwirtschaft (S) am 19.5.2016 [Submission Nr. 19/109 - S for the Session for the Delegation for Environment, Building, Transport, Urban Development, Energy and Agriculture (S) on 19.5.2016]. Bremen. Der Senator für Wirtschaft, Arbeit und Häfen [Senator for Economy, Work and Ports of the Free Hanseatic City of Bremen]; Der Senator für Umwelt, Bau und Verkehr [Senator for Environment, Building & Transport of the Free Hanseatic City of Bremen]; Die Senatorin für Finanzen [Senator for Finances of the Free Hanseatic City of Bremen].	Policy Report
9	Der Senator für Umwelt, Bau und Verkehr [Senator for Environment, Building & Transport of the Free Hanseatic City of Bremen]. (2013). Bericht der Verwaltung für die Sondersitzung der Deputation für Umwelt, Bau, Verkehr, Stadtentwicklung und Energie (S) am 14.03.2013 [Report of the Administration for the Special Session of the Deputation for Environment, Construction, Transport, Urban Development and Energy (S) on 14.03.2013]: Gewerbeentwicklungsprogramm der Stadt Bremen 2020 [Commercial Development Programme of the City of Bremen 2020]. Ergebnis der Beteiligung der Ortsbeiräte [Result of the participation of the local advisory councils]. Bremen. Der Senator für Umwelt, Bau und Verkehr [Senator for Environment, Building & Transport of the Free Hanseatic City of Bremen].	Policy Report
10	(2015). Gewerbeentwicklungsprogramm der Stadt Bremen 2020 [Commercial Development Programme of the City of Bremen 2020]: Ein Beitrag zum Strukturkonzept Land Bremen 2015 [A contribution to the Structural Concept for the State of Bremen 2015]. Bremen. Der Senator für Wirtschaft, Arbeit und Häfen [Senator for Economy, Work and Ports of the Free Hanseatic City of Bremen]; Senator for Economy, Work and Ports of the Free Hanseatic City of Bremen (Der Senator für Wirtschaft, Arbeit und Häfen).	Policy Report
11	Gessner, S., Lecke-Lopatta, T., & Pfister, R. (2012). Fortführung der Zwischennutzungsagentur Bremen [Continuation of the Bremen Temporary Use Agency]. Vorlage Nr.18/128 – S für die Sitzung der städtischen Deputation für Wirtschaft, Arbeit und Häfen am 07. März 2021 [Submission nr. 13/123 - S for the Session of the City Delegation for Economy, Labour and Ports]; Vorlage Nr.18/107 – S für die Sitzung der Deputation für Umwelt, Bau, Verkehr, Stadtentwicklung und Energie (S) am 08. März 2021 [Submission nr. 13/107 - S for the session for the deltaion for Environment, Building, Urban Development and Energy on 08 March 2012]. Bremen. Der Senator für Wirtschaft, Arbeit und Häfen [Senator for Economy, Work and Ports of the Free Hanseatic City of Bremen]; Der Senator für Umwelt, Bau und Verkehr [Senator for Environment, Building & Transport of the Free Hanseatic City of Bremen]; Der Senator für Kulture [Senator for Culture of the Free Hanseatic City of Bremen]; Die Senatorin für Finanzen [Senator for Finances of the Free Hanseatic City of Bremen].	Policy Report
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13	Imholze, R., Liedke, B., & Dreher, S. (2013). Integriertes Entwicklungskonzept Alte Neustadt/ Buntentor: Städtebauförderungsprogramm Aktive Stadt- und Ortsteilzentren. Bremen. Der Senator für Umwelt, Bau und Verkehr [Senator for Environment, Building & Transport of the Free Hanseatic City of Bremen].	Policy Report
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8.2.2. ROTTERDAM

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41	City of Rotterdam Regional Steering Committee. 2009. “The City of Rotterdam: The Netherlands.” OECD Reviews of Higher Education in Regional and City Development. Unpublished manuscript, last modified October 22, 2017.	External Report
42	Dellot, B., Warden, J., & Hill, A. V. (2018). Cities of Making Report. Brussels. Cities of Making.	External Report

8.3. LIST OF INTERVIEWS

	Interview Contact	Organisation(s)	(Group) Interview & Participant/Site Observation Dates
1	(Surname not given), Funda	Stroop Rotterdam	Interview: September 19, 2017.
2	(Surname not given) Beybun, Ilo	Marché Beybun	Interview: September 25, 2017
3	(Surname not given), Elena	Hostel De Mafkees	Interview: September 18, 2017
4	Akers, Josie	Broeinestcafé	Interview: September 27, 2017
5	Bârcoci-Costa, Lilia	Gebiedscommissie Delfshaven; Lil' Delfshaven	Interview: March 26, 2019.
6	Bauman, Wouter; Garden Volunteers	DakAkker	Interview: September 22, 2017
7	Bel, Maarten	Maarten Bel	Interview: October 31, 2017
8	Blom, Ron	WijkTV	Group interview: September 18, 2017 Follow-up interview: May 22, 2020
9	Boeijenga, Jelte	Jelte Boeijenga	Interview: September 25, 2017
10	Brimbergen, Laura-Anne	DANSVOER	Interview: October 30, 2017
11	Brugmans, George	IABR (& Vergaderruimte)	Interview: November 1, 2017
12	Coşkun, Theo	Wijkraad Agniesbuurt	Interview: March 27, 2019
13	de Jong, Folco	Bosch & de Jong Boekverkopers	Interview: September 19th, 2017
14	de la Vieter, Michel	Gemeente Rotterdam - Stadsontwikkeling/PMB	Interview: October 31, 2017.
15	de Rooij, Frederique	Winkelcafe: De Zeeuwse Meisjes	Interview: September 19, 2017.
16	Dietrich, Felix	Zucker e.V.	Interview: February 19, 2019
17	Elenbaas, Arjan	Mesh Print Club	Interview: September 21, 2017
18	Elleswijk, Paul	Havensteder Housing Corporation	Interview: September 14, 2017
19	Emde, Tini	Emtisomething	Interview: February 22, 2019
20	Fockens, Daniel	Gare du Nord	Interview: September 23, 2017
21	Frederik Niemann	Wedderbruuk	Group Interview: September 7, 2019
22	Geenen, Sander	Gemeente Rotterdam - Stadsontwikkeling	Interview: November 1, 2017
23	Gerdien Wessels	VR Composers	Group interview: September 15, 2017
24	Hasemann, Oliver	AAA - Autonome Architektur Atelier; ZZZ - ZwischenZeitZentrale Bremen	Interviews: January 06, 2015 and September 07, 2018 Site and participant observation for the month of September 2018
25	Hilbrands, Frank	De Viltmannen	Interview: September 13, 2017 Follow-Up interview: May 12, 2020
26	Immo Wischhusen	Die Komplette Palette/Das Kleine Paradies	February 22, 2019
27	Izeboud, Alexandra	Baars & Bloemhoff	Interview: September 21, 2017
28	Jörn Hermening	Ortsamt Hemelingen	21 February, 2019
29	Kuijpers, Marc	MONO Cafe	Interview: September 26, 2017
30	Laven, Jeroen	Stipo	Interview: September 18, 2017
31	Lecke-Lopatta, Tom	Die Senatorin für Klimashutz, Umwelt, Mobilität, Stadtentwicklung und Wohnungsbau - SKUMS (formerly Der Senator für Umwelt, Bau und Verkehr - SUBV)	Interview: September 11, 2018
32	Lemmers, Jan	Wijk COOP 010	Interview: September 21, 2017
33	Leon, Christian M.	Noon	Interview: September 11, 2019
34	Mollenhauer, Ole	Ole Mollenhauer. Digitale Kommunikation; Plantage 9 e.V.	Group Interview: September 11, 2019
35	Peeters, Tim	ZUS [Zones Urbaines Sensibles]	Interview: September 29, 2017
36	Perdeck, Nine	Studio Met; Spaak	Interview: October 31, 2017
37	Pfaff, Marco	Stielmankoffie	Interview: September 19, 2017
38	Radieschen, Eva (Oelker, Eva-Maria)	Radieschen	Interview: February 14, 2019
39	Sahm, Kriz	Zucker e.V.	Interview: February 19, 2019
40	Sala, Bas	Studio Bas Sala	Interview: September 27, 2017
41	Salianji, Irgen	Architects for Urbanity	Interview: September 22, 2017
42	Sandra Hoerner	Wedderbruuk	Group Interview: September 7, 2019
43	Scheffer, Wouter	Gemeente Rotterdam - Stadsontwikkeling	Interview: March 20, 2019

44	Schnier, Daniel	AAA - Autonome Architektur Atelier; ZZZ - ZwischenZeitZentrale Bremen	Interviews:January 06, 2015 and September 07, 2018 Site and participant observation for the month of September 2018
45	Scholz, Valeska	Valeska Scholz: Grafik & Illustration; Plantage 9 e.V.	Group interview: September 11, 2019
46	Take, Karin	Wirtschaftsförderung Bremen GmbH (WFB)	Group interview: February 21, 2019
47	Tendahl, Thorsten	Wirtschaftsförderung Bremen GmbH (WFB)	Group interview: February 21, 2019
48	Thelosen, Marc	seriousFilm	Interview: September 25, 2017
49	Tilman Schwake	Wedderbruuk	Group Interview: September 7, 2019
50	Tsigonakis, Manoli	VR Composers	Group Interview: September 15, 2017
51	Ulrike Pala	Ortsamt West - Stadtteilmanagement	April 26, 2019
52	van Bladel, Richard	STEAD Advisor	Interview: March 26, 2019
53	van den Berg, Bas	Keilewerf	Interview: September 29, 2017
54	van den Bosch, Joost	Ka-Ching Cartoons	Group interview: September 29, 2017
55	van den Broek, Raymond	ZOHO Citizens ** other members include Jan te Velde, Gert; Fruneaux, Christiann; Boelens, Ariënne; Laven, Jeroen; van Geest, Joosje*	Site and participation observation: September 20, 21, and 27, 2017 Interview: September 27, 2017 with Raymond van den Broek
56	van Noord, Marco	We. Umbrella.	Interview: October 31, 2017
57	van Oorschot, Kees	Gemeente Rotterdam - Stadsontwikkeling	Interview: August 15, 2018
58	van Wieren, Cornelis	Buro van Wieren	Interview: October 31, 2017
59	Verkerk, Erik	Ka-Ching Cartoons	Group interview: September 29, 2017
60	Vermeulen, Rini	Gebiedscommissie Delfshaven	Interview: March 26, 2019
61	Volder, Susanne	Friends for Brands	Interview: September 21, 2017
62	Vunderink, Lenard	Keilewerf	Interview: November 1, 2017
63	Wiegmann, Wim	WijkTV	Group interview: September 18, 2017
64	Zijlstra, Tsjomme	Kaapse Brouwers Rotterdam	Interview: September 28, 2017

8.4. LETTERS OF CONFIRMATION

8.5. FULL PAPERS & MANUSCRIPTS

8.5.1. PlaNext

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NEXT GENERATION PLANNING

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Open Access Journal

Temporary Use & Collective Action: How Urban Planning Practices Contribute to Adaptive Capacity Building for Economic Resilience

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Amongst the proliferation of practice- and theory-based concepts that are changing urban planning, the renaissance of *resilience* is proving its potential for impressive implications instead of remaining a brief trend. This paper considers the affordances of an evolutionary and adaptive resilience framing for planning policy and practice in relation to economic development. Specifically, the research presented here explores the explanatory and analytical values of resilience through transformative collective action that incites experimentation, social learning and adaptive capacity building through entrepreneurial temporary uses. In the spotlight is Bremen's temporary use policy of *ZwischenZeitZentrale*, through which temporary use is managed in the wake of economic and structural change. This softer form of policy demonstrates how planning mechanisms can complement strategies to address hurdles following gradual forms of crises. Through the case study of *Plantage 9,* an illustration of collective action is anchored by entrepreneurial temporary use that enable temporary users, temporary use managers and public administrations to build adaptive capacity for economic resilience.

Keywords: Evolutionary resilience, experimentation, social learning, adaptive capacity, temporary use, Bremen

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Introduction

In the context of urban planning, the resilience debate is ongoing and its momentum remains strong. Global policy and support through organizations such as the UN (UN-Habitat, 2017), the International Institute for Sustainable Development and ICLEI – *Local Governments for Sustainability* or institutions such the Rockefeller Foundation (Silva, 2015) fuel its conceptual and political resurrection, while compelling its proponents for greater constructiveness. In contrast to clear and immediate policy outcomes, such as funding for Chief Resilience Officers (Rodin, 2014; Silva, 2015) and reference compendiums (European Commission, 2015), the conceptual translation of resilience for communities and the built environment continues to demand granular nuance and socially coherent framing. This contribution responds to this need by examining planning practices in the context of economic development that combine what Ernstson and other colleagues identify as an understanding of evolutionary resilience 'in' cities which is reliant on intrinsic city capacities and networks, as opposed to those that are external and thus 'of' cities (2010). Backgrounded by research from the fields of regional studies and economic geography which have broached the resilience concept since the mid-2000s (Swanstrom, 2008; Pike *et al.*, 2010; Simmie & Martin, 2010; Courvisanos *et al.*, 2014, p. 630; Boschma, 2015), this humble exploration examines how temporary uses facilitate adaptive capacity building through collective action and enables communities to, as articulated by Holden *et al.*, 'correlate possibility' (2016, p. 298) for economic development and bounce forward toward futures different from historical paths. The additional and analytical opportunities sought through this contribution, are for new encounters with resilience within planning (Stumpp, 2013, pp. 164–166) by examining how temporary use facilitates 1) processes of experimentation and social learning; which can be aggregated to 2) support collective action and agency; to 3) encourage adaptive capacity for economic development. The specific example of the *ZwischenZeitZentral* (ZZZ) and the temporary use case study of *Plantage 9* in the German city of Bremen illustrate the instrumentation of temporary use and discusses its contribution to collective action and adaptive capacity building.

Initial Understanding of Economic Development through Evolutionary Resilience and Adaptation

Numerous attempts to shed light on the complexities of urban and economic transitions range from path dependence to path divergence, and increasing regional economic adaptability to support the latter. For instance, Pike *et al.* discuss and distinguish agents, mechanisms, and sites and interrelationships within uneven and new economic development paths of different geographical regions (2010) whereas Martin proposes a more systematic approach to understanding differences in patterns that help regional economic react (2011). Both of their work acknowledge Swanstrom's argument for stronger political and social perspectives within a resilience framing of regional economics and forces of influence (2008). A common condition in these conceptualizations of resilience is that *transition* is depicted upon a canvas of economic and structural crises, where change is gradual as opposed to the more popular focus on sudden and unexpected natural catastrophes (Pendall *et al.*, 2010; Simmie & Martin, 2010; Boschma, 2015). According to Boschma, the by-product of neglecting gradual change is a need to counterbalance the general understanding of resilience within economic development contexts and specifically in relation to lethargic patterns of renewal (Boschma, 2015, p. 735). To achieve this, Boschma recommends investigating regional development of adaptability or abilities to cope with change through path creation and relevant linkages to local-level mechanisms (2015). Correspondingly, this contribution aims to help hone the conceptual utility of resilience by considering how planning mechanisms like temporary use offers opportunities to link local practice and policy with regional strategies for economic resilience through capacity building and learning involving entrepreneurial temporary users.

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The following sections will first introduce temporary use in the context of economic and industrial change specific to the German context and then highlight how collective action relates to such planning approaches. Following this, a detailed introduction of the case study in the city of Bremen will follow, and provide the storyboard for analytical considerations on how temporary use and collective action are manifest and contribute to economic resilience. In closing, reflections on the opportunities and challenges will be summarized to more critically conceive temporary use as an adaptive planning mechanism with the potential amplify a readiness, instead of a resistance to change.

In the context of economic and political restructuring, experiments with temporary use has a rich history. Experimental land use and programming has established itself as a means to facilitate or complement urban regeneration within shorter time-frames and also as a part of longer-term transformations (Andres, 2012, pp. 759–760). Temporary use's history with regeneration also has strong roots in the German context. Since the decades following WWII, economic and political change has compelled German cities to find solutions for increasing inner city vacancy, growing number of brownfields, shrinking populations, while also compensating for decreasing public and private investment for longer term uses (Blumner, 2006; Zehner & Hoffmann, 2007). *Zwischennutzung* or more literally 'interim use' emerged as the German response for temporary activation of vacant lands or buildings which also contributes to sustainable and dynamic urban development (Blumner, 2006; BMVBS & BBR, 2008). According to scholars such as Colomb, this notion of temporary use physically manifested through slow, uneven growth and rebranding strategies that shadowed socio-political and socio-economic restructuring most impressively in eastern Germany (2012a) which suffered from political and economic crises (Overmeyer, 2003; Hollander *et al.*, 2009; Bishop & Williams, 2012; Colomb, 2012a; Oswalt *et al.*, 2013). Its subsequent manifestations have since gained attention as a means to 'more substantial investments' and greater 'larger scale efforts' (Arieff, 2011; Colomb, 2012a; Lydon *et al.*, 2012; Ferreri, 2015) to intervene for urban renewal while also building social agency and socio-economic capacity (Webb, 2018). Many examples of temporary urban interventions in the German context were found to be effective means to 'hold' or stabilize and property values' (Hollander *et al.*, 2009), and were even promoted and shared through design, finance, and policy templates (Blumner, 2006; Hollander *et al.*, 2009; Colomb, 2012a).

The measure's effectiveness and relevance in other parts of Germany, however, is often neglected (Altrock & Huning, 2015, pp. 151–152). A well-recognized example is supported through the post-industrial legacy established in the Ruhr region (Dettmar, 2005, pp. 264–266). Differences in geographical framing aside, temporary use advances an interesting angle to managing physical and social adaptation. While the nature of the practice is embedded in planning practice, it reflects characteristics of adaptive management such as 'learn-by-doing' and 'experimental probes' that may contribute to adaptation (Ahern, 2011, p. 341). This also mirrors philosophies that emphasize new learning in the face of failure which engaged early resilience scholarship from ecosystem and resource management (Bruckmeier, 2016, p. 235) in the 1970s (Bodin *et al.*, 2011, p. 10).

Indeed, this form of management is highly relevant in planning studies when one considers the demands from crises and uncertainty which require innovative policy and governance design (Voß & Bornemann, 2011, p. 2) and a readiness through resilience-oriented planning and design strategies characterized by multifunctionality, (bio)diversity, multiscalar networks, redundancy and modularization, and adaptive capacity (Ahern, 2010, p. 145). Looking to temporary use practices, it is not experimentation alone that may contribute to resilience and adaptation. Indeed, experimentation coupled with indicators of social learning (Cretney, 2014, pp. 630–631) and collective action (Taşan-kok *et al.*, 2012, p. 43) have been highlighted as

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qualities to build or strengthen in order for communities to build the capacity to adapt. Interestingly, the focus on such qualities is sparse and has only recently been picked up in a comparative context of post-disaster recovery (Wesener, 2015). This contribution will address strengthen this gap in research and its linkage to existing scholarship examining social processes (Hou, 2010; Altrock & Huning, 2015; Tornaghi & Knierbein, 2015) that afford the recognition of paradigmatic shifts in planning which no longer strictly dichotomizes the formal and informal (Matthiesen *et al.*, 2014, p. 88).

Through a resilience perspective, the dimensions of experimentation and social learning for adaptivity capacity building are not only present in temporary uses, but they are also socially-sensible indicators for resilience (Carpenter *et al.*, 2002; Bodin & Prell, 2011). The exploration of their presence as impacts and qualities is also a way to address epistemological challenges that have been identified in translating resilience, as an ecological construct, into the social realm. This is because of the affordances they provide in considering of dimensions such as agency, power, and equity (Biermann *et al.*, 2015, pp. 1–2). To constructively hone the utility of resilience within the social realm, this contribution engages such socially analytical qualities. Lastly, this contribution acknowledges that such social considerations should consider politics since an apolitical treatment of resilience concepts threatens to undermine its utility (Swanstrom, 2008; Cretney, 2014; Biermann *et al.*, 2015, p. 3; Pizzo, 2015). However, thorough discussion on this last matter, will not be included as it is out of the scope of this contribution.

Incremental Instead of Industrial: Temporary Use and Collective Action

As elucidated earlier, the constraints following structural and economic crises give rise to urban voids in which opportunities for local and incremental action can root. In many examples of temporary incrementalism supported by multi-level governmental programs and schemes[1], the practices also become participatory processes that synthesize social and economic strategies for renewal which often include or support small and medium enterprises or alternative and cultural initiatives. Empty spaces and buildings through temporary use evolve into spatial canvases for urban development. Brush stroke experiments and inspiration are primed and brought to life to infuse collaborative relationships between many diverse actors. In these circumstances, the actors or temporary users may push beyond experimental engagement and also become active curators or agents with the creative capacity to orchestrate adaptive reuse of abandoned buildings. This is most often only possible with public administrative guidance and support to help implement their ideas and produce new modes and complex systems of governance (Blumner, 2006; Colomb, 2012b; Willinger, 2014, pp. 148–149; Altrock & Huning, 2015) which are also relational means of community empowerment and activation (Wohl, 2017, p. 3). The temporary practices from individual entrepreneurs are then pointillist in nature compared to grand strategies for economic development. What the practices and users also represent is opportunism through individual and collective action (Ernstson, 2011, pp. 276–277) for new ideas within alternative spaces and in effect, seek operational feasibility, creative development, in addition to sustainability for income generating (Malki, 2009, p. 72). The aim for economic advantage, however, does not lie with the user alone, but can also extend to properties and sites after the uses have improved their value and rendered them attractive again for future investment of development (Blumner, 2006, p. 9). Contrasting the rewards, however, are vulnerabilities to mind. From a public administration's position, risks are entangled in the process of participation and engagement

[1] Public funding is channelled through programs such as *Stadtumbau Ost* (Rebuilding the East), *Stadtumbau West* (Rebuilding the West), *Soziale Stadt* (Social City) or the IBA - *International Bauaustellung* (International Building Exhibition) Click here to enter text.

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which often relies on external funding from regional and federal governments as opposed to the inherent and existing budgets (Blumner, 2006, pp. 4–5). Risk can also be perceived from the users' standpoint as they have no guarantee of continued access to spaces despite the value of time and effort and other resources they contribute to the improved valorization of both properties and places (Blumner, 2006, pp. 4–5). Future conflicts are often contingent on many uncertainties including the ambiguous state of access and exclusive understanding of ownership in most temporary use contexts. In short, while temporary use offers some measures towards a collective and contextualized means of economic resilience, it can also lead to its own path-dependence when new learning and experiments are not successful or exploitable and may further seed unnecessary future tensions.

On its own, temporary use as a planning instrument is ambivalent and a means to achieving urban regeneration goals. Along with planning processes as well as legislation, its successful implementation can pave steps towards economic rewards in the form of increased value or investment potential. But the less tangible and perhaps more valuable contribution it offers is a social capacity for economic development through additional entrepreneurial dimensions. When temporary uses bring together collective actions that share social interest, then the intentions of 'planned actions aimed at widening and opening specific decision-making processes towards experimental models of democracy' surface as forms of both effective and autonomous governance (Liddo & Concilio, 2017, pp. 848–849). Collective agency, in this light, has the potential to aggregate and contribute to a greater capacity for institutional change in which networks of individuals participate in exchange and collaborations. This is relevant to temporary use initiatives which facilitate and coordinate such collective agency, through experimentation to negotiate common visions while also building change agency overtime (Ernstson, 2011, pp. 255-256).

While Ernstson's description of collective action refers to resilience in the context of resource management, his approach to this type of group theory is also suitable for the analytical framing of temporary use. Despite the fact that this interpretation of collective action draws meaning from co-management in explicit natural resource contexts (Berkes, 2009, p. 1692), its social implications for contexts that are too complex to be adaptively managed by singular agencies are still appropriate for land use management in Bremen. The indirect management of land use through temporary use in Bremen is implemented with sustainable aims to create 'second hand spaces' through collective action to not only manage urban space and functions, but also to adapt attitudes about the practice through experimentation and learning (Kil, 2014, p. 125). The ensuing sections introduce the industrial and economic context of Bremen and describe the development of temporary use through the *ZwischenZeitZentral* Bremen (In-Between Time Central Bremen, ZZZ). The specific case study of *Plantage 9* will illustrate the process of collective experimentation and learning which continues to fuel entrepreneurial agency in Bremen and draws from materials including document analysis, interviews from field work between 2015 and 2016, in addition to recent interviews for graduate field work in 2018 and 2019.

Introducing Economic Transitions in the Bremen Context

As a mid-sized, harbour town, Bremen's urban and economic development exemplifies aims to break away from path-dependency and towards innovation through higher and local-level strategies (Plöger & Kohlaas-Weber, 2013). The city's development historically depended on trade and port activities which date as far back as the 13th century, when it was an intermittent member of the Hanseatic League (Plöger, 2008a, p. 5). This remained true even as Bremen developed into a key industrial city in the early 20th century (Plöger, 2008a, p. 4; Hasemann et al., 2017). From the late 1880s until the early 20th century, the city profited from shipping

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and emigration activity which passed through harbours located in Bremen and the neighbouring area of Bremerhaven until industrial activities shifted to shipbuilding and arms manufacturing. This lasted until the Second World War, after which American occupation helped Bremen secure its administrative city-state status. Economic development through harbour and industrial activities at this time continued while new sectors targeting machine and engineering industries, and food processing emerged. This changed, however, with the onset of the Oil Crisis in 1973. Despite maintaining a strong economy at first, Bremen's economic prosperity was eventually undermined by the transition from Fordist to Post-Fordist manufacturing which manifested in the 1980s (Plöger, 2008b; Hasemann & Schnier, 2014; URBACT, 2015). Key traditional sources of employment such as shipbuilding companies closed, and were only slightly compensated for by a few new companies in alternative industries such as auto manufacturing (Plöger, 2008a, pp. 14–20); the region suffered subsequently as unemployment climbed and the population declined (see figure 1).

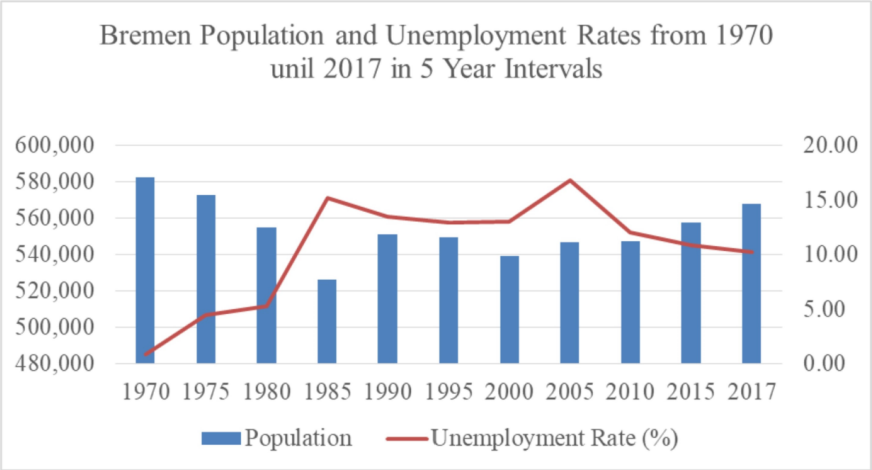

***Figure 1**. Population and unemployment statistics from the Federal Office of Labour. Source: Das Statistik-Portal (2019).*

Clearly, the traditional economic bases were no longer reliable and a struggle to economically adapt ensued. The challenges for the city and region were further exacerbated by suburbanization and federal tax reform in 1969 which reduced municipal budgets since taxes were no longer collected based on people's municipality of work, and instead based on their residential locations (Plöger, 2008a). Not only did municipal budgetary pressures increase, but so did the number of brownfields and vacancies. In response to the economic decline and urban dereliction, regional and metropolitan economic and innovation programs as well as municipal and neighbourhood level regeneration projects were initiated (Plöger, 2008a; ZZZ - ZwischenZeitZentrale Bremen, 2012; Hasemann *et al.*, 2017) to support and improve regional economic resilience (Plöger, 2008a, 2008b; Power et al., 2010). At the same time, local and site-specific instruments such as temporary use were formally integrated in 2007 when the municipality launched its first temporary use agency and experiment through LANDLOTSEN (Hasemann *et al.*, 2017). Upon this pilot project's success in the *Überseestadt* (Overseas City District), the Bremen public administration applied for funding through the Federal Ministry of

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Transport, Building and Urban Development and the Federal Institute for Research on Building, Urban Affairs, and Spatial Development and relaunched the temporary use platform through the *ZZZ* with funding from the *Nationale Stadtentwicklungspolitik* (National City Development Policy) and the Social City programs (Elisei, 2014; URBACT, 2015; Hasemann *et al.*, 2017; Lecke-Lopatta, 2018).

With supplementary support from the city-state government departments such as the Senate for Building, Environment, and Traffic, the Senate for Financial Affairs, the Senate for Economic Affairs, Labour and Ports, and federal- and municipal- level governments, the pilot agency was handed over to Oliver Hasemann and Daniel Schnier from the *Autonome Architektur Atelier* (Autonomous Architectural Atelier, AAA) who previously provided consulting for urban projects and were active temporary users of vacant spaces in 2009 (URBACT, 2015; Hasemann *et al.*, 2017). Due to AAA's direct experience with temporary use and their local involvement with supporting start-ups, the duo secured the tender to manage and expand Bremen's temporary use policy to municipal, instead of district boundaries. Following the preceding planning office of *BPW Baumgart+partner*, who managed LANDLOTSEN, AAA evolved into on-site temporary users for their future projects with responsibilities to manage the ZZZ. In parallel, they liaised officially through ZZZ with the private and public property owners including the publicly owned company *Immobilien Bremen* (Real Estate Bremen, IB), as well as the local economic development agency *Wirtschaftsförderung Bremen* (Economic Development Bremen, WfB) to support negotiation and implementation processes for temporary use (Take & Tendahl, 2019).

In addition to this constellation of public stakeholders, temporary users in the form of small-medium businesses would also be engaged as a new means of invigorating the economy through the cross-sectoral and 'soft urban policy' which the ZZZ represented to build project-based synergies and encourage meaningful urban transformation in the form of bottom-up collaborations through alternative socio-economic and cultural behaviours (Elisei, 2014; Hasemann & Schnier, 2015b; Lecke-Lopatta, 2018). This would also support local trajectories which helped transition from 'old economy' industries dependent on shipyards and maritime industries, to 'new economy' activities dependent on tourism funding and entrepreneurial experiments including the collective at *Plantage 9* (Hasemann & Schnier, 2014; Pala, 2019).

A Case Study of Experimentation and Social Learning: Collection Action through Temporary Use at *Plantage 9*

Plantage 9 began as *Bricolage Plantage* early in 2009 and was an initial and still sustaining outcome of AAA's central orchestration and steering of temporary use activities through the ZZZ. Beyond simply filling vacant spaces, ZZZ experimented with temporary users and uses by recruiting, curating and matching diverse mixes of users to available and appropriate sites. Earlier plans for *Plantage 9* reflected in zoning and land use plans indicated that the building would be demolished so that a connecting road could be built. Eventually, this was prevented when the technical challenges in realizing the road construction emerged; the municipality was at a loss as to how it could find another use for the site (Hasemann & Schnier, 2015b; Scholz & Mollenhauer, 2018). After the ZZZ approached and convinced the municipality to allow temporary users to access the site, a personable process and programme was accepted by all public administration stakeholders to help revitalize the site and also contribute to the urban district of Bremen West which had been hit hard by unemployment and social integration challenges (Hasemann & Schnier, 2015b; Pala, 2019). According to ZZZ and confirmed by temporary users, *Plantage 9* became the working home for 30 multifaceted users including artists, photographers, culinary entrepreneurs, university graduates and teachers. This diverse group made use of the building's combination of rooms and spaces as offices,

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warehouses, workshops, social space and canteen facilities that responded to the needs of the diverse group of users (Hasemann *et al.*, 2017; 2018, p. 8).

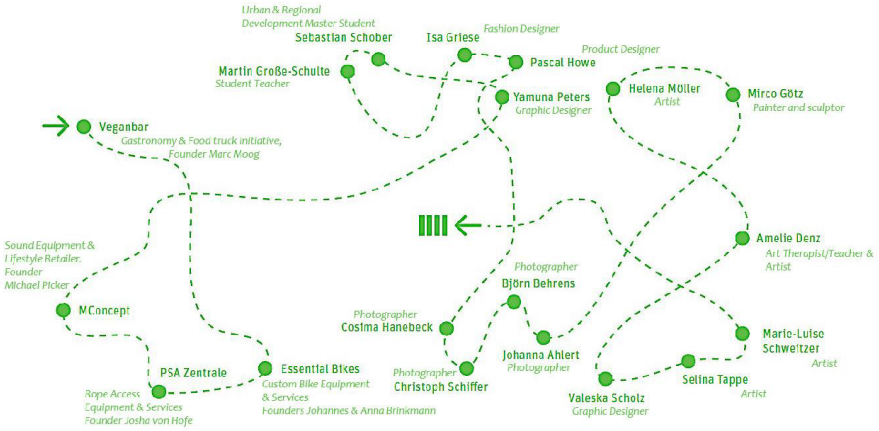

***Figure 2**. Adapted map of Plantage 9 actors (1st floor only) during the early stages of the collective action. Source: Plantage 9 (2011, p. 3).*

ZZZ coached the temporary use initiative by first supporting the users through a process of individual learning during which the entrepreneurs experimented with their businesses while learning about the procedural obligations of remodelling and adaptively reusing the abandoned store house. The remodelling was necessary for the building of roughly 1,600 m² which was built in the 1950s for textile production before housing a fire protection company and eventually becoming the municipality's property (ZZZ - ZwischenZeitZentrale Bremen, 2012; Scholz, & Mollenhauer, 2018). The costs incurred through this process totalled roughly 10,000€, and was accompanied by an even more extensive process of mutual learning and communicating while the temporary use agency was responsible for the management of *Plantage 9*. This initial phase to set up the temporary use collective constituted a trial period of one year, during which the public administration agreed to a symbolic rent of 1€ per m² for the sub-renters and temporary users so that they had affordable access to working space (Hasemann & Schnier, 2015b; Scholz & Mollenhauer, 2018).

As this trial period concluded, the ZZZ informed the users they would release themselves of management obligations and assisted the *Plantage 9* collective to determine their own model for managing of the site by providing support resources and training for the temporary users' informal board. In parallel, ZZZ themselves learned to guide the users through monthly meetings which helped the collective develop and regulate their own communication but also develop their own 'community' (Hasemann & Schnier, 2015b; Scholz & Mollenhauer, 2018). For Valesca Scholz, the spatiality, community and affordable rent solidified the users' commitment to the collective:

> …in actuality, it was primarily because of the cheap rents and secondarily because of the community or also the diversity [that attracted us here] – that we are not only artists or graphic designers, but a colourful mix of offices, ateliers and workshops that I

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> founded so great. So it is also the different spaces which facilitates the different uses (Scholz & Mollenhauer, 2018, p. 7).

At the collective level, the temporary users learned together and from one another how to make decisions and to manage group interests. For instance, all individual users are allowed veto rights and collaborative and creative solutions to resolving conflicts with uncontrollable utility costs (Scholz & Mollenhauer, 2018). A specific example, according to Olaf Mollenhauer was the collective decision to install counters on all the heaters so that it was possible to determine a fairer distribution of costs:

> So the problem that we had here I think were that of utility costs since the building is not very energy efficient and that we did not have a clear means of addressing cost allocation. So a couple of years ago, we installed counters on all the heaters. That meant that we could at least split the costs finally according to individual usage. This was, in hindsight, challenging because the bigger studios with higher ceilings and poor insulation were set up in such a way that their users suffered from exploding utility costs. However, with this new system in place, it meant that we could not only see the actual proportion of usages and costs, but that we could calculate retroactively the costs for up to two or three years back. We are currently considering if it might be worth it, to introduce a means of splitting costs in such a way to support some of the other users (Scholz & Mollenhauer, 2018, pp. 11–12).

Figure 3. *Frontal view of Plantage 9 façade located in a semi-industrial district of Bremen West. Source: Robin Chang (2015).*

AAA's own experience as temporary users and the nature of their more relational, instead of bureaucratic management approach created a strong foundation from which the new collective of temporary users could assemble and develop their heterogeneous spatiality of *Plantage 9*. It also facilitated a much more personable experience of learning about the legislative procedures and planning processes necessary to co-managing the leasing, negotiating of

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incremental increases in rent and also improving the structural compliance of the building in comparison to conventional processes (Hasemann & Schnier, 2015a; Hasemann & Schnier, 2015b; Scholz & Mollenhauer, 2018). Not only did the temporary use agents and the platform accompany a core group of temporary users who emerged as the formal board of *Plantage 9*, they sourced funding for the initiative through the municipal programs such as *Wohnen in Nachbarschaft* (Living in Neighbourhoods) which channelled federal and regional funding from the Social City and Rebuild the West programmes to complement the urban regeneration and social integration events and programming. This was a benefit for the collective and the greater area of Bremen West (Plöger, 2008a, pp. 20–23; Pala, 2019).

Figure 4. *Inner city vacancy during the winter of 2015 and 2016 in area of Bremen West surrounding Plantage 9. Source: Robin Chang (2015).*

The transition of the lease and management of *Plantage 9* to the collective in 2010 happened after the collective established their own tenants' association. The final model they selected for their collective institution eased and legitimized the group's co-management of the space, and also provided a legal entity through which they could address financial and liability concerns (Scholz & Mollenhauer, 2018). In addition to the formalization of the collective, the rental title was also transferred from the ZZZ to the tenants' association and the lease agreement was adapted so that they had the right to access and use the site for an unlimited period of time provided that they agreed to the condition to move out should the property owner give them four months' notice. Most notable, however, was the official agreement by all relevant parties to stretching the tiered rent increases of 30% from over three years to over ten years to adjust to the entrepreneurial development and growth of the now permanent users (Scholz & Mollenhauer, 2018).

The success of *Plantage 9* is not only a contentful pairing of vacant building and temporary users, but the result of ZZZ as an effective planning mechanism during a pivotal phase of experimentation and learning involving all manner of stakeholders possible (Hasemann & Schnier, 2015b). This is confirmed by the users who underline experimentation and social learning as integral steps in shaping their individual and collective abilities for facilities and

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association management, negotiation, and engagement while pursuing their own entrepreneurial aspirations. Valesca Scholz illustrates this through the development of her own engagement with the board of temporary users:

> 'So we did learn a lot. For instance, when the board of the users was already established, I transitioned into the collective management because of my involvement through the organization of the open-day event...As I fell into the role as a board member, I had no experience how to lead a group or group discussions or assemblies. This led to the reality that the earlier assemblies lasted three or four hours during which everyone shared and discussed everything. And this was also a development for us and other board members, I think – that we had to learn to lead collective discussions and better get to the point…' (Scholz & Mollenhauer, 2018, pp. 15–16)

A further demonstration of this committed success, was the ability of *Plantage 9* to survive independently after the ZZZ moved out of the space. This signified the independence and strength of *Plantage 9*, since by losing ZZZ, they lost one temporary user as well as their early temporary use manager who in 2013 moved onto another site – The WURST CASE, which is still the agency's current project (The REFILL Network, 2018). At the closing conference in March 2018 for the REFILL network which showcased ZZZ as a best practice to other European cities and initiatives, both public administrative representatives along with temporary use managers admitted that the continuation of the model was not without tension, as the justification for continued funding was still politically sensitive (Hasemann & Schnier, 2018). But they did agree that the active and political support they received from local and regional public administration was remarkable for Bremen and contributed to the stabilization of temporary use in the city (The REFILL Network, 2018). An ultimate confirmation of effectiveness, however, comes from the users themselves who expressed no fear of eviction from the site, respect and legitimacy in relation to the public and public administration and also confidence with their ability to continue with their businesses and means of sustaining their livelihoods at *Plantage 9* (Scholz & Mollenhauer, 2018).

This commitment to alternative planning mechanisms such as ZZZ and temporary use is a compelling example of experimentation through which temporary users learn from, and amongst each other to adapt not only uses but their own social functioning as a group. The willingness from the public administration to experiment allowed for the symbolic and affordable rents which supported the entrepreneurial initiatives. It is important to note that this experimentation did not come without political tensions and was not originally a political priority. Truly, examples of temporary uses are often embedded in greater waves of urban development wherein both disadvantages and even advantages are valid for a limited window of time and dependent on the political ebbs and flows of the moment (Madanipour, 2018).

Nevertheless, the opportunities afforded through the final commitment to experimentation facilitated a high degree of learning that benefitted the temporary users, improved the service delivery of the temporary use agency and also proved to the public administration that temporary use could contribute not only to urban renewal, but also micro-level economic development. This learning was socialized through group discussions, regular assemblies and collective decision making. It is also a collective commitment and a site-specific process through which a collection of individual users pooled and transformed their priorities from entrepreneurial individuality to community organized action. That this collective initiative still sustains itself institutionally and financially for its individual users, is a reflection of its actual and transformative strength. The latter is structured through the mobilization of actors who interactively organize and eventually self-identity within the boundaries of the temporary use site and entity of *Plantage 9*. While there is definitely a need to more precisely and empirically

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assess the collective action enacted through this case study, it is possible already to descriptively note a coalescence of agency. The politically enabled implementation of temporary use set terms of access which shaped the process of experimentation and social learning in the area of Bremen West. Aside from the beneficial instrumentation of temporary use, a critical point to note is that its reality was contingent on unexpected technical challenges that hindered the demolition of the vacant building. Thus, while the case study is a positive example of collective action through which the capacity to adapt is learned and built up by all engaged stakeholders, it is undoubtedly an exception to more common political trajectories that consider planning practices and economic development. Further, while a great extent of adaptive resilience was demonstrated by the stakeholders involved with the temporary use initiative, this quality of resilience was not constant through all dimensions, such as the building structure and environment.

The struggles that the users encountered through their experiments introduce more modularity and precision into how utilities were accounted for and managed presented a resilience paradox. While the function of the space and the building envelope might have contained and afforded experimentation and adaptation, the contrary was experienced with material and hardware details that reflected static designs. The members of *Plantage 9* exemplary demonstrations of social learning and adaptive management, were undermined by more durable legacies of outdated paradigms that often still stand and hinder the uptake of more adaptive and experimental uses of land and space. Indeed, unless adaptive capacity is also embodied in design of sites and structures which eventually may host comparatively flexible social processes and initiatives such as temporary uses, then a completely and purely resilient example of policy and practice is not possible. In reality, these blind spots will impose demands on stakeholders to compromise or resort to improvised design solutions which may serve stakeholders for a certain period of time, but are ironically neither truly sustainable nor fully resilient. It is advisable to consider examples such as *Plantage 9*, but alongside the wisdom from scholars such as Ahern (2011) and Lokmann (2017) who forward criteria such as multifunctionality, modularity, flexibility and scale that can strengthen adaptive planning and design and ultimately facilitate more comprehensively resilient solutions.

Transformative and Collective Connections between Resilience in Urban Planning and Economic Development

According to resilience scholars such as Ahern (2010, 2011, p. 342) and Davoudi (2012, p. 302), the paradigmatic inspirations from resilience for urban planning, governance and design supports a readiness for the unknown as an opportunity to explore low-impact and 'safe-to-fail' transformation. In relating this to *Plantage 9*, it is easy to identify characteristics that confront uncertainty and transformation through experimentation. Indeed, the readiness of the Bremen public administration to experiment through temporary use expressed both an explorative and 'safe-to-fail' approach to planning. A counterpoint to ponder, however, is that this path was not a choice, but the political option as there were no other alternatives but to adapt. Technical barriers hindered original land use plan developments; economic and budget constraints limited municipal investment available for the local development. But the decision to commit and pursue the temporary use experiment was enough initial investment into the collective structure of ZZZ and *Plantage* to manifest in abilities that evolved into directed and continuous action (Ernstson, 2011, pp. 276–277). Moreover, the connecting and embedding of individual agencies through the temporary use format involving social learning and experimentation was an even more efficient investment (Ernstson, 2011, p. 277) from a planning and economic development standpoint as it provided temporary users with the experience, knowledge and capacity to continue manifesting their individual and collective agency even after the policy experiment of temporary use ended. While temporary use as

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planning policy and practice clearly expresses itself as a mechanism for this social and relational change, there are challenges with a transformative collective action framework as it lacks a precise measure for effectiveness. Notwithstanding, this research does addresses gaps in research on collective action by highlighting policy rules to improve how public administrations can contribute to action in relation to incremental urban and economic development (van Karnenbeek & Janssen-Jansen, 2018, p. 403).

Plantage 9 offers an uncommon but encouraging narrative that emphasizes intrinsic capacities at the city-scale as opposed to relational capacities that depend on other networks beyond Bremen itself. This exemplifies what Ernstson and other colleagues differentiate as a resilience 'in' versus a resilience 'of' cities (Ernstson et al., 2010, p. 533). It is uncommonly optimistic and an option in an extremely progressive 'legacy of temporary uses and the footprint of differential spaces'(Andres, 2012, p. 771) through which temporary users often are not protected from risks and liabilities. The compelling takeaway, however is the economically opportunistic and socially profitable use of existing policies such as the National City Development and Social City programs in combination with local and entrepreneurial agency to manifest an inherent resilience of the city, in which risk and learning is shared. However, even such encouraging examples of resilience will be constrained unless resilience qualities are integrated into material as well as socio-economic planning and design. In such a fashion, future initiatives can contribute to resilience which is re-invested into the local economic development through the embedded and unfettered collective agency and action which has had the time to incubate and evolve its own adaptive and durable capacity.

Re-examining Post-Industrialization through Resilience

This micro-level explanation is important to consider in relation to resilience and transformation because it exemplifies the building of new and interconnected knowledge, the creation of networks linking different groups across societal levels, as well as effective opportunity-taking through planning policy and practice. This finer grained approach to analysing resilience in the context of economic development is not without need for improvement, because it is qualitatively exhausting and at best an approximate way to indicate resilience. Steps forward to measuring and monitoring the experimentation and social learning which help to confront resistant 'institutions, modes of thought, and ways of doing things' through social network analysis methods as applied by Ernstson in his ecosystem-based management context (2011, 255–256) could help improve the methodology. Nevertheless, this contribution complements existing efforts to demonstrate Bremen's evolutionary example as a 'Phoenix City' or a post-industrial city that has constructively confronted instability inherent to the industrial structures that once supported its Fordist growth (Plöger, 2008a, 2008b; Plöger & Kohlaas-Weber, 2013; Hall, 2014, pp. 415–416) through a social and adaptive resilience framing (Davoudi, 2012) which recognizes unpredictable, non-equilibrist dynamism and complexity (Martin, 2011, pp. 4–5). Its focus on economic transitions has aimed to show that it is possible for public administrations to recognized that despite cities' and regions' economic vulnerabilities, urban planning policy and practices can support the shift in economic and urban development strategies from an 'old economy' to a 'new economy'. Such a decision is complementary to generic economic programs but re-invest in site- and practice-specific experiments which not only help retain local entrepreneurs, but instil socialized learning and adaptive capacities to diversify local economies and to provide entrepreneurial independence for individuals and collectives.

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Closing Reflections

This contribution has attempted to improve and forward an analytical understanding of how collective action involved in entrepreneurially-driven temporary use contributes to resilience in an economic context. By framing the context and case study through an evolutionary approach to resilience, the qualities afforded through experimental and social insights indicate how adaptive capacity is learned and aggregated through urban planning practices and processes such as temporary use. This is valuable when considering economic uncertainty and crises and trajectories towards economic path-divergence that is dependent on adaptive capacity inherent to smaller unit organizations within regional and urban systems (Boschma 2015). By starting at the local level, it is possible to relate transformative collective action (Ernstson, 2011, pp. 255-256) to how economic vulnerabilities can be addressed through policy and planning investments in social-relational processes. The work to be done in this area, is however, far from complete since the line of reasoning presented here requires further steps to improve its utility in evaluating and connecting transformation and capacity between community and regional scales. The pursuit of this reasoning is valuable and should continue if we are to achieve local, regional and even global economic priorities for 'sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all' (UN-Habitat, 2017, p. 20) and confront organizational vulnerabilities that detract for economic resilience (UN-Habitat, 2017, p. 31).

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8.5.2. Urban Planning

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Article

How Do Scholars Communicate the 'Temporary Turn' in Urban Studies? A Socio-Semiotic Framework

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Abstract
Interdisciplinarity broadens urban planning praxis and simultaneously deepens how urban research unfurls. Indeed, this breadth and depth diverges and converges the understanding of current and popular concepts such as temporary use (TU)—also recognized as short-term or temporally undefined use of space. Through a meta-research, or research about research approach employing socio-semiotics and bibliometric analyses for the first time in relation to TU, I clarify the increasing scholarly attention to urban interventions by asking: How are urban scholars communicating the TU discourse? A socio-semiotic framework helps unpack the production of meanings as well as symbols channeled through the scholarly institutionalization of TU. Supporting this, I use bibliometric analyses to explicate the production and reproduction of meaning through keywords and citation networks in research literature. This study illuminates epistemological activities and reflects on directions tied to our understanding and articulation of a potential 'Temporary Turn' in theory and practice.

Keywords
bibliometrics; socio-semiotics; temporary turn; temporary use; urban studies

Issue
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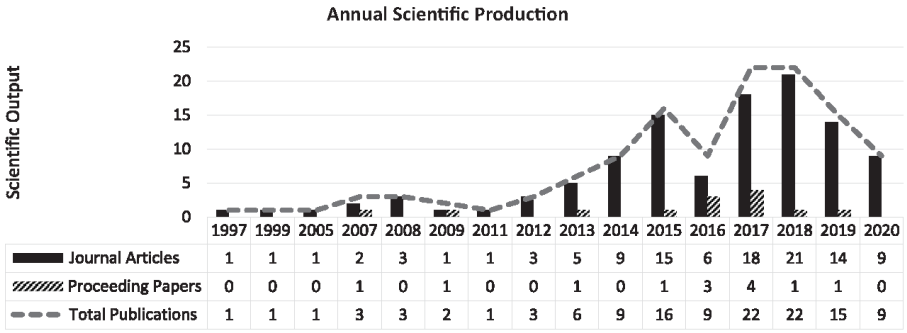
1. Introduction

Attention for temporary use (TU) grows and is marked by studies that consistently highlight how TU is leveraged for transformation (Martin, Hincks, & Deas, 2020). Recently, some outline a 'temporary turn' in urban research as well (Stillwagon & Ghaziani, 2019, p. 875). Motivated by this prospect, I look to the production of meanings in urban scholarship that steer current research orientations and ask: How are urban scholars communicating the TU discourse? One benefit of this pursuit is that it facilitates the momentary stock-taking of urban research on TU. Another benefit is that this builds on studies uncovering trends for the topic in urban planning literature (Stevens, 2018), policy (Honeck, 2018), and media discourses (Matoga, 2019b). Since the establishment of TU as a topic in scholarship, networked collaborations (Galdini, 2020; Stevens, 2018) or mobile and informal policies (Liu, 2017) continue to promulgate its relevance. This is also reflected by an ascending number of publications counts (see Figure 1) and thus invites better nuanced sensitivity towards the symbols and dynamics between practice and theory that support this trend. To set off on this task, I define TU by drawing on Bishop and William's (2012) identification of uses as well as interventions intended for short or undefined periods of time (see also Galdini, 2020; Kim, 2019; Vallance, Dupuis, Thorns, & Edwards, 2017).

Change-oriented intentions facilitated through TU evolve and are expressed in scholarship through a breadth of contexts. Since western European policy discourses in the 1990s introduced TU to address economic restructuring, deindustrialization and urban shrinkage (Colomb, 2012), the circumstances for TU have expanded to include creative cultures (Andres & Golubchikov, 2016), policy innovations (Honeck, 2017), design and activism (Tardiveau & Mallo, 2014) resilience (Chang, 2018) as well as post-disaster recovery and commons



	1997	1999	2005	2007	2008	2009	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Journal Articles	1	1	1	2	3	1	1	3	5	9	15	6	18	21	14	9
Proceeding Papers	0	0	0	1	0	1	0	0	1	0	1	3	4	1	1	0
Total Publications	1	1	1	3	3	2	1	3	6	9	16	9	22	22	15	9

Figure 1. The increase in literature featuring 'temporary use' from 1997 until 2020. This visualizes the climbing number of publications per year containing terms from the search query: ("temporary" OR "interim") AND ("use" OR "urbanism" OR "intervention" OR "design") AND including ("urban" OR "city" OR "town" OR "metrop*" OR "municipal*"). Years without publications are excluded for visual optimization.

(Dombroski, Diprose, & Boles, 2019). These shifts in praxis and policy position TU on a spectrum that extends from provisional responses in poorly performing cities to instruments leveraging time in neoliberal but also narrowly construed realms (Demailly & Darly, 2017; LaFrombois, 2017; Wesener, 2018). In parallel, this spectrum is continually propped up by an emerging logomachy of labels for TU; these undermine clarity for those trying to make sense of the topic (Matoga, 2019a). A potential way to reduce confusion and explain the increasingly numerous and variegated accounts for TU is to frame its discourse semiotically as an "articulation of ideology with settlement space" (Gottdiener, 1984, p. 101). This means that we must recognize how words and ways to articulate scholarship are "linguistic constructs," scaffolding abstract definitions or value-laden explanations for urban phenomena (Ledrut, 1986a, pp. 221–222). These may also help clarify a perspective on a 'Temporary Turn' in urban studies and relevant fields.

Semiotics, or the study of signs provides tools to highlight and explicate how certain symbols result and layer upon each other in the production of meaning (Li, 2017; Ogden & Richards, 1966). The Semiotic Triangle (Figure 2) delineates the relational production of meaning when a phenomenon (identified as 'referent') is perceived (by a 'signifier') and interpreted (as a 'signified'). These three entities link to form the corners of the Semiotic Triangle; together, they manifest the 'signification process.'

Theorizing in a semiotic manner supports my telos to reflect on how TU transcends from urban streets to studies. More precisely, this is possible by identifying and analyzing the mechanisms and dynamics with which scholarship communicates TU as micro-level "actions

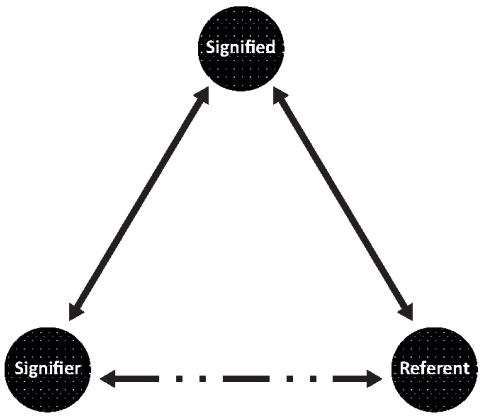


Figure 2. The Semiotic Triangle constituted relationally by the 'referent,' the 'signifier,' and the 'signified.'

and subjective intentions," to aggregate in "macro-level structures and objective meaning systems" (Li, 2017, pp. 522–523). The following sections undertake this research about research approach and pairs a socio-semiotic framework with bibliometric analyses. Up to date, this is unprecedented in relation to the topic of TU. This adds to few scholarly reviews of TU literature that currently include qualitative content analyses in empirical and policy studies (Stevens, 2018), discourse analyses (Honeck, 2017; Matoga, 2019b) and more common typological reviews of case studies in practice (Bishop & Williams, 2012; Bragaglia & Caruso, 2020; Oswalt, Overmeyer, & Misselwitz, 2013).

2. Introducing a Socio-Semiotics Framework

From early on, semioticians drew from language and communication studies to analyze signs. The reason being was to understand their associated meanings and how people, objects and the environment engage in the production of signs along with their representations (Ogden & Richards, 1966). As such, semiotics helps by recognizing verbal husks, such as keywords, and distinguishing them from their given meanings. We discern this after we see how signifiers interpret spatial referents by engaging in social processes of generating signifieds. This is emphasized visually through the Semiotic Triangle. Signs, united with meanings, affect and establish conceptual and emotional psychologies through relational and social signification processes (Li, 2017). Urban planning research is no stranger to this as demonstrated by comparable explications of topics such as 'urban practice' through textual analyses (Remm, 2016) or 'place' through linguistic and cognitive analyses (Möystad, 2018).

As a sub-method of semiotics, 'socio-semiotics' provides a tailored means to study signs specific to urbanity. This is because socio-semiotics foregrounds signification processes that relate to cities (Gottdiener & Lagopoulos, 1986), thus lending itself well to the explication of TU discourses. A socio-semiotic framework builds on urban semiotics by recognizing social interactions (i.e., temporary activities) as well as material objects (i.e., streets or buildings) as vehicles of signification processes; moreover, signification processes are not only social but can be ideological in quality (Gottdiener, 1984). Firstly, socio-semiotics integrates explication through the "scientific analysis of meaning in the urban environment" (Gottdiener, 1984, p. 112). Secondly, this accepts that many groups interpret urban life and generate "multi-coded" urban space (Gottdiener, 1986, p. 207). Ideology, in this case, is both context and mechanism in the production of meanings and influences how certain symbols dominate. As a result, the typology of socio-semiotic modes for producing meaning are not only spatial (material or environmental) and social (actor or activity) but also ideological (conceptual or theoretical). Lastly, these are interpreted both through arbitrary "readings" of the environment as well as through analyses of documented discourses (Gottdiener, 1984, p. 113).

2.1. Semiotic Triangle and Signification Processes

As introduced, the Semiotic Triangle is the primary tool to deconstruct signs and meaning by positioning together three fundamental mechanisms: the referent, the signifier, and the signified. Researchers operationalize these mechanisms when they perceive urban referents and interpret them selectively as TU signifieds. For instance, I do this when I observe a parking lot that is appropriated by pedestrians and describe it as TU. When referring to signifieds in scholarship, we can find them anchored as keywords. Authors or citation indices suggest or categorize these keywords (Aria, Misuraca, & Spano, 2020). Changes in keywords also superficially flag the stabilization and fragmentation of scholarly discourses, such as those relating to TU. In practice and reality, keywords may refer directly to referents that we recognize as enacting or interacting objects and phenomena. These often are the source of what a signifier, such as a researcher, communicates (in oral or written formats) to produce a final signified (representation of meanings, ideas, and experiences). Figure 3 illustrates the Semiotic Triangle with respect to TU. Spatial referents are represented in the bottom-right corner and could be temporary interactions between actors or artefacts; examples of these are flexible or modular installations such as appropriated and carpeted parking lots for pedestrian use. These active and social terms extend the inventory of spatial and conventionally passive or material referents such as 'road' or 'tree.' This is also a conceptual stretching of what a referent is and highlights socio-spatial qualities emphasized through socio-semiotics, while enhancing how we articulate spatial development.

In the bottom-left corner of the Semiotic Triangle are signifiers. These are the individuals investigating or engaging with referents. The resulting information they generate or disseminate about temporary phenomenon become coherent as symbolic concepts such as 'TU.' The latter can be identified semiotically as signifieds that sit at the top of the Semiotic Triangle. The linkage through this third and meta-level mechanism to complete the triangle is essential to the production of meaning channeled through signification processes.

Signification processes are not always one-off events. Sometimes, they build off each other through multiple and sequential iterations, during which the mechanisms of the Semiotic Triangle can switch positions. In a first order of signification, referent, signifier and signified relate and generate a denotational sign based on factual or physical perceptions and stimuli (Gottdiener, 1984; Li, 2017). The signs from this process have a "primary function"; these are real and indicative of utility (Eco, 1986, p. 65). For example, we see this through Indonesian civic initiatives converting parking lots into parklets and claiming to engage in TU (Prawata, 2015).

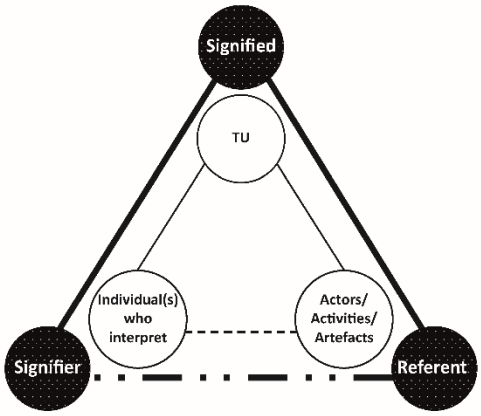


Figure 3. Semiotic Triangle and equivalent TU components.

The chain of signification processes, however, can continue at an abstract and connotative level to generate "secondary function" signs; these drive new, or distort established myths (Li, 2017, p. 526). Signs from second order signification processes represent symbolically and less functionally. In the case study by Prawata (2015), TU is a representation of a second order sign and also expressed as an instance of 'Tactical Urbanism.' The latter is a variant that potentially contests or superimposes itself on the former signified of 'TU.' Parklets in this vignette are no longer just temporary phenomena but place-making interventions that firstly drive TU and secondly contest or distort its myth through 'Tactical Urbanism.' Figure 4 illustrates Prawata's example of these layered orders of the signification process.

2.2. Institutionalizing Myths through Transfunctionalization

Both levels of signification involve the social production of meanings and engage different social groups. Returning to the parklet illustration, the first order of signification involves citizens and designer activists as signifiers. Whereas, the second order process involves a different social group including the author and other scholars who advance 'Tactical Urbanism' as an alterna-

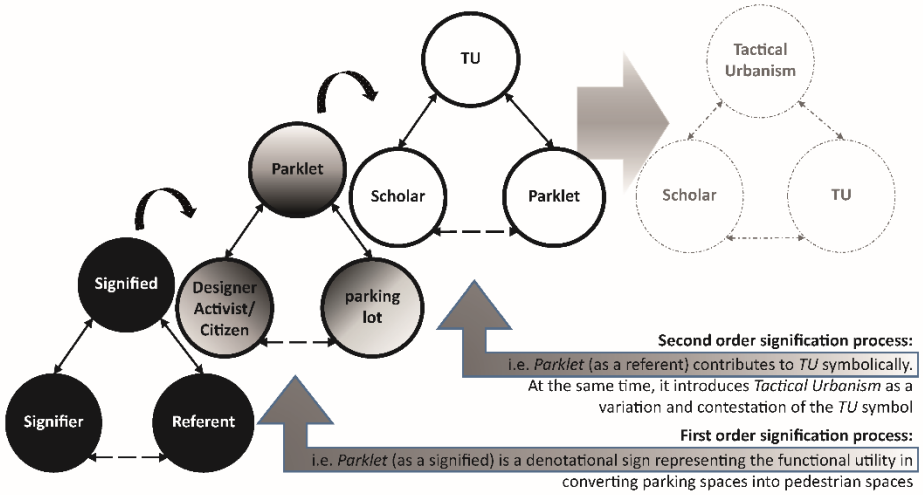


Figure 4. Illustration of the first and second order of signification through which 'parklet' as a semiotic mechanism switches positions, and 'tactical urbanism' is introduced as a variant of the 'TU' symbol.

tive signified. Attending to each iteration of the signification process are diverse perspectives that shape new and multiple meanings. As a result, interpretations abound with signifieds as "mythical creatures, extremely imprecise, and at a certain point [becoming] the signifiers of something else" (Barthes, 1986, p. 94). This characterizes plural or polysemic qualities in symbols such as TU, making them purposeful for many and yet increasingly nebulous for all. Signifiers engaging in the production of meaning can use these polysemic symbols as they see fit by taking advantage of, and contributing to rich overlays of ideological and second order signification processes (Gottdiener, 2011). An interpretation of TU, in this light, is that it metamorphoses unceasingly through a myriad of symbolic keywords. This is a process of abstraction (from a factual to functional symbol) and refraction (from theory to diverse meta-analytical myths) in scholarship. This is also a process of institutionalizing symbolic myths that are not yet coherent at the ground level, unless a symbol is explicitly articulated to create a new signified. For instance, 'TU' might appear in policy publications and thus progress a new symbol under the heading of 'Tactical Urbanism' for urban regeneration. Fortunately, it is possible to tease this out in detailed content analyses or through bibliometric techniques that analyse semiotic relationships. These analytical methods make clear how meanings and symbols aggregate in scholarship and are facilitated by epistemic communities who refract, channel and network their own interpretations (De Bruijn & Gerrits, 2018).

A socio-semiotic term for second order signification processes is 'transfunctionalization'; through this, "a distinction is made between the [immediate] use of objects and [the] socially sustained use of the object" (Gottdiener, 1985, p. 988; Krampen, 1979). The basis of 'transfunctionalization' is social and ideological. It re-creates meaning sourced from ideologies of diverse epistemic communities. Figure 4, hints at this for instance, and is confirmed by detailed examination of Prawata's (2015) text, which draws upon the urban design community and scholars to advance TU as 'Tactical Urbanism.' Other parallel socio-semiotic patterns can be drawn between TU and terms including but not limited to 'DIY Urbanism' (Iveson, 2013), 'Insurgent Urbanism' (Groth & Corijn, 2005) or 'Austerity Urbanism' (Gillespie, Hardy, & Watt, 2018). These underline how mythical ideas build and layer upon functional facts. Understood this way, TU is just as much about the immediate and functional activities on a vacant site as it is the summation of new TU symbols that now thrust us towards a possible Temporary Turn in scholarship. Spatial and social production of meaning propel and elevate semantic symbols such as 'parklet,' which scholars integrate into the reproduction of existing ideological concepts such as TU, or the generation of new alternatives such as 'Tactical Urbanism.' This also underscores a political economic framing of how a Marxist approach to the production of space (Lefebvre, 1996) and production of knowledge in the Althusserian sense, influence the building environment through symbolic or socio-semiotic processes (Gottdiener, 1984).

3. Methodology

In the previous sections, I introduced a socio-semiotic framework to explicate TU as an institutionalizing and polysemic concept. This results from spatial, social and ideological processes. To support this, I use bibliometrics to identify, summarize and visualize trends at a static point in time (Aria & Cuccurullo, 2017). Bibliometrics is useful for detecting shifts in scholarly discourses and confirming intuitive conclusions about scholarship development and dissemination (Kirby, 2012). The findings from these methods support the suggestion that signifieds embodied in keywords, produce TU while challenging it symbolically with new signifieds. These could reflect how research orientations might attempt to balance and pursue innovative narratives instead of re-enforcing stable accounts (Stillwagon & Ghaziani, 2019). The pairing of a socio-semiotic framing with bibliometrics to study TU has not been conducted up to date. This extends the range of bibliometric studies on urban topics such as resilience (Meerow, Newell, & Stults, 2016), participation (Certoma, Corsini, & Rizzi, 2015) and industrial districts (Hervas-Oliver, Gonzalez, Caja, & Sempere-Ripoll, 2015). Bibliometrics draws information from three types of indicators: publication count, citations and impact factor, as well as co-citation and co-word analysis. I queried these meta-data information through Web of Science (established by ISI/Thomson) by means of categorical combinations of keywords that 1) either explicitly or implicitly refer to momentary temporality, while not adhering to regular, linear nor strategic planning processes; these relate to 2) functionality and form; and are situated within 3) urban areas. The queries consisted of: ("temporary" OR "interim") along with ("use" OR "urbanism" OR "intervention" OR "design") in combination with ("urban" OR "city" OR "town" OR "metrop*" OR "municipal*"). The '*' symbol denotes a word root, which includes all words with the root in the query. I derived an earlier version of this query from initial reviews of publications on TU and finally expanded the query to include more spatial parameters, similar to other systematic reviews or bibliometric studies (De Bruijn & Gerrits, 2018; Meerow & Newell, 2015). The search queries employed both 'temporary' and 'interim' as these represent the earliest modifying terms for 'use' in initial publications; they are also direct translations from terminology in pioneering policies and instruments from mostly German-speaking regions of Europe (Havemann & Schild, 2007; Rall & Haase, 2011; Stevens, 2018).

I ran an initial query in March 2019 and repeated a second iteration in August 2020 to gauge for changes in output. The second iteration of the query generated 4,842 documents (4,321 documents in first round). From this, 4,568 (4,034 documents in first round)

English documents remained that I filtered down to 518 (443 documents in first round) documents based off urban planning relevant research categories. Since English serves as the lingua franca for scholarly communities, the query excluded other languages. Eventually, 481 (358 documents in first round) documents in the form of articles and proceeding papers remained, of which only 123 (119 documents in first round) were determined manually, as relevant. After reviewing the final corpus of documents (see the Supplementary File), analytical insights generated through bibliometrics helped substantiate my conceptual and socio-semiotic framing. Figure 5 visually breaks down the stepwise approach to the query and filtering strategy.

The key source of information for my findings are authors' keywords and citations; the latter indicate interest and recognition from other fellow scholars as well as the usefulness and qualitative impacts of journals (Archambault & Gagné, 2004). It is important to note that citations as a proxy of quality favour older publications that have had more time to attract an audience (De Bruijn & Gerrits, 2018). Co-word and co-citation analyses distinguish research activity through visualizations (Archambault & Gagné, 2004) and are applicable to publication counts, citations, and impact factors; these illustrate more nuanced relations within and between research fields by identifying and mapping key or influential authors (Archambault & Gagné, 2004). I make use of both co-citation and co-word analyses to illustrate influential authors as well as subject-relatedness and clustering of co-occurring terms in keywords, abstracts or full texts. Cluster or semantic maps help draw or confirm conclusions on emergent themes in research fields and visualize relationships through patterns of centrality and density (Aria & Cuccurullo, 2017; Fu & Zhang, 2017). For the analysis in this contribution I made use of the tool bibliometrix R-package and the Biblioshiny user interface, which were developed with R language to support standard bibliometric workflows (Aria & Cuccurullo, 2017).

4. Evaluating a Temporary Turn

The results from the bibliometric analyses confirm an increasing attention to, and variation in conceptualiz-

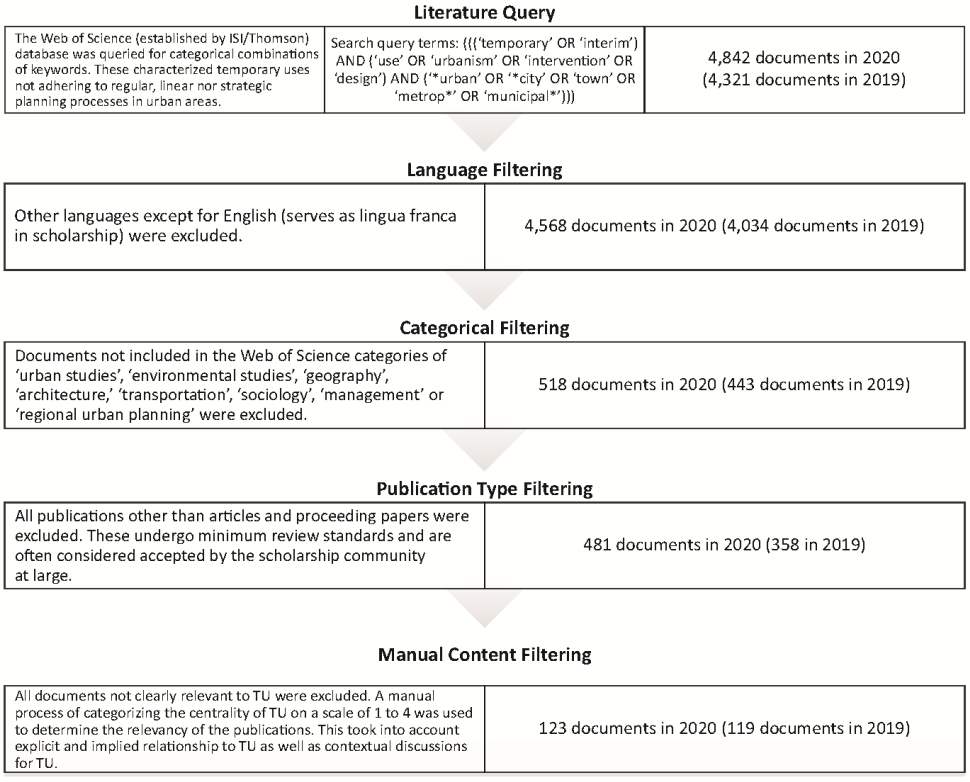


Figure 5. Breakdown of the stepwise approach to the literature search and filtering strategy.

ing TU since 1997. Figure 1 is a first indication of this. Along with publication counts, keyword dynamics can also be analysed through bibliometrics. Figure 6 traces the keyword growth associated with TU from 2007 and on; established keywords may as well serve as signifieds in this context. The analysis is generated through the cumulate occurrences of keywords with loess smoothing. At the surface, the keywords show how TU institutionalized and now contends with new and emerging signifieds. After 2011, new signifieds embodied in 'Temporary Urbanism' and 'Tactical Urbanism' appear. Also, they are increasingly more common than other keywords represented as modified 'urbanisms' (i.e., Austerity Urbanism, DIY Urbanism, etc.). Like TU, the use of 'Temporary Urbanism' and 'Tactical Urbanism' is pronounced according to keyword growth, since they achieved a minimum number of occurrences in order to aggregate enough significance. Notwithstanding, a manual content analysis substantiates that titular keywords such as 'Tactical Urbanism' or 'Temporary Urbanism' often subsume other keyword variants in the publication texts. These include but are not limited to 'grand urbanism' (Kassens-Noor, 2016), 'DIY Urbanism' (Talen, 2015) or 'Pop-up Urbanism' (Harris, 2015). 'Temporary Use' and 'Temporary Uses' are still comparably popular; most likely because they appear consistently in concert with the signifieds 'Temporary Urbanism' and 'Tactical Urbanism' as referent keywords. Only 53 out of the total 123 publications refer explicitly to TU as referents and discuss TU centrally as a signifieds. The remaining 70 publications imply TU through referents such as structures (Del Signore, 2017), interventions (Davis, 2008; Martini & Ramaccini, 2016), experiments (Copley, Bowring, & Abbott, 2015), spaces (McGlone, 2016; Muniandy, 2015) or clusters (Comunian, 2017) that are temporary. What is also inferred are distinct phases in scholarship; each of these frame TU differently. A first phase prior to 2011 discusses TU through denotative or first-order signification processes. Let us recall that these processes result in primary or functional symbols (Eco, 1986). The content analyses of earlier publications corroborate this as they feature typological studies of TU that discuss ranges and types of practices on the ground (Bishop & Williams, 2012; Groth & Corijn, 2005; Oswalt et al., 2013; Rall & Haase, 2011). Accompanying this, 'Temporary Uses' often appears to characterize the diversity of the pragmatic activities; these co-occur commonly with the keywords 'Temporary' and 'Design.' In this phase, initial and conceptual frameworks are presented. These are outcomes from studies that investigate transitions in governance or policy responses towards economic restructuring (Rall & Haase, 2011), neoliberalization (Groth & Corijn, 2005), or new forms of citizen engagement (Centner, 2012). Few publications, however, focus on TU through an entirely theoretical lens. Instead, the majority of the publications refer to provisional, diverse and utilitarian practices or methods (Dinzey-Flores, 2007; Havemann & Schild, 2007; Rian, Chang, Park, & Ahn, 2008; Schrooten, Coopman, & Kindt, 2007).

The latter and more recent phase in TU discourse is comparatively abstract with diverging keywords. This could signify the transfunctionalization of TU. There is a visible ascension of 'Temporary Urbanism' and 'Tactical Urbanism,' while the discussion of TU broad-

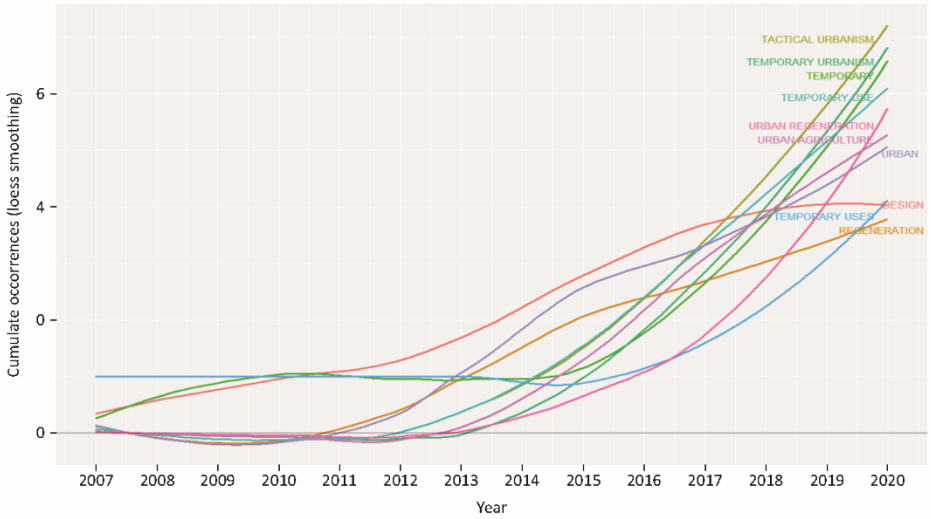


Figure 6. Growth of cumulative occurrences for top signifieds from titles, abstracts, and keywords, featuring topic of TU from 2007 until 2020.

ens to encompass general processes of urban transformation (Nemeth & Langhorst, 2014; Szaton, 2018). Put differently, the canvas for TU is expanding. What is notable, however, is the foregrounding of boosterist strategies for place-making (Galdini, 2020; Rota & Salone, 2014) that is repeated through other modes of action including but not limited to entrepreneurialism (Overdiek, 2018), creative cultures (Andres, 2013), or mega-events (Ferreri, 2019; Kassens-Noor, 2016). More prominently featured are also discussions on access to (Dubeaux & Cunningham Sabot, 2018) and the financialization of land through TU (O'Callaghan, Di Feliciantonio, & Byrne, 2018). These confirm or reproduce narratives and show that "urban space is not a simple container of social processes, but the condensation of often contentious group interactions"; these "[involve] signifying practices as much as non-semiotic processes, such as the class struggle at the place of work" (Gottdiener, 1986, p. 214). Political economic undertones sound and connect the production of knowledge through socio-semiotic processes with the built environment. At the same time, a Temporary Turn in urban practice that is catalyzed by socioeconomic pressures also reverberates in urban scholarship. These are reproduced through few, but prevailing TU signifieds that are nuanced with similar political and socioeconomic narratives.

Thematically, we can also discern this by mapping 500 of the most common and co-occurring keywords as illustrated in Figure 7. Distinct cluster bubbles feature the most common keyword in the cluster as the cluster label. Bubble size indicates the proportion of cluster word occurrences, and bubble location is a measure of Callon centrality and density (Aria et al., 2020). The latter is helpful for revealing themes that are "emerging or declining" (lower-left quadrant), "highly developed and isolated" (upper-left quadrant), "motor themes" (upper-right quadrant), and finally "basic and transversal" or relevant to a specific domain and the diverse research areas within a field (lower-right quadrant; Aria et al., 2020, pp. 821–822).

The most relevant clusters for a socio-semiotic framing of a Temporary Turn are positioned in the quadrants to the right. In the lower-right quadrant, TU represents the biggest cluster and co-occurs most commonly with 43 other keywords. 'Temporary Urbanism' follows suit as the second biggest cluster and co-occurs commonly with 40 other keywords. In comparison, 'Tactical Urbanism' is most weakly represented of the signifieds by co-occurring commonly with 30 other keywords (refer to *SM.2 Breakdown of Thematic Map of the 500 Most Common Co-Occurring Keywords and Keyword Clusters* in the Supplementary File for the full breakdown). The location of TU signals its fundamental and cross-cutting relevance. This affirms the status of TU as the more established signified within the diverse research areas of urban scholarship. In contrast, 'Temporary Urbanism' and 'Tactical Urbanism' are positioned towards the upper-right quadrant of the thematic map. Their locations indicate a high degree of development and importance for urban studies. In comparison to 'Temporary Use' however, there is not as high of a degree of interdisciplinary relevance for all urban research fields. A finer sweep of the co-occurring keywords show that ideologically or critically nuanced terms such as, but not limited

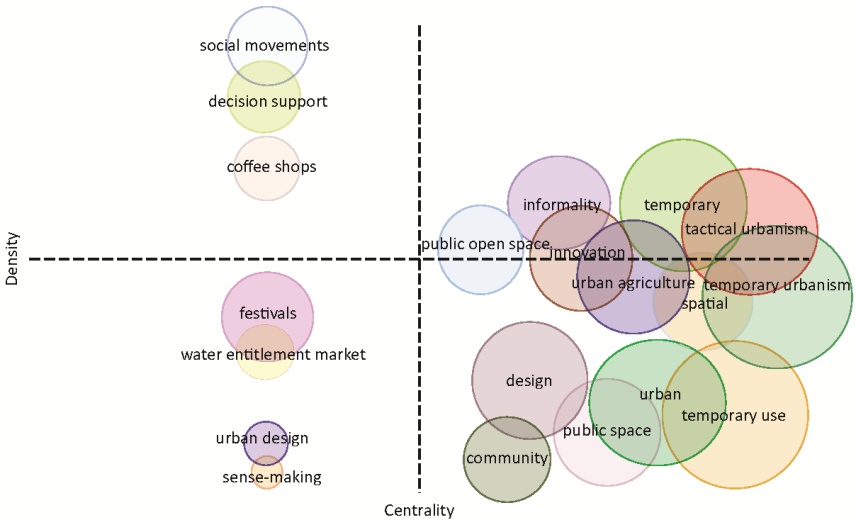


Figure 7. Thematic map of the 500 most common co-occurring keyword. Notes: Clustering and sizes are in relation the proportion of most common co-occurring words. Location determined by the Callon measure of density and centrality.

to 'utopia,' 'heterotopia,' 'spatial production,' 'planning theory' or 'intersectional feminism' do no occur often with TU. In contrast, they populate the clusters for alternative signifieds for TU; this supports transfunctionalization of TU through more recent and emerging signifieds. This also reveals new constellations of signifieds, referents and signifying authors, which extend the theorization of TU.

We need not stop here, however, as we can also relate the transfunctionalization of TU to specific and influential publications. Recall that the authors of the publications are signifiers in the Semiotic Triangle who shape the articulation and symbolisms of TU in relation to select referents. The historical citation network in Figure 8 visualizes how scholars draw on preceding contributions to cite earlier concepts and support new ideas (full list is included in the Supplementary File under *SM.3 Historical Direct Citation Network of Most Cited Publications*). Socio-semiotically speaking and confirmed through content analyses, these authors act as signifiers and link to the signifieds mapped in Figure 7 (i.e., TU, 'Temporary Urbanism,' 'Tactical Urbanism'). More recent contributions draw on the earlier concept of TU to propel new signifieds. At the same time, these also contribute to the reiterative and layered transfunctionalization of TU. These are patterned in different streams of citations with varying historical and topical legacies.

The stream with the longest legacy dates back to Groth and Corijn's contribution from 2005. Their publication centrally discusses TU through ranges of activities in the context of socioeconomic changes by means of multiple case studies. Further, it characterizes TU as facilitating shifts in governance and land policy; while new meanings for the production of space are discussed, 'Temporary Urbanism' and 'Tactical Urbanism' as signifieds make no appearance (Groth & Corijn, 2005).

A second and denser stream of citations draw on multiple works. These discuss TU while also introducing 'Temporary Urbanism' and 'Tactical Urbanism' as alternative signifieds (Andres, 2013; Harris, 2015; Honeck, 2017; Madanipour, 2018; Nemeth & Langhorst, 2014; Patti & Polyak, 2015; Tardiveau & Mallo, 2014; Vallance et al., 2017). In addition, there is a divergence in the methods of investigating TU in these later works. This is evident in the range of case studies (they vary from none to 11—the majority feature singular, in-depth case studies), integration of theoretical and analytical frameworks, inclusion of policy and discourse analyses, proposition or prototyping for new designs and even encouragement for pedagogical activism. This strongly suggests that TU is transfunctionalizing methodologically as well. TU is no longer framed solely as a pragmatic signified, but instead, understood through a plurality of meanings, studied in a variety of manners, and entangled in signification processes that draw from diverse communities and authors in scholarship. A Temporary Turn is reflected in scholarship as it is in practice, but more importantly, it is refracted through multiple socio-semiotic channels of urban scholarship.

5. Discussion

The socio-semiotic framework and bibliometric analyses that I present here delineate the early degrees of a Temporary Turn in urban planning research that transfunctionalizes TU. This shows how urban scholars articulate multiple symbols alongside TU, such as 'Temporary Urbanism' and 'Tactical Urbanism', fuelling what some might view as a boosterist, politics of signs (Gottdiener, 1986). The epistemic culmination of this capitalizes on and entrenches "place-bundles" of meaning through spatial, social and ideological processes (Zhang,

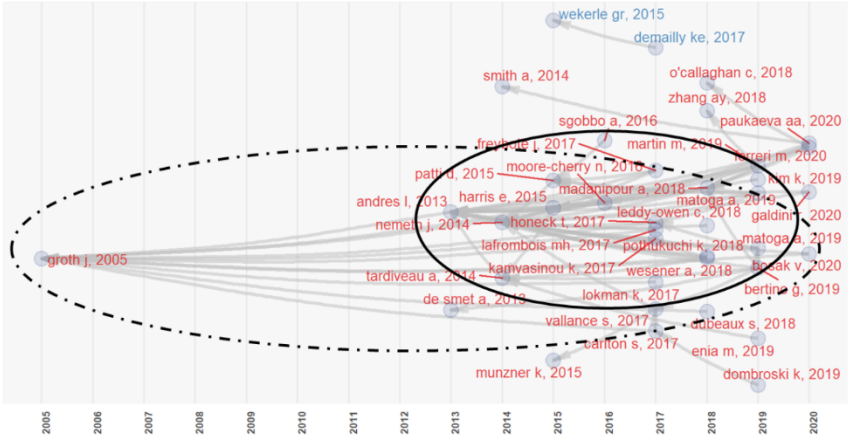


Figure 8. Historical direct citation network of most cited publications.

2018, p. 92). These are "contentious and contingent...on the ability of special interests to control the symbolic interpretations of processual outcomes in everyday life" (Gottdiener, 1986, p. 207). Urban scholars prioritize certain themes and represent these through their design of the Semiotic Triangle and advancement of TU-relevant signifieds. Depending on the narratives or inherited ideologies, patterns in the selection of signified and referents can be uncovered. These punctuate historical and scientific lines of inquiry, which we can trace through bibliometric methods. A socio-semiotic lens reveals that TU is polysemic; it links and qualifies space, experience, and ideology through many signification processes. These also emphasize Ledrut's claim that indirectly, "a city can never be more or less significant, it can only signify differently" (1986b, p. 115). Scholars, along with planners and other participants in signification processes, amplify and augment its meanings. In doing so uncritically, they risk perpetuating similar narratives and missing out on other symbolic realities or confounding TU discourse with diverging symbols.

With this knowledge, future work should continue to attend to TU and its symbolism, as is already being carried forth by those who highlight weaknesses in our understanding. Theoretically, this invites scholars to craft narratives with greater consciousness on temporary interventions by looking for new avenues to position and produce meaning in space and discourse (LaFrombois, 2017). This also demands that urban scholars studying TU look outwardly to find, scrutinize and integrate meaning through alternative lenses. Whether these lenses are angled, for example, through intersectionality to spotlight referents still shadowed by our eagerness to focus on exceptional practice (LaFrombois, 2017; Martin et al., 2020) or culturally to consider romanticized policies and antipathetic reactions (Bosák, Slach, Nováček, & Krtička, 2019; Honeck, 2018; Liu, 2017), there is still much work to do on TU. We have yet to fully understand more common forms and symbols of TU (Martin, Deas, & Hincks, 2019) or explore the intersection of meanings, as is the case with 'T/T Urbanism' that represents a "twofold concept" (Stevens & Dovey, 2018, p. 324). Indeed our capacity to "capture," "uncover" and "control" the symbols we communicate (Möystad, 2018, p. 48) about TU is still green. Most likely, this means that TU requires further study. There is place for this continued study in our journals, within our classrooms and even more so on our streets as recent challenges with the pandemic continue to heighten the immediate readiness for TU (Herman & Rodgers, 2020).

Considering the recent normalization of TU through pandemic-oriented policies and Covid-19 circumstances (Herman & Rodgers, 2020), citizens, practitioners and policy makers should also be made aware of the semantic challenges and socio-semiotic confusion involved with competing TU symbols. Certain social groups will prefer a particular TU signified over another. How these preferences finally present are often informed by the policy and research that urban scholars and planners perpetuate. In this light, the continuation of a critical and conscious treatment of TU is helpful in both theory and in practice. A more sensitive stipulation and re-working of how we communicate or manage communication about TU through collaborative transfer networks (Galdini, 2020) or policy publications (Patti & Polyak, 2015) could also be starting points for future learning and application. Since these are informed by scholarship, they offer comparatively direct opportunities for scholars to exercise their insights into policy and practice.

6. Conclusions

Here, I presented a research about research explication of how scholars communicate the TU discourse through a socio-semiotic framework. This contribution makes use of the Semiotic Triangle and its mechanisms (referent, signifier, and signified) to explain the transfunctionalization of TU signifieds that are represented in scholarly literature. Bibliometric methods support these analytical findings. These firstly, delineate how TU and new symbols embodied by keywords such as 'Temporary Urbanism' and 'Tactical Urbanism' are traced in keyword growth, as well as thematic and historical citation developments. Secondly, these also explain theoretically how urban scholarship is unfurling a Temporary Turn by representing and producing meaning for temporary practices through keyword symbols. We can discern these through different constellations of referent, signifier and signified. These advance multiple and dynamic signification processes that transfunctionalize TU as symbolic myths. Many of which repeat neoliberal undertones sourced from the functional signs we observe in practice. By illuminating the manners in which we communicate TU in scholarship and reproduce qualities from practice, I encourage urban scholars to ponder how we collectively produce space and symbols while engaging in an emerging Temporary Turn. The insights here can impact how we communicate about TU in scholarship, but also shine light on opportunities through semiotic processes to consciously and meaningfully advance TU. We can continue to engender specific socioeconomic agendas in scholarly discourse while confusing with symbolic variations. We also have the choice to more carefully attend to how we frame, abstract, and refract TU. Whether this is through greater criticality, inclusivity or objectivity—the degree to which we control and communicate TU or a Temporary Turn is our design.

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Conflict of Interests

The author declares no conflict of interests.

Supplementary Material

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

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8.5.3. Urban Research & Practice

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Rhythmic processes of temporary use: understanding spatially detached stabilization through fuzzy-set qualitative comparative analysis

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ABSTRACT

Considering the climbing interest to relate temporary uses with long-term change, this contribution explores how temporary uses demonstrate spatially detached stabilization (SDS) as well as the factors supporting this process. A rhythmanalytical approach helps reframe SDS temporally, while insights from existing research in the context of urban regeneration inform a fuzzy-set Qualitative Comparative Analysis (fsQCA) accounting for seven different factors. The contribution analyses data collected from 40 cases in the cities of Bremen (DE) and Rotterdam (NL) to reveal that combinations of factors support the trajectories of SDS. These foreground spatial and functional concerns and invite further inquiry.

KEYWORDS

Temporary use; spatially detached stabilization (SDS); fuzzy-set Qualitative Comparative Analysis (fs-QCA); Rhythmanalysis; urban regeneration

1. Introduction

Temporary uses are not always congruent with long-term plans. In urban development, they are activities that are intentionally short or undefined in duration (Bishop and Williams 2012, 5). As well, they express site- and time-specific 'punctures,' which mitigate momentary challenges through 'punctual' responses (Landgrave-Serrano, Stoker, and Crisman 2021, 1–2). Yet temporary uses are more than their fleeting appearances and need to be framed holistically in relation to longer processes – even if these relationships seem less ostensible (Madanipour 2018). This need grows with the heightening readiness for experimentation in contexts of crises (Herman and Drozda 2021). It also grows with the uncertainty resulting from pandemic induced and ad-hoc solutions, which many suspect to become *new normals* (Scholssberg et al. 2021; Lamker, Horlings, and Puerari 2020). Studies on temporary use in the context of urban regeneration probe this holistic framing through a lineage of thinking that developed since Oswalt et al. identified strategies, which 'coach', 'formalize' and 'exploit' through temporary uses to reify along or with broader regeneration aims (2013, pp. 222–223). This thinking continues to shape how we understand processes of temporary use as stages in the regeneration of brownfields (Andres 2013) or as taxonomies of practices and processes (Bragaglia and Caruso 2020; Lydon and Garcia 2015). It also uncovers second-order processes stemming from temporary use such as

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professionalization or collaboration (Moore-Cherry 2017; Ferreri 2019; Vivant 2020 see also Bishop and Williams 2012). Yet, still weakly understood in this line of thinking, are how temporary uses can change, skip through, or pop-up in multiple locations over time. These instances of temporary uses, like the stolons and hidden roots of a plant extending into earth as it sprouts new shoots, inspire this contribution to unearth trajectories of spatially detached stabilization (SDS) for temporary uses. To facilitate this study of temporary uses in the context of urban regeneration, this contribution asks: How can we understand spatially detached patterns of stabilization? Further, how do different combinations of factors help stabilize temporary uses in this manner?

The following sections respond to these questions first by introducing a rhythmanalytical framework to delineate and understand SDS as temporary use 'trajectories' (Andres and Kraftl 2021, 7; Lefebvre 2004). These trajectories stabilize through combinations of many factors, which can also be perceived as bundles of institutional rhythms (Blue 2019). By framing processes of temporary use this way, it is possible to address a conceptual constraint through which temporary uses are temporally and narrowly recognized by their *duration*. Following this is a presentation of the methodological approach employing a fuzzy-set Qualitative Comparative Analysis (fsQCA) to untangle the factors contributing to processes of SDS. Altogether, these add novel perspectives on how temporary interventions support longer-term change in the context of urban regeneration (Bragaglia and Caruso 2020; Kamvasinou 2017).

2. A rhythmic re-framing of temporary use

Processes of temporary use, when reframed as rhythmicanalytical trajectories allow us to conceive temporariness more effectively as relational gradients instead binaries (Kamvasinou 2017). For instance, permanence can become temporary if we view urban phenomenon through their life cycles. Conversely, temporariness can be permanent if we consider the extent of sustained informality in some regions of the world. Andres and Kraftl assert we should 'rethink and develop a conceptual language around practices and process of urban temporariness' (2021, 2) and point out how *duration* of temporary uses is often prioritized; this confines the definitions of time and temporality attributed to temporary uses. Indeed, temporality understood in this way restricts thinking on temporary use practices and processes by seeking out spatially fixed forms of temporary interventions. These are embodied in 'functionally neutral buildings' for temporary use (Bergevoet and Van Tuijl 2016, 119) or social patterns of clustering in milieus that concentrate at specific locations (Oswalt, Overmeyer, and Misselwitz 2013). Instead of characterizing temporary uses by their 'in-between,' irreversible, or terminable temporal qualities (Andres and Kraftl 2021, 2; see also Dransfeld and Lehmann 2008), the notion of *duration* enforces a spatially myopic conceptualization of temporary but complex uses that are hosted for intervals of time at singular or unchanging locations. This thinking and theorizing emphasizes Henri Bergson's description of duration as 'linear and progressive time' that is convenient to observe (Lyon 2019, 20) because it "has both a material substrate and a basis in perception with memory (Moran 2015, 6–7). Exclusively focussing on this characterization, however, neglects other less obvious and iterative qualities of time. These obscure qualities

become discernible through phenomenon like SDS, which pursue their own *trajectory* or 'path followed by a "place" concerned with temporary urbanisms' (Andres and Kraftl 2021, 6). *Trajectory*, in this sense, expresses stabilization processes as 'attuned to the (possible) changes in everyday rhythms, socioeconomic contexts and material circumstances of any place' (Andres and Kraftl 2021, 6). For temporary uses that replicate or reiterate activities through a series of subsequent sites, this highlights the rhythmic patterns, pathways and places through which they move. Thus, a temporal focus on *rhythmic trajectories* helps us to perceive 'the establishment of the times and places in which activities of a certain kind regularly go on' (Blue 2019, 3). This conceptual reorientation extends temporal concerns for urban phenomenon by complementing duration with *rhythm* as pivotal in practices and processes of temporary uses – particularly for those reflecting SDS.

The marking of *trajectories* with *institutional rhythms*, leverages rhythmanalysis as a theory of everyday rhythms to explain how rhythms surface 'only if [they enter] into practice [... or] **into use**' (emphasis in the original, Lefebvre 2004, 69). Andres & Kraftl delineate informal and formal temporary urbanisms as urban trajectories (2021); these could be constituted by rhythms that are temporal, interactive, in motion and practiced (Blue 2019; Chen 2016). The possibility to mark and emphasize these temporal rhythms (Lefebvre & Régulier, 1985) is facilitated through the identification of 'rhythmic bundles' or entanglements of material and social processes (Chen 2016, 4). Temporary uses exemplify such a rhythmic bundling of materiality in the built and natural environment (i.e. buildings, fields, etc.) with social processes (i.e. experimentation, regeneration, professionalization, oplace-making, etc.). The identification of rhythmic bundles serves as a starting point for illuminating different rhythmic trajectories of temporary use. It also uncovers processes or 'ways that practices are linked, how they become more and less densely connected, temporally and in all other kinds of ways' (Blue 2019, 18). In short, identifying urban trajectories and their rhythmic bundles is a mindful re-framing for 'how practices become more fixed and flexible within bundles, complexes, and constellations and how connections become more entrenched, established, and institutionalized' (Blue 2019, 18).

2.1. *SDS as syncopated and (Ar)rhythmic trajectories*

If we understand how urban surroundings encompass and express many diverse rhythms, then we recognize how urban environments are polyrhythmic (Crang 2003). SDS, in this regard, represents temporary uses in polyrhythmic environments as rhythmic bundles as well as sources of place-creation. Lyon sees this rhythmic place-creation as 'arising from intersection[s] of multiple mobile rhythms in the built environment' (2019, 39). These embed, entangle, and institutionalize themselves through diverse trajectories that feedback through place-making effects into temporary practices. These interactions generate new states of (dis)harmony, which can emerge harmoniously as synchronized states of eurhythmia or incongruous and syncopated as states of arrhythmia (Lefebvre 2004). By interpreting processes of temporary use from this lens, SDS emerges as (ar)rhythmic trajectories that are syncopated. These are spatially detached from singular spaces unlike fixed, synchronized and eurhythmic trajectories of temporary use. The syncopated trajectories of SDS emphasize iterative 'practices [that] establish and strengthen connections' (Blue 2019, 19–20). These emerge

at multiple and diverse sites, such as temporary uses that may have become 'captured' in regulatory systems (Martin, Hincks, and Deas 2020, 4). These could also occur through repeated tenancy contracts or permissions for the same operation. In considering processes that form and stabilize temporary use institutions (Eshuis and Gerrits 2019), these trajectories reveal the need to redress the spatial myopia through which the alternative temporal patterns of SDS have been poorly understood. Some of this myopia has been facilitated by inadequate methodological approaches, to which proceeding sections will attend after introducing urban regeneration as a polyrhythmic context for temporary use. The later provides the spatial and background contexts for the methodological and analytical discussions that follow.

3. Urban regeneration: a polyrhythmic context for factors supporting SDS

According to Stevens (2018), improvements for deteriorating urban space leveraged through temporary use is a recent development. This happens through the repackaging of temporally delimited tactics as creative, cultural, or place-making efforts to catalyse regenerative transitions following decline such as urban shrinkage or post-industrialization (Colomb 2012; Patti and Polyák 2015). Imperatives for and processes of urban regeneration have also been accelerated by continuing trends toward welfare retrenchment and austerity (Peck 2015; Bragaglia and Caruso 2020; Rabbiosi, Coletti, and Salone 2020). From a temporality angle, Andres and Kraftl highlight how temporary uses in trajectories of activation for urban regeneration 'are layered over existing path-dependent outcomes and are swept away as path-dependent outcomes are reinstated' (2021, 9). What emerges are polyrhythmic and interpenetrating trajectories of temporary use against broader transformation processes; these are fraught with complex challenges (Rabbiosi, Coletti, and Salone 2020) and not reducible to singular factors of influence (Eshuis and Gerrits 2019). Indeed, temporary practices have relational and complex qualities (Wohl 2017) and likely are an outcome of diverse interacting factors. These factors combine and (re)configure through the rhythmic bundling of temporary uses, which we could study more effectively by means of a multiple and cross-case approach. According to Martin, Hincks, and Deas (2020), research on temporary uses up to date commonly employ in-depth or descriptive methods illustrated through single or few case studies. In other words, urban studies perpetuate certain methods and thereby entrench certain manners of studying temporary use processes. These manners are methodological, but also imply conceptual conventions as well (no wonder the over-concentration on *duration*). So, while existing literature can be a source of inductive insights on the influential factors that support SDS, it is currently inadequate for understanding or explaining SDS. Here, we find starting points for our subsequent fsQCA approach.

3.1. *Breaking down the many factors of SDS*

The factors influencing temporary use stabilization are many and varied. They range from social inclusion (Bragaglia and Rossignolo 2021) to public administrative engagement and policy development (Patti and Polyák 2015). They recognize spatial opportunities (Stevens 2018) and commonly accent physical or material qualities – particularly in studies framed through design perspectives (Paukaeva et al. 2020). These factors also express different social and material processes with their own

Figure 1. Set definitions and expectations derived inductively from existing literature.

respective temporal trajectories. Some trajectories are unmoving and fixed markers of time. Others, like SDS, are syncopated trajectories along which stakeholders juxtapose continuous temporalities with animated or pop-up interventions.

To breakdown the possible factors in the trajectories of SDS, this work draws on a data set from recent analyses of literature on temporary use (Chang 2021), to identify and categorize factors contributing to SDS (Figure 1) into two broad categories of social factors (yellow) and material factors (blue). Within the first category are the factors of *entrepreneurial management* (EM), *risk perceptiveness* (RP), *adaptive capacity* (AC), and *interactive attachment* (IA) and *municipal support* (MS). Composing the second category are the factors *functional compatibility* (FC) and *spatial affordance* (SA). The synthesis for these factors draws on key references (row two) to inductively inform expectations about how each factor contributes to stabilization (row three). Finally, rearticulations of the expectations as set definitions (row four) orient subsequent analyses. Later sections will discuss the latter.

In combinations, these conditions might interact to produce SDS. Before detailing the methods and analyses, the following sections discuss briefly the factors and how they might interact or bundle before emerging as syncopated trajectories of SDS.

3.2. *Social factors*

Social factors inform temporary users' experiences and general ability to engage other stakeholders with adeptness and reflexivity. This is core to the subcultural, creative and alternative communities that attract temporary uses and encourage individuals to become 'producers of cultural goods and services' (Murzyn-Kupisz and Działek 2017, pp. vi–vii). Concerning stabilizing initiatives, Moore-Cherry (2017) amongst others observe temporary users' opportunism or professionalism as a means for helping temporary uses become durable or grow (see also Overdiek, 2018). Thus, combinations of creativity and pragmatism temper individual and collective experimentation into forms of spatial entrepreneurship (Oswalt, Overmeyer, and Misselwitz 2013). For this reason, I assess temporary use initiatives' indication of the condition of *EM* by accounting for their operational expansion or extension. Expansion or extension could appear as enterprises that are experimenting, starting-up, sustaining or scalable.

Entrepreneurial astuteness helps temporary users facilitate new valorisation models for vacant spaces and structures (Galdini 2020; Lange and Schuessler 2018). But this quality is not without awareness for the constant, but fluctuating intensity of risk (Madanipour 2018). Depending on the stakeholder, the perceptions and experiences with risk in relation to temporary use are different and uneven (Martin, Deas, and Hincks 2019; Peck 2015). Some suggest that temporary users are socialized to accept or become ambivalent towards precarious circumstances (Ferreri 2019); this enhances their ability to persist. For this reason, I evaluate *RP* for temporary use cases by means of how they indicate risk-ignorance, risk-ambivalence, risk-sensitivity, or risk-readiness.

A quality that enhances temporary users' entrepreneurial management and risk perceptiveness is adaptive capacity in the absence of planned certainty (Galdini 2020). This internal capacity commands individuals' motivation and focus on learning through experimentation (Gainza 2018; Lehtovuori and Ruoppila 2012) or social interaction (Oswalt,

Overmeyer, and Misselwitz 2013). To this end, I assess for indications of *AC* across cases of temporary use that range from non-existent, limited to static and dynamic capacities.

A final and key condition from a temporary users' standpoint is that of interactive attachment. Enduring activities involve users who exchange information and services at higher interaction rates; these bolster collective identity building (Galdini 2020). Milieus also enhance interaction and attachment by facilitating networking or clustering (Oswalt, Overmeyer, and Misselwitz 2013). These activities tend to root in particular locations (Bragaglia and Caruso 2020). To evaluate for *IA*, indications of no interaction and no attachment; no interaction, but sense of attachment; through, inconsistent interaction and attachment; to regular and intensive interaction and attachment inform the analysis of cases.

Although creative and entrepreneurial individuals might catalyse and sustain temporary uses, social factors are not limited to temporary users. Public administrative support is just as important. This is particularly so because of how flexible activities intersect temporally with other globally induced trends as well as temporally structured and selective planning processes (Abram 2014; Madanipour 2018). Stabilized temporary uses bridge parallel processes of intervention and development and optimally synchronize different strategic aims or temporal scales (Bishop and Williams 2012). Beyond modulating the stratified and diverse tensions, municipal support can provide resources directly to stakeholders in the forms of funding, platforms, policies, templates, consultation or capacity building; these are typically crucial for temporary uses to persist (Hou and Grohmann 2018). Municipalities also support temporary uses indirectly; intermediaries such as temporary use agents or incubators facilitating temporary use are examples of this (De Smet 2013; Vivant 2020). Either way, the administrative and 'creative discretion' that is brought to bear on 'context-responsive improvising' (Forester, Verloo, and Laws 2021, 15) is required by temporary uses and its relevant processes. To evaluate the condition of *MS*, cases are assessed by indications of passive, reactive, facilitative or active municipal engagement.

3.3. *Material factors*

The final set of factors helping to stabilize temporary uses stress the tangible and physical attributes of the temporary use sites and installations. Many temporary uses that become permanent profit from how functions are harmonized either through filtered or organized co-location of activities. This usually requires the adaptive reuse of vacant sites or structures to reduce or avoid competing or unnecessary nuisances (Marian-Potra et al. 2020). In trying to optimize compatibility, temporary use stakeholders might account for and integrate spatial or functional needs during the formation of milieus (Di Marino & Lapintie, 2017; Krivý 2013). Spin-off effects from this may draw other amenities or enhance temporary users' abilities to anchor professionally (Cilliers et al. 2015; Vivant 2020). Therefore, I asses *FC* by means of stated potential for functional conflict, functional ambivalence, functional filtering or functional programming.

Additionally, temporary users regularly and selectively engage with their environment depending on type of vacant spaces that become available for use when the different temporal scales of developments are misaligned (Hwang and Lee 2019). While some individuals account for spatial affordance by choosing specific locations early on because they offer better accessibility to patrons or higher pedestrian traffic (Overdiek, 2018), others are satisfied with spaces that include cost-effective or flexible

financing options (Gainza 2018; Marian-Potra et al. 2020). Sometimes, environmental aesthetics and atmosphere are sources of identification and inspiration for temporary users (Vivant 2020). For this final condition, I assess *SA* by identifying whether cases indicate accessibility to spatial affordance; accessibility and flexibility to manage spatial affordance; accessibility, flexibility and corresponding fit of the spatial affordance; or accessibility, flexibility, corresponding fit and inspiration.

Altogether, the dimensions of EM, RP, AC, IA, MS, FC, and SA reflect social and material factors that in combination, or as rhythmic bundles, help stabilize temporary uses. As introduced earlier, combinations of these factors – in varying configurations – could determine the syncopated trajectories of SDS. Since the process of stabilization carries out over multiple locations instead of committing to a single site, an initial and theoretical expectation was that specific SDS patterns might result from activities oriented towards professionalization of temporary use. These rely heavily on the availability and accessibility of space (SA) as well as the capacity to facilitate multiple and compatible activities within these spaces (FC). No comparable study exists up to date to test this initial and theoretical expectation in a cross-case approach. Accordingly, the following sections introduce the set-theoretic methods for this novel and comparative analysis of temporary uses following syncopated trajectories of SDS.

4. Research approach & analysis

Researching the patterned trajectories of stabilization requires methods that tease out the combined impacts from many interacting factors. With roots in set-theory and applicability for small, intermediate and large-N studies (Greckhamer et al. 2018; Pagliarin and Gerrits 2020), Qualitative Comparative Analysis (QCA) is an appropriate method that is responsive to this need. The method helps identify bundled combinations of factors associated with certain outcomes (multiple conjunctural causation) and helps indicate the various trajectories associated with certain outcomes (equifinality) (Schneider and Wagemann 2012). Also, this method allows for cross-case comparisons while appreciating socially complex and emergent processes (Gerrits and Pagliarin 2020); SDS is an example of the latter. At a granular level of analysis, QCA considers the presence and absence (causal asymmetry of combined conditions) of conditional factors (Gerrits and Verweij 2018), while using Boolean algebra to articulate differences between necessary and sufficient conditions (Ruhlandt et al. 2020). In preparing for the analysis, I score the factors across each case with membership values and thresholds. These scores are then analysed for combinational patterns that may occur together with or through the trajectories of specific outcomes. Put differently, no single factor is a condition for the patterned trajectories for SDS and temporary uses. Rather, different configurations of multiple combination of factors can emerge as conditions for SDS. The analysis eventually provides a final solution formula requiring interpretation; this interpretation is completed through iterations of calibration that relate the qualitative and scored data (Jopke and Gerrits 2019). At the same time, this process involves a 'dialogue' between the theory and the empirical work (Ruhlandt et al. 2020, 4; Ragin 2014). The procedure described in following sections follows QCA steps based on work by Ruhlandt et al. (2020) and Jopke and Gerrits (2019). These combine both inductive and abductive approaches. This contribution makes use of fuzzy-set QCA, one of

Table 1. Area of homogeneity between the different spatial contexts in Bremen (DE) and Rotterdam (NL). This is broken down into comparative categories and points. This also draws on supplementary online materials (Chang and Gerrits 2021a).

	Points of Homogeneity for Case Study Contexts	
	Bremen	**Rotterdam**
Statistics and Geography	• population: 567,559 • surface area: 326 km squared • situated 65 km inland along the Weser River Statistisches Landesamt Bremen [Bremen State Statistical Office], 2020; Statistisches Landesamt Bremen [Bremen State Statistical Office], 2019	• population of 650,000 • surface area: 319 km squared • situated 30 km inland along the Maas River Gemeente Rotterdam [City of Rotterdam], 2020; Chief Marketing Office Rotterdam, 2009
Urban Development	• historical and contemporary industries relying on maritime and port activities (shipbuilding, shipping, warehousing, trading) • heavily bombed during WWII as a result of key industrial and trade activities ○ inner-city extensively destroyed then rebuilt	
Urban Policies	Power et al., 2010; Plöger 2008; Plöger & Kohlaas-Weber, 2013 • urban regeneration policies ○ innovative and economic diversification ○ social cohesion ○ spatial experimentation ○ temporary uses for the adaptive reuse of brown fields and vacant buildings ○ temporary use for social integration and economic development ZwischenZeitZentral Bremen [ZZZ], 2012; Hasemann et al., 2017; Ziehl et al., 2012	Van der Schoor 2010; Le Couvreur, 2015; Groenendijk & Vollaard, 2015 • urban regeneration policies ○ integrated programmes for housing and neighbourhood improvement ○ spatial experimentation ○ regeneration policies were pioneering in the Netherlands ○ temporary uses also in post-war rebuilding through provision of tent for temporary cafes and shops ○ temporary use through incubator policies Eshuis and Gerrits 2019; Van der Schoor 2010; Tillie et al. 2016

various QCA techniques (Schneider and Wagemann 2012), to analyse cases from the urban contexts of Bremen (DE) and Rotterdam (NL). The two contexts have documented histories reaching back to the 13th century as waterfront villages (Plöger 2008; Van der Schoor 2010). Please refer to Table 1, Table 2 which presents the area of homogeneity (Ragin, Berg-Schlosser, and De Meur 1996) that contextualizes the study and its methodological procedures. The proceeding sections detail the latter.

4.1. *Methodological procedure*

Within the case study contexts of Bremen and Rotterdam, the methodological procedure continued with the selection of temporary uses spaces ranging from office space, workshops, and cafes to gardens and storefronts for analysis. These hosted initiatives that ranged from festival organizers, to café and concept storeowners, graphic designers, community recreational groups to artistic and programmatic foundations as well as start-ups and furniture builders (Chang and Gerrits 2021a). The case studies featured here are temporary uses represented by forms of a legal entity (i.e. association, foundation, or private companies). At the time of the interviews, the duration of the initiatives

Table 2. Calibrated data matrix analysing SDS of 40 temporary uses.

Row #	CaseID	Conditions							Outcome
		RP	EM	IA	AC	MS	FC	SA	SDS
1	BD01	0,33	0,33	0,33	1	1	0	1	0,67
2	BL01	1	1	0,67	1	1	0,33	0,67	0,67
3	BL04	1	0,67	0,67	1	1	1	1	1
4	BP01	0,33	0,67	1	1	0,67	0,67	0,67	0
5	BR01	1	0,67	0,33	1	1	1	1	0
6	BW01	1	0,67	0,67	1	1	1	1	0,67
7	BW04	1	0,67	0,67	1	0,33	0,67	1	0,67
8	BZ01	0,33	0,67	1	1	0,67	1	0,67	0,33
9	R07	1	1	0,67	1	0,33	0,67	0,67	1
10	RF01	1	1	0,67	1	0,33	1	0,67	0,67
11	RF02	0,33	0	0,67	1	0	0,67	0,67	0
12	RF04	0,67	0,67	0,67	0,67	0	0,67	1	0,67
13	RF06	0,33	0,67	0,67	0,67	0	0,67	0,33	0,67
14	RK01	1	1	1	1	0,67	1	1	0,67
15	RK03	0,33	0,67	1	0,67	0	0,67	0,67	0,33
16	RK04	0,33	0,67	0,67	0,67	0,33	0,67	0,67	0,33
17	RK05	0,67	1	1	1	0	0,67	0,67	0,67
18	RK06	0,33	0,67	0,67	0,67	0,33	1	0,67	0,33
19	RK07	0,33	0,33	1	0,67	0,33	1	1	1
20	RS01	0,33	0,67	1	1	1	0,67	1	0
21	RS02	0,33	0,67	0,67	1	0	0,67	1	0,33
22	RS03	1	0,67	0,67	0	0	0,33	0	0,33
23	RS04	1	0,67	0,67	1	1	1	1	1
24	RS05	0,33	0,67	0,67	0,67	0,67	0,67	0,67	0,33
25	RS06	0,33	0,33	0,33	0	0	0,67	1	0,67
26	RS07	0,33	0,67	0,67	0,67	0	0	0	0
27	RS08	1	0,67	0,33	0	0	0,67	1	0
28	RZ01	0	0	0,67	1	0,33	0,67	0,67	1
29	RZ03	1	1	0,67	1	0,67	1	1	1
30	RZ05	1	0,67	0,33	1	0,67	0,33	1	0,33
31	RZ06	1	0,67	1	0,67	0,67	1	1	1
32	RZ07	0,33	0,67	0,67	1	0	0,33	0,67	0,33
33	RZ08	1	1	0	0,67	0	0,67	0,67	0
34	RZ11	0,33	0,67	0,33	1	0	1	0,67	0,67
35	RZ12	0,33	0,67	0,67	1	0,33	1	0,67	0,33
36	RZ13	0,67	1	0,67	0,67	0,67	0,67	0,67	0,67
37	RZ14	0,67	0,67	1	1	0	0,67	0	0
38	RZ16	0,67	0,67	0,33	1	0	1	0,33	0
39	RZ17	0	0	0	0	0,33	0,33	0	0
40	RZ18	0,33	1	0,33	0	0,67	1	0,67	0,33

ranged from one year to 19 years and are broken down according to the context city (Figure 2).

A mix of individuals and partnerships or collectives represented and managed the temporary use initiatives. Some cases were engaged in secondary activities with social or collective orientations. To illustrate, temporary users of a multifunctional hall could

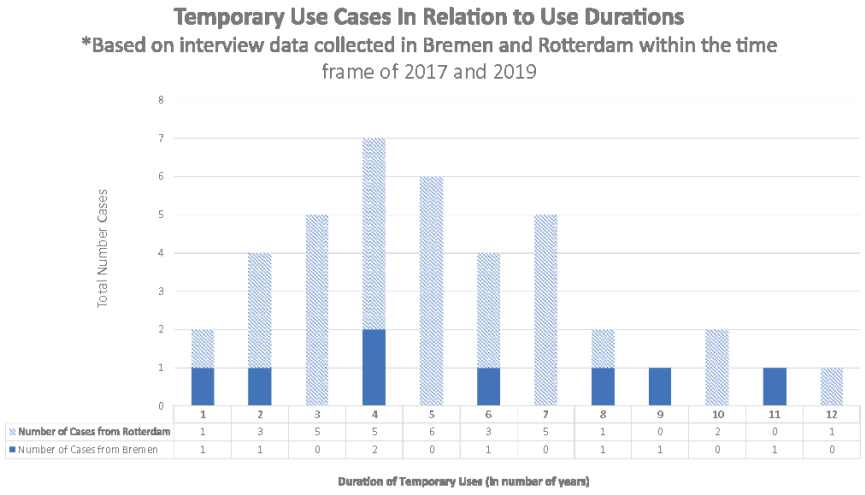

Figure 2. Breakdown of temporary use cases according to their durations and spatial contexts.

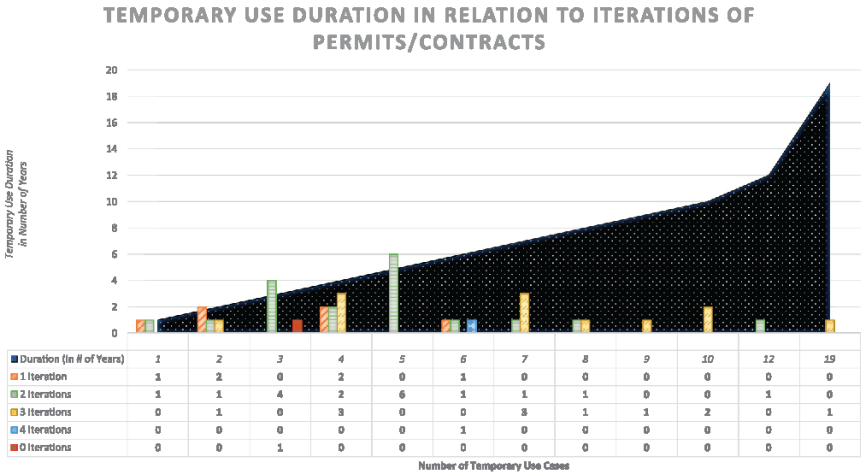

Figure 3. Temporary use duration in relation to iterations of tenancy agreements.

prioritize their individual businesses and start-ups, while also engaging in the collective management of the building through an association they established together. Mostly, stabilized temporary users received at least two iterations of tenancy agreements for the same operational activity (Figure 3). Finally, a range of spatial detachment was demonstrated (Figure 4, Figure 5).

The analysis draws on interviews conducted between 2017 and 2019 that considered 40 temporary use initiatives (9 from Bremen; 31 from Rotterdam). This ratio of cases between the two cities was not problematic since the analytical factors reflected generally relevant mechanisms contributing stability and present in both settings.

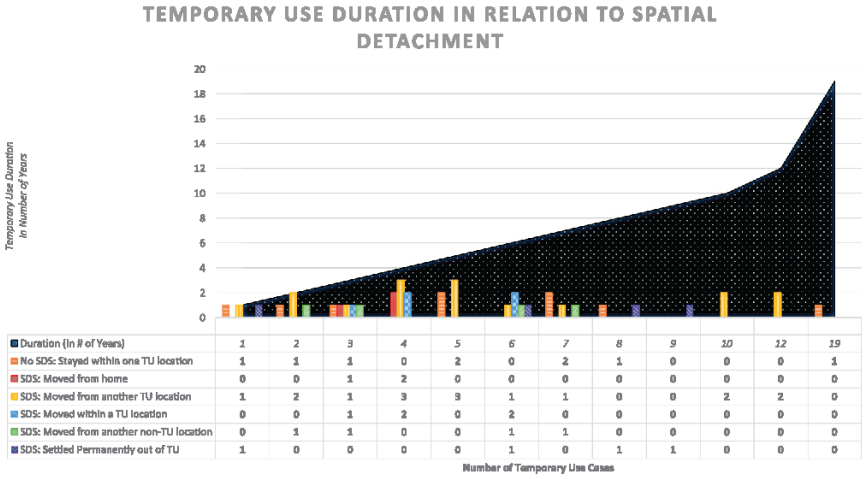

Figure 4. Temporary uses duration in relation to spatial detachment. 'TU' is the abbreviation for 'temporary use Seven cases represent the largest clustering of SDS cases for a duration of four years. A single non-SDS case has the greatest longevity of 19 years. Two cases demonstrating SDS have endured for 12 years.

Moreover, the set membership definitions and indicators account for potential place- or policy-specific differences. For instance, I evaluate variations in municipal support through four specific indicators that are relevant to all spatial contexts.[1] The interview strategy and questions[2] addressed actors involved in establishing or facilitating other uses, and followed up on additional case studies introduced by the interviewees; this reflects the snowball sampling method (Kumar 2011). A plateau in the variety of answers and referrals to previously interviewed contacts indicated substantive saturation. This point also concluded the interviewing process. In total 65 stakeholders provided statements from which 53 transcripts resulted.[3] The transcription and coding of the interviews followed a code tree derived from factors, expectations and set definitions outlined earlier. The coding followed Intercoder Reliability (ICR) procedures to ensure unbiased interpretation and procedural consistency (Lombard, Snyder-Duch, and Bracken 2002; MacPhail et al. 2015). Additionally, triangulation of information provided through the interviews for validity and reliability was facilitated by cross-referencing over 150 archival and policy documents cross-referencing (Denzin and Lincoln 2018). The code tree, ICR procedures, and cross-referenced policies are accessible as online supplementary materials (Chang and Gerrits 2021a).

To facilitate the subsequent calibration, a translation of the initial set of factors (Table 1 contributing to SDS resulted in threshold scores represented by a fuzzy-scale (0, 0.33, 0.67, 1; also elaborated in Table 3). These enabled the analysis of 'imprecise' characteristics across all cases (Ragin 2000, 3). For instance, temporary users might express strong identification with a location, but rarely interact with the area; this is a more effective means for evaluating conditional factors instead of crisp or binary demonstrations of a conditions. Table 3 presents this translation as a calibrated data matrix, which guided the iterative of calibration that followed. I used the 'indirect method' of calibration that builds up 'initial

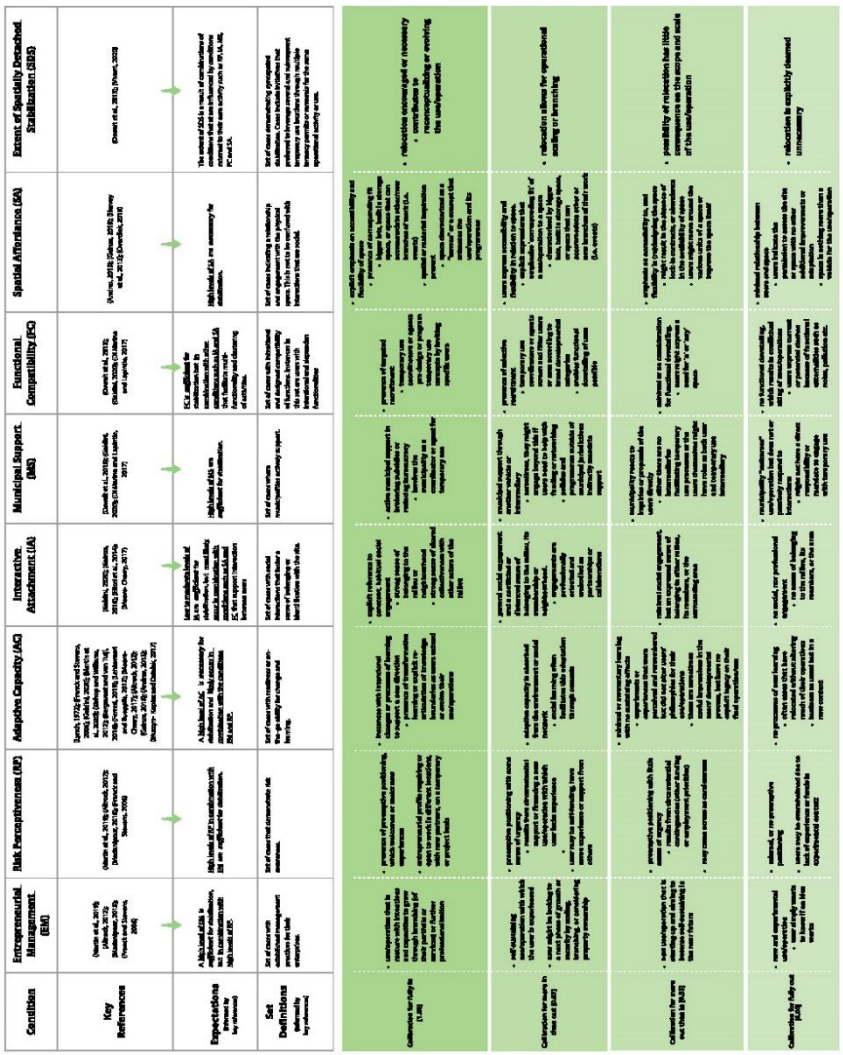

Figure 5. Set definitions and expectations as well as conditions contributing to SDS of temporary use and variables expressed as degrees of membership in condition. Key references draw from recent analysis of temporary use literature (Chang 2021).

grouping of cases into set-membership scores' (Schneider and Wagemann 2012, 35), that is cross-referenced and refined through case-based interpretations and literature derived scientific knowledge (Ruhlandt et al. 2020).

Upon populating a calibrated data matrix and completing the calibration phase, I conducted an analysis for necessity[4] before determining a consistency threshold of 0.90 – as close to 1.0 as per standards of good practice (Pagliarin, Hersperger, and Rihoux 2019; Rihoux and Ragin 2009). Testing for necessity helps indicate conditions always necessary for a certain outcome; these are absent when the outcome is absent, too (Rihoux and Ragin 2009). Consistency thresholds are required to determine sufficiency or subset relationships of factors that are always present when the outcome also is present (Haesebrouck 2019; Schneider and Wagemann 2012; Wagemann and Schneider 2007). Since there is no previous comparable analysis setting precedence, I set the cut-off for the consistency value at 0.90 after several iterations of testing showed that no gaps were generated in consistency scores occurred between the cut-off value as well as the standard and recommended the threshold-floor of 0.75 (Rihoux and Ragin 2009; Wagemann and Schneider 2007). The lack of preceding and comparable studies on this topic restricted the ability to test for skewedness.

Following this phase, QCA relies on truth tables generated from the calibrated data matrix to "visualize and analyse central features of causal complexity (Schneider and Wagemann 2012, 8–9). For this contribution, the truth tables were generated with the software Tosmana version 1.61 (Cronqvist 2019). The tabular representation of cases and conditions helps to highlight the possible configurations of conditions along the rows that mark certain trajectories associated with the outcome of SDS. The truth tables present conditions with translated degrees of membership. Fuzzy values below 0.5 display as 0 s and those above are represented by 1 s.

Analytical contradictions can appear when cases demonstrate membership in conditions that reflect inconsistently between the data matrix and truth table. This results in the impression that 'the same row leads to both the occurrence and the non-occurrence of the outcome' (Schneider and Wagemann 2012, 120). Various strategies are available to resolve contradictions. These include adding conditions, re-specifying the sampling population or re-specifying how conditions are assessed; this require a finer tuning of the calibration that draws from theoretical arguments to avoid 'a blunt data-fitting exercise' (Schneider and Wagemann 2012, pp. 120–121). In this study, contradictions did occur. The presumption was that these resulted from the high number of conditions, since intermediate-N analysis commonly select between four and six or seven conditions (Rihoux and Lobe 2009). To address this, an initial strategy was to separate the single model into two; the theoretical rationale was to 1) tease out the influence of material factors, in relation to 2) different agendas for general temporary uses and professionalized temporary uses (Kohoutek and Kamleithner 2013). For instance, temporary uses prioritizing functional compatibility (in the case of programming or managing the co-location of various uses) versus those with a more general penchant for spatial affordance could indicate material priorities with a specifically professional agenda. Subsequently, two models facilitated two separate analyses to help foreground comparatively functional compatibility and spatial affordance. Both models were analysed in conjunction with the other factors (RP, EM, IA, AC and MS).

To generate the final analyses, a last iteration of recalibration accounted for intricate relationships constituting the management of the temporary uses, and interactions with

neighbours as well as public administration. Adjustments were made to membership scores for RP and EM and accounted for how temporary users framed their activities differently and specifically as entrepreneurial operations. Some users demonstrated extreme ambivalence to risk as a part of their tenancy (RS01, RZ13, RS04, and RZ18), while others were in comparably earlier phases of stabilization and thus admitted the need to address their ignorance to risk (BD01). Other users engaged in temporary use through secondary activities, such as volunteering, side-occupations, and networking (RK05, RZ18). The recalibrations also addressed IA and FC membership scores to differentiate between temporary uses co-located with other temporary users and those who were independent tenants. More specifically, the scores were more sensitive to neighbourly sociability or hierarchical relationships (BD01, BR01, BW04, R07, RF04, RZ01, and RS01). Lastly, membership in MS scores were changed to account for those supported by the public administration with regard to location changes (RZ01, RZ05, RZ06, and RK07).

Eventually, three contradictions (rows 13, 19, and 28) persisted. They were considered acceptable since one instance was no longer active during the time of the interview (RZ01), the other was a volunteer or tertiary side-project (RK07, RF06). All other cases involved temporary uses as primary or secondary sources of income. The following sections present the truth tables analyses and expand upon the more intricate relationships between SA (Table 3) and FC (Table 4). These also detail the minimization process as well as final solution configurations.

Table 3. SA – model through QCA methods investigating the SDS of temporary uses.

Row #	Conditions						Outcome	Consistency Score	Cases	# of Instances
	RP	EM	IA	AC	MS	SA	SDS			
1	0	0	0	0	0	1	1	1	RS06	1
2	0	0	0	1	1	1	1	1	BD01	1
3	1	1	1	1	0	1	1	0,929	BW04, R07, RF01, RF04, RK05	5
4	0	1	0	1	0	1	1	0,9169	RZ11	1
5	1	1	1	1	1	1	1	0,9008	BL01, BL04, BW01, RK01, RS04, RZ03, RZ06, RZ13	8
6	1	1	0	1	0	1	0	0,8319	RZ08	1
7	1	1	0	1	1	1	0	0,8305	BR01, RZ05	2
8	0	1	0	0	1	1	0	0,8291	RZ18	1
9	1	1	1	0	0	0	0	0,7976	RS03	1
10	0	0	1	1	0	1	0	0,7889	RF02, RK07, RZ01	3
11	1	1	0	0	0	1	0	0,7253	RS08	1
12	1	1	1	1	0	0	0	0,721	RZ14	1
13	1	1	0	1	0	0	0	0,7127	RZ16	1
14	0	1	1	1	0	0	0	0,7052	RF06, RS07	2
15	0	1	1	1	0	1	0	0,6311	RK03, RK04, RK06, RS02, RZ07, RZ12	6
16	0	0	0	0	0	0	0	0,569	RZ17	1
17	0	1	1	1	1	1	0	0,5665	BP01, BZ01, RS01, RS05	4

Table 4. FC – model through QCA methods investigating the SDS of temporary uses.

Row #	Conditions						Outcome	Consistency Score	Cases	# of Instances
	RP	EM	IA	AC	MS	FC	SDS			
1	0	0	0	1	1	0	1	1	BD01	1
2	0	1	0	1	0	1	1	0,9169	RZ11	1
3	1	1	1	1	1	1	0	0,8937	BL04, BW01, RK01, RS04, RZ03, RZ06, RZ13	7
4	1	1	0	1	1	0	0	0,8859	RZ05	1
5	0	0	0	0	0	1	0	0,8755	RS06	1
6	1	1	0	1	1	1	0	0,8733	BR01	1
7	1	1	1	1	0	1	0	0,8665	BW04, R07, RF01, RF04, RK05, RZ14	6
8	0	1	0	0	1	1	0	0,8291	RZ18	1
9	1	1	1	1	1	0	0	0,8187	BL01	1
10	1	1	0	1	0	1	0	0,787	RZ08, RZ16	2
11	0	0	1	1	0	1	0	0,7496	RF02, RK07, RZ01	3
12	1	1	0	0	0	1	0	0,7481	RS08	1
13	1	1	1	0	0	0	0	0,7253	RS03	1
14	0	1	1	1	0	1	0	0,6484	RF06, RK03, RK04, RK06, RS02, RZ12	6
15	0	1	1	1	0	0	0	0,6401	RS07, RZ07	2
16	0	0	0	0	0	0	0	0,6226	RZ17	1
17	0	1	1	1	1	1	0	0,5335	BP01, BZ01, RS01, RS05	4

4.2. *Truth tables & minimization*

The next step in the procedure condensed the analyses into truth tables that exclude logical remainders. The latter are 'truth table rows that lack enough empirical evidence to be subjected to a test of sufficiency' (Schneider and Wagemann 2012, pp. 152–153). This resulted in 17 rows or, possible and robust combinations of factors for each model that generate the outcome of SDS. This is less than the possible 64 configurations of combined factors ($2^6 = 64$). In both truth tables, the combination of conditional factors that characterize singular and shared associations to SDS are present. For the former, a single row lists one instance for a combination. Row one of Table 5 is an example listing one instance (RS06). In contrast, shared associations appear when a single row lists multiple instances. To illustrate, row three lists five instances (BW04, R07, RF01, RF04, and RK05). Recall here that the scores are dichotomized, but still represent fuzzy-set values for the possible combinations that result in stabilization. Rows highlighted in grey are combinations that do not meet the consistency threshold of 0.90. Acceptable contradictions from the calibrated data matrix discussed previously appear in red.

In the SA-model, two single combinations of factors appear with the outcome SDS (row 1 and 2). However, multiple rows meet the consistency requirement (rows 1, 2, 3, 4, and 5). The majority are singular instances for SDS (row 1, 2, and 4). These represent

Table 5. Six Minimized configurations and solutions supporting the SDS of temporary uses.

	Minimzed Configuration	Consistency	Coverage
SA	~RISK PERC * ~ENT MGMT * ~INTER ATTACH * ADAPT CAP * MUN SUP * SPAT AFFORD	1	0.1243
	~RISK PERC * ~ENT MGMT * ~INTER ATTACH * ~ADAPT CAP * ~MUN SUP * SPAT AFFORD	1	0.1243
	~RISK PERC * ENT MGMT * ~INTER ATTACH * ADAPT CAP * ~MUN SUP * SPAT AFFORD	0.9169	0.195
	RISK PERC * ENT MGMT * INTER ATTACH * ADAPT CAP * SPAT AFFORD	0.8874	0.6963
	Solution	***0.899***	***0.7863***
FC	~RISK PERC * ~ENT MGMT * ~INTER ATTACH * ADAPT CAP * MUN SUP * ~FUN COMPAT	1	0.0889
	~RISK PERC * ENT MGMT * ~INTER ATTACH * ADAPT CAP * ~MUN SUP * FUN COMPAT	0.9169	0.195
	Solution	***0.9336***	***0.2485***

either smaller established enterprises utilizing temporary use opportunities (RS06, RZ11), or cultural initiatives that matured through temporary use experiments (BD01). Two clustering of cases (row 3 and 5) share the two different combination of factors that co-occur with SDS. The former clustering highlights cases that are mature initiatives with a history of changing locations to accommodate the spatial demands of their operation. The latter clustering highlights initiatives that actively manage temporary interventions, since five out of the eight cases manage temporary uses or interventions. According to the SA-model, those who have consistently moved did so because they needed more storage, production space, or desired more affordable access. Secondary to this are those who professionalized their temporary use practices. Contradictions between the analysis and the calibrated data matrix only occur in rows not meeting the consistency threshold.

The FC-model, presents a singular combination of factors occur when the outcome of SDS is present. Only two rows meet the consistency assessment (row 1 and 2); these cases also meet consistency thresholds in the SA-model. No cases share the same combination of factors. This model suggests that while functional harmonization might play a part in the syncopated and stabilized trajectories of temporary use, it may not be as much of a priority for the majority of SDS cases. Despite expectations for functional compatibility to be as important as spatial affordance for temporary initiatives that manage the other temporary uses, its relevance is not as marked in this model. The fact that both cases (BD01, RZ11) do not represent temporary uses that co-locate with other temporary uses underlines this finding. Rather, the cases seem to relocate for natural and built amenities that better serve their initiatives. These included the access to water for recreational purposes (BD01) and the central train station (RZ11). A greater number of discrepancies between both the calibrated data matrix (in red) as well as the SA-model (underlined) emerge within this model. This notwithstanding, the limitations to the analysis were accepted since the analysis followed rigorous ICR procedures.[5] In addition, a thorough review of literature on successful temporary use cases informed the analytical assumptions tested in this model.

5. Results & discussion

A set of conservative solutions contribute to the final-minimized configurations from the SA- and FC-models. These represent the most important combinations of factors

that appear in conjunctions with temporary use exemplifying SDS (Table 5). XY plots are included as an alternative visualization of this.[6] Absence is denoted with the symbol ~. Recall that the analysis excluded logical remainders. Because of this exclusion, the analysis generates conservative, as opposed to parsimonious or intermediate solutions. It is only possible to generate parsimonious and intermediate solutions when counterfactuals or pre-existing assumptions are available (Schneider and Wagemann 2012). These were not available as no comparable analysis precedes this study.

The solutions indicate that SDS constantly needs the presence of SA, unless excluded as in the FC-model. This is understandable and confirms the importance of physical, symbolic, and functional accessibility to space (Marian-Potra et al. 2020). This study also considers financial accessibility as a dimension of SA. In circumstances that do not consider SA, the presence of AC and the absence of IA is always present when SDS occurs. This affirms that cases resulting in SDS with a higher capacity for adaptation located independently and without engaging a supportive collective or milieu. This is plausible in the FC-model because initiatives prioritize individual (as opposed to social) and functional needs; accompanying this, they have a higher degree of self-reliance to facilitate adaptation. Furthermore, similar configurations between the SA- and FC-model suggest complex interplays between how temporary uses relate and engage with the physical and functional environment. Physical draws are more likely to influence the extent of how syncopated and spatially detached temporary uses are. This highlights how spatial attributes might have greater relevance than considerations for functional programming for processes of SDS. This notwithstanding, there are relationships between the two that require further study.

Another noteworthy insight is the near constant absence of RP for temporary uses that do not stabilize in a fixed location. This need not mean that temporary users are not sensitive to risk as demonstrated otherwise in previous studies (Ferreri 2019; Kamvasinou 2017; Vivant 2020). For these temporary users, there could be a greater degree of socialized acceptance or ambivalence to risk (Marian-Potra et al. 2020). The absence of RP also often occurs with the presence of AC; this could translate as temporary users' re-framing of risk as opportunities for holistic or transformative learning that is not limited to the adaptation of new spaces. Interestingly, both the presence and absence of EM share equal weight in processes of SDS. The extent of discounting RP also counters expectations since much of the literature problematizes entrepreneurial risk. Possibly, the availability of, and the extent to which initiatives relate to the space is of greater consequence than the entrepreneurial engagement of temporary uses – in particular for those that develop and mature through syncopated trajectories of SDS. The first cluster (row 3; Table 5) of stabilized temporary uses from the SA-model would support this. This corroborates the higher representation of temporary users whose livelihoods profited from the general availability of space and were thus able to develop their individual spatial sensitivities. Another explanation is that public administrations directly made space available and financed or facilitated these temporary uses (i.e. through incubation policies and programs). Both these explanations corroborate the second cluster (row 5; Table 5) of stabilized temporary uses from the SA-model.

To summarize, SA and FC are key and interacting factors that stabilize temporary uses in along syncopated trajectories. While spatial affordance is more influential than

functional compatibility, both conditions require the presence of other conditions in order to facilitate SDS. The results emphasize that different combinations of social and material factors are relevant for temporary uses as they transition from fledgling initiatives into established operations. These combinations embody the rhythmic bundling of different factors that affect the syncopated trajectories of SDS. Cases demonstrating SDS tend to be those with agendas to professionalize or manage temporary use by activating and adapting unused spaces. The exceptions to this are cases with particular spatial or functional demands. The different SDS patterns emphasize a subtler sequencing of strategies categorized by Oswalt, Overmeyer, and Misselwitz (2013). Temporary users might use one or multiple strategies to initiate, enable, and coach initiatives on syncopated trajectories towards durable operations. The deciding combination of conditions that support stabilization depend primarily on the spatial, and secondly, socio-economic interests at hand. This contribution made use of the fsQCA method to illuminate how the boundary between temporary and permanent is much more convoluted than research and practice presents. Despite critiques of the fsQCA method, that some rely on QCA in a 'mechanistic manner' that could tend toward imprecise 'curve fitting' exercises, its employment in this contribution is methodologically inspired by intentions to 'generate plausible new theories' on the conjunctural and equifinal nature of urban phenomenon (Ruhlandt et al. 2020, 11). This is applicable to processes of stabilization for temporary use and justifies the application of the method. Nonetheless, the results require careful consideration and future research in order to continue improving the outcomes and insights. The latter could make use of QCA or other methods and build on the insights from this contribution.

6. Conclusion

This contribution set out to understand processes of temporary use that stabilize over multiple locations while offering novel conceptual and methodological insights. I pursued this by asking: How can we understand spatially detached patterns of stabilization? Further, how do different combinations of factors help stabilize temporary uses in this manner? This line of questioning set up a temporal and rhythmanalytical reframing of temporary use and its processes as a means to explain processes with less spatially obvious impacts. By stretching temporal thinking to include the concept of *rhythm* (in addition to duration), less apparent but alternative spatial patterns in stabilization are better appreciated. These delineate how processes of temporary use are temporally syncopated and become persistent over multiple spaces instead of staying at one, unmoving location. As a method, fsQCA is appropriate for the disentangling of the social and material factors that combine in rhythmic bundles to help stabilize temporary uses. This contribution demonstrates this by considering 40 different temporary use cases backgrounded by urban regeneration in the spatial contexts of Bremen (DE) and Rotterdam (NL). In addition, the analytical results confirm, 'permanency is not based on its physicality but on its philosophy' (Kamvasinou 2017, 17), by assessing a variety of initiatives as they progress on trajectories that characterize physical and spatial detachment. These range from experiments, through to start-ups to initiatives that have made their careers out of temporary use or moved to respond to spatial needs. Thus space and function are vital; the former, however, demonstrates greater weight. As well, the results support claims that ambivalence for risk might be socialized

(Ferreri 2019). Most likely, users are still sensitive to risk but discount it by focusing on their adaptation and learning. Finally, the findings indicate possibilities for future research to continue refining knowledge on interacting factors that facilitate persistent temporary use. This could look at other forms of stabilization or inspire other cross-case analysis of hypothetical and configurational testing.

Notes

1. Details are available via supplementary online materials (Chang and Gerrits 2021b, 2021c)
2. Based on the literature-derived set of factors, expectations and set definitions (refer to Table 1). These informed the semi-structured interviews lasting between 60 and 90 minutes that were led by Chang and Gerrits (2021a).
3. Interviews were with a range of stakeholders including creative and entrepreneurial temporary users, public administrators and politicians. The reduced number of transcripts is an outcome of combining responses from multiple stakeholders into one transcript since certain sessions included multiple stakeholders. Section SM 1. presents a breakdown of the type of activities encompassed by each case study. For details on the transcriptions, please refer to Chang and Gerrits (2021a) for the supplementary online materials.
4. Refer to supplementary online material (Chang and Gerrits 2021c)
5. Refer to supplementary online materials for details (Chang and Gerrits 2021a)
6. Refer to supplementary online materials for details (Chang and Gerrits 2021c)

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8.5.4. Cities

As this manuscript is still under review, the manuscript has not been made available here. The author can make this available, however, upon individual request.

8.5.5. Canadian Cities in Transition

22 The Ups and Downs of a Sustainable and Climate Resilient Development Path in Canadian Cities

Meg Holden and Robin Chang

Introduction

Canadian cities sit in a catch-22 position when it comes to planning to meet sustainability and climate **resilience** goals. On the one hand, there is a long-lived backlash, amongst planners and urban professionals, against sprawling suburban landscapes. It is taken as a duty of Canadian urbanists to fight against their spread. On the other hand, the cities that have most successfully reversed the suburbanization trend by creating "livable" downtowns and compact, complete communities are witnessing serious declines in housing affordability, compromising sustainable cities in other ways. This chapter examines both sides of this contemporary **urban sustainability** dilemma in Canadian cities.

The trouble with these conflicting urban climate change and sustainability action dynamics becomes clear when considered in terms of how Canadian cities have tried to improve their sustainability and climate performance. In this chapter, we examine the ups and downs of suburban and more compact development forms through Canadian cases, including the Metro Vancouver Housing + Transportation Affordability Study and Transit-Oriented Affordable Housing Study, and studies of greenhouse gas (GHG) emissions profiles. We consider the intended and perverse consequences of living-first and family-first downtown policies in Vancouver and Toronto. We also introduce efforts to take bold moves toward urban density beyond livable downtowns in Vancouver's Making Room initiative, and to achieve and certify an integrated model of sustainable neighbourhood solutions across Canada and around the world.

Addressing climate change in Canadian cities involves its own ups and downs that only partially overlap with sustainable cities work. In the second half of this chapter, we consider the particular demands that climate change makes of urbanists, from mitigation goals in Edmonton to the Coastal Flood Adaptation Strategy in Surrey. In closing, we introduce the concept of urban resilience to Canadian cities to provide opportunities and dynamics of success rather than particular end states—incomplete rather than complete streets, for example, acupunctural land-use activation, and inclusive citizen engagement in "depaving."

Sprawl as the Sustainable City's Nemesis

The classical Canadian suburban form carries the label "sprawl." Sprawl has held the status of sinister villain amongst urbanists and planners in Canada for several generations. Picture single detached homes arranged in rows on spacious, grassy lots—set back from the neighbours, from the street,

Holden, Meg, and Chang, Robin in Moos, Markus, and Vinodrai, Tara, and Walker Ryan, eds. *Canadian Cities in Transition 6e* © Oxford University Press Canada 2020. Reprinted by permission of the publisher.

and from other land uses by wide roadways designed for private automobiles. This is the image of **urban sprawl**. The exclusionary zoning and planning practices that produce sprawl have been blamed for enabling environments that create enclaves of middle- or upper-class socio-economic status, discouraging social and economic mixing and local economic development. Sprawl is also blamed for limiting opportunities for resident health and well-being by prioritizing time for long-distance automobile commuting over other activities, like physical exercise and social time together with family or neighbours. These long commutes and automobile-dependent transportation patterns are considered disproportionately to harm children, the elderly, new immigrants, and women.

By encroaching on farmland and natural areas, sprawl also reduces biodiversity and ecosystem integrity, and worsens environmental risks through high rates of paving that exacerbate water-borne pollution and flooding risks. It is a development pattern that demands excessive water and energy to maintain large homes, gas-powered vehicles, and mono-cultured, chemical-dependent landscaping. It destroys and constrains wildlife habitat. Sprawl often also has negative implications for social capital among neighbours, who are seldom at home in bedroom communities, who have limited common spaces for neighbourhood interaction, and whose values in their neighbourhood are dominated by private property rather than a shared neighbourhood mentality. Sprawling suburbs are costly for municipalities to maintain because of the length and quantity of infrastructure that must be provided for them to approach urban levels of service for necessities like roads, sewers and sanitation, water, energy, and emergency services. Many of these costs imposed by sprawl are hidden from the people making decisions to live or work in those environments (Blais, 2010; Downs, 2005; Soule, 2006; Thompson, 2013; Woodcock et al., 2011). Let's examine two hidden costs of sprawl more closely: transportation costs and GHG emissions costs.

Sprawl Costs: Metro Vancouver Housing + Transportation (H+T) Cost Burden Study

The cost of housing and the cost of transportation are inversely linked in the majority of Canadian cities. In past decades, the cost of housing in urban central cores has risen more than has been the case in suburban areas. Central core areas also hold the bulk of jobs and educational opportunities, as well as the bulk of alternatives to private cars in getting from A to B. Homes in the suburbs are more affordable than homes in the central city, but are associated with increased transportation costs. There is not sufficient data on how much more suburban households spend on daily transportation compared to urban households. In practice, the only realistic option for many house-seekers across the country has been to "drive (away from the central city) until you qualify (for a mortgage)." This excludes the additional costs of driving itself that ought to be factored into the affordability equation.

For decades, policy-makers have relied on the 30 per cent rule of thumb for defining housing affordability—namely, that housing is affordable if it costs no more than 30 per cent of gross household income. While useful for understanding what kinds of rents households can reasonably afford, this rule of thumb is silent on the second major component of cost of living: transportation. In 2015, Metro Vancouver undertook a new kind of cost analysis of the affordability of living in the region's different municipalities. Contrary to typical approaches that compare only the cost of housing as a proxy for cost of living, the H+T study takes into account both housing and commuting costs in relation to work or school. Commuting costs include the amount spent on public transit as well as automobile insurance, use, maintenance, fuel, and parking. In summary, the study found that, when both the cost of housing and the cost of transportation are factored into household costs, it is the far-flung suburban city of Langley that is the costliest place for renters to live in the Vancouver region, not the City of Vancouver proper. This study begins to bring some of the costs of sprawl out of hiding,

so that people making locational choices can better account for them (Metro Vancouver, 2015).

If studies like the H+T study are to make a difference, urban policy change is needed to support better locational decision-making by households. In the case of Metro Vancouver, the regional government has teamed up with the provincial government, the regional transportation authority TransLink, and other partners to create a Transit-Oriented Affordable Housing Study. The ultimate goal of this study is to expand the availability of housing affordable to households earning less than $50,000 annually in transit-oriented locations, region-wide. This effort is expected to create more opportunities for people with lower incomes to live in transit-efficient places,[1] both reducing the transportation expenses of housing for these households, and cutting down on the larger package of "sprawl-related costs" for everyone in the region (Metro Vancouver, 2018).

Sprawl Costs: Greenhouse Gas (GHG) Emissions

Hoornweg et al. (2011) grapple with the toll of sprawl in terms of calculating how sprawl exacerbates GHG emissions. They find that compact urban form can cut GHG emissions in half when compared with a sprawling built form. They provide evidence from different national contexts, that big cities are better at reducing per capita GHG emissions. By their measures, average per capita emissions in New York City (10.5 tCO_2e/capita[2]) are half those in Denver (21.5 tCO_2e/capita), per capita emissions in Toronto (11.6 tCO_2e/capita) are just over half those of Calgary (17.7 tCO_2e/capita), and those in Seoul (4.1 tCO_2e/capita) are less than half those of the Republic of Korea as a whole (11.46 tCO_2e/capita). This research group has also found this relationship to hold for central cities compared to the suburban fringe. Residents in the Toronto city core produced 6.42 tCO_2e per capita on average, compared to 7.74 tCO_2e for suburban Torontonians (VandeWeghe and Kennedy, 2007).[3] Examining the policy approaches that have shown the greatest impact on reducing GHG emissions profiles for cities, Hoornweg et al. (2011) document the dominant impact of land-use planning policies that encourage compact city development. The biggest impacts of land use decisions on reducing GHG emissions are in reducing local travel demand, increasing the use of public and active transportation, discouraging private automobile use, and zoning to promote multi-family and connected housing types.

Transportation and GHG emissions are two significant examples of how "sprawl," in almost every respect, acts as a stand-in for unsustainable urban development. The concept of sustainable urban development articulates a goal toward which all of our work in cities should be oriented—namely, providing for the needs of present generations such that future generations will have the ability to meet their own needs (United Nations Conference on Environment and Development [UNCED], 1992). An underlying assumption of the idea of sustainable development is that efforts on this path can create a "triple bottom line," where economic, social, and environmental sustainability all positively correlate. And, even beyond a correlation, sustainable development thinking assumes that seeking something better for cities than sprawl in economic, social, and environmental terms can lead to "synergistic" or "holistic" solutions that go beyond the outcomes that could be attained by addressing any one objective by itself. In this way, moving toward thinking and acting for sustainable development in cities cannot be encapsulated in any particular list of policies or initiatives, but is best thought of as a "development path." The concept of a development path was defined by the 2007 Intergovernmental Panel on Climate. Change (IPCC) Fourth Assessment Report as

> a complex array of technological, economic, social, institutional, cultural, and biophysical characteristics that determine the interactions between human and natural systems, including consumption and production patterns in all countries, over time at a particular scale (Sathaye et al., 2007: 696).

The costs of sprawl are like a series of wrong turns that have oriented cities down an unsustainable development path. It is by rethinking the direction of this development path entirely that we can move cities toward sustainability.

Charting a Sustainable Development Path: The Up Side of Sprawl?

The notion of changing cities' development paths to move toward compactness, sustainability, and climate resilience is theoretically sound. But does it fit with Canadian values? Canada's major cities have opted over the past generation for compact development (Neptis Foundation, 2014). This has been an effective strategy, in the suburbs and in the urban cores alike, in the sense that compact or complete communities have become home to an increasing share of Canadians. At the same time, a substantial proportion of Canadians value their suburban lifestyles and resist the introduction of urbanization strategies in their neighbourhood. In fact, efforts to change the development path of many suburban Canadian communities toward compactness and higher density have met increasing public resistance in recent years. In a survey conducted by the Real Estate Foundation of BC, for example, the majority of respondents across age groups and genders, in rural and urban communities alike, expressed dissatisfaction with public consultation in the development process. Just over half of British Columbians felt that ordinary people do not have enough of a say in decisions about their neighbourhoods. Almost 40 per cent of British Columbians *living in cities* thought that little or no future development should consist of compact, high-density, high-rise buildings (Real Estate Foundation of BC, 2015).[4] In numerous instances, this resistance to densification by existing residents has delayed or prevented the development of new multi-family housing units (Quastel et al., 2012). When they reach a point at which scarce redevelopment opportunities remain in the city's central core, Canadian cities face new kinds of challenges in advancing policy and planning initiatives to densify the remainder of the city.

Across Canada, suburban places from Don Mills, Ontario, to Garrison Woods in Calgary have continuous and ongoing popular appeal to Canadians. In fact, although Canada refers to itself as one of the most urbanized nations in the world, David Gordon proposes that Canada became a suburban nation in 1981 and has continued to grow more suburban ever since (Gordon and Shirokoff, 2014). Meanwhile, other Canadian urban scholars have taken a different tack to understanding the suburban phenomenon in Canada. This different tack has entailed research to demonstrate how the places we call suburbs have been themselves steadily urbanizing since the 1970s, based upon different measures of urbanization. So, for example, many Canadian suburbs have undergone land-use intensification, the introduction of mixed-use nodes, rapid transit and secondary town centres, and have introduced complete communities and sustainability strategies. An outcome of the new brownfield and greyfield redevelopments are new suburban-urban hybrid places of medium- and high-density communities where industrial uses or shopping malls once stood (see Grant and Filion, Chapter 12).

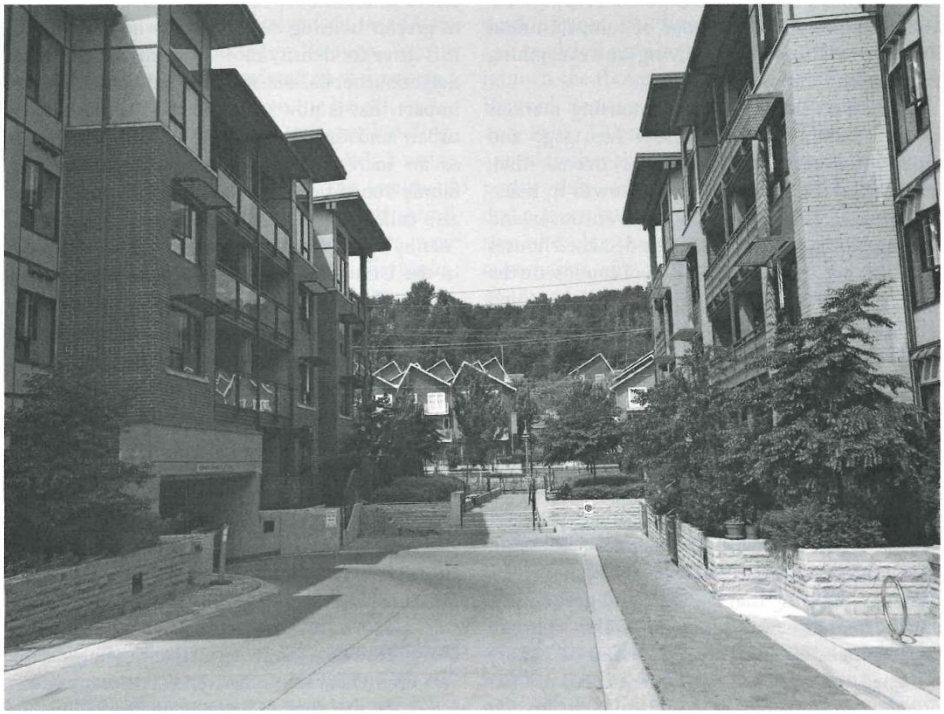
So where does the truth lie? In fact, it lies in both suburban and urban answers—depending on how these are defined. Gordon and Shirokoff (2014) define suburban places based on automobile-dependent commuting patterns, whereas Grant and Filion (see Chapter 12) look at housing density. In terms of density, Canadians are urbanizing; in terms of mobility choices, the development path is proving more resistant to alternatives to automobile dependency.

Is There a Downside to Density?

Since the 1970s, the City of Vancouver and a growing suite of other Canadian cities have promoted housing intensification. These policies, initiatives, and processes propelled the central area of Vancouver from a state of industrial and commercial decline to its current renown near the apex of global rankings for livability (Holden and Scerri, 2013). Whereas the default for planning downtowns had been to encourage the use of central cores primarily as

economic engines, Vancouver's "living-first downtown" policies set the stage for complete community development in all Canadian urban downtowns. A "living-first" or livability-focused development path for central cities integrates a rich social mix of residents, along with institutional, commercial, park, and livability-related land uses, at a level of intensity to make non-automobile transportation economical (Punter, 2003; Berelowitz, 2005) (Figure 22.1). Non-automobile transportation has accounted for the majority of trips in the City of Vancouver since 2014.

A trend that now appears not just in Vancouver but in all major Canadian cities, this livability-focused development path has a darker side (Peck, 2005; White and Punter, 2017). In fact, as much as the shift toward "living-first downtowns" may at one time have appeared as a triumph of the anti-sprawl position and the value of promoting human community over the pursuit of capital growth, it seems now that the shift we have experienced is toward new forms of capital growth. In Vancouver and Toronto in particular, the cost of land and housing in the central cities has skyrocketed, leaving a very different picture of "living-first downtowns" than what can been seen in a typical suburban Canadian grocery store checkout or schoolyard. Living-first planning, as an approach, has no difficulty holding up its success in attracting a rich social mix. The



Michael Wakely

Figure 22.1 This neighbourhood landscape in Vancouver depicts some of the other sustainability features that become possible as housing density increases, including active transportation, ecological landscaping and "depaving," and more opportunities for neighbourly interactions.

problem is that the mix of people in the everyday spaces of these core areas is increasingly stratified, socio-economically. Fewer and fewer can afford to live, work, and play full-time. Increasing shares of the social mix come from the people who can only afford to stay for coffee, people who can only afford to work there serving the coffee, and people who sleep outside in the high-quality public places.

At the same time as they grow in popularity, support and enthusiasm for higher-density neighbourhoods and attached housing are tempered by growing negative associations including a sense of lifestyle unaffordability, polarizing class dynamics, crowding, loneliness and social isolation, and lack of neighbourliness and community life. Bundled together, these trends can be thought of as the dark side of living-first cities. These all factor into a shifting sense of Canadians' support for and hesitancy about the value of compact urban living, sprawling suburban living, and everything in between.

In an extensive review of housing markets in Canadian cities, the Canada Mortgage and Housing Corporation (2018) uncovered that, particularly for the cities where growth in housing demand has been strongest, Vancouver and Toronto, the supply of new single detached houses is decreasing.[5] New construction of condos, on the other hand, has increased. The scale of this trend is larger than what can be explained by housing affordability alone. So what is going on? Most of the country's highest-paying jobs are located in dense cities, and residents of these cities have the most disposable income, which they are willing to spend on housing, while being less willing to sacrifice in distance from the centre. As a result, single detached homes simply are no longer an option for a growing share of urban professionals.[6] This shift in preference for housing that is locationally efficient over housing that is bigger and ground oriented demands new thinking and action by urban professionals to make sure high-density areas are designed and equipped to meet the needs of their populations. In Toronto, upon the realization that 32 per cent of households with children in the Toronto area live in mid- and high-rise buildings (whereas only 3.8 per cent of units in buildings built between 1996 and 2011 had three or more bedrooms), the city launched a set of "Growing Up Guidelines" to ensure that multi-unit housing in high-density communities was better designed to accommodate the needs of households with children and youth (City of Toronto, 2016).

What If Creating Compact, Livable Downtown Cores Was the Easy Part?

If our goal is to guide Canadian cities toward a more sustainable development path, the achievements of compact downtowns may, in fact, have been the "easy part." The harder parts of tackling automobile dependency, inequity, and distinguishing the economic from the livability value of homes are still in need of solutions. Canada's cities and those fortunate enough to own real estate in them have realized the economic value of greater housing density. But, what happens as this drive for density moves into more traditional neighbourhoods, outside of the downtown? One impact that is now widespread in the Canadian urban landscape is the trend of secondary suites as an increasingly common feature of single-family-zoned neighbourhoods. Secondary suites, also called laneway or coach houses, "granny" or "nanny" flats, "mortgage helpers" or (typically in the United States) "accessory dwelling units," are small homes located on the same lot as a primary home, sometimes as a garage conversion or basement suite. Looking at the Metro Vancouver region, the regional government estimates that there were between 85,340 and 93,620 secondary suites in the region in 2014, representing 26–29 per cent of the rental households in the region. Numbers of secondary suites are growing across Canada. The Canada Mortgage and Housing Corporation (CMHC, 2018) found that for every 10 single detached dwellings started in 2014, approximately 8 "mortgage helpers" started alongside. Historically, these units have typically been illegal. However, many municipalities now permit and even encourage this trend. For many growing cities, this type of housing fits the bill for the lamented "missing middle" housing that is needed to better meet households' demands for housing that is in the middle of density and cost ranges. "Missing middle" is a term used to describe

housing that sits in between apartment towers and single detached dwellings in terms of density and massing, as well as the sense that this middle range of housing types is underprovided in contemporary Canadian cities.

Taking a step that would be considered anathema to the notion of a single-family-zoned neighbourhood a decade ago, the City of Vancouver introduced the Making Room initiative in summer 2018. Making Room permits duplexes as well as laneway houses and basement suites on all single-family-zoned parcels city-wide (City of Vancouver, 2018).[7] In certain neighbourhoods that are closer to commercial areas and rapid transit hubs, the Making Room initiative goes further to allow triplexes, quadruplexes, and low-rise apartment buildings where only single-family houses were historically permitted.

This initiative is being advanced to address affordable housing shortages through "gentle density," or density that is advanced in forms and at rates that are incremental to the height, massing, and number of residential units per building, compared to neighbouring lots. It holds a range of implications for sustainability. The argument in favour of "gentle density" takes the anti-sprawl discourse into account by emphasizing green space within existing neighbourhoods, that building heights should not be excessive, and that road width and speed should be minimized. On the other hand, as quoted in *The Globe and Mail*, one citizen speaking at a Vancouver public hearing asserted that this move "will destroy what makes Vancouver such a green and charming city" (Bula, 2018). Beyond the question of divergent values, this example elevates the need for urban professionals to ask, "What is an acceptable rate of change in Canadian communities?" This, in turn, implies a need for effective public engagement. Effective public engagement provides an opportunity to understand a given local context and improve our collective understanding of pressing land-use issues and acceptable solutions. Public participation experiences are also key opportunities to increase citizens' sense of responsibility for and ownership of their cities and neighbourhoods. An engaged public, invested with a sense of civic responsibility and mutual aid, is in an ideal position to contribute to long-term planning for decisions about their communities that affect long-term sustainability. Urban planning and policy professionals in most Canadian cities are learning to engage with the public as allies to effectively leverage the potential of deliberation. Their intention is to guide outcomes in order to increase the perceived value of the ingredients for sustainability and climate responsibility that cities offer.

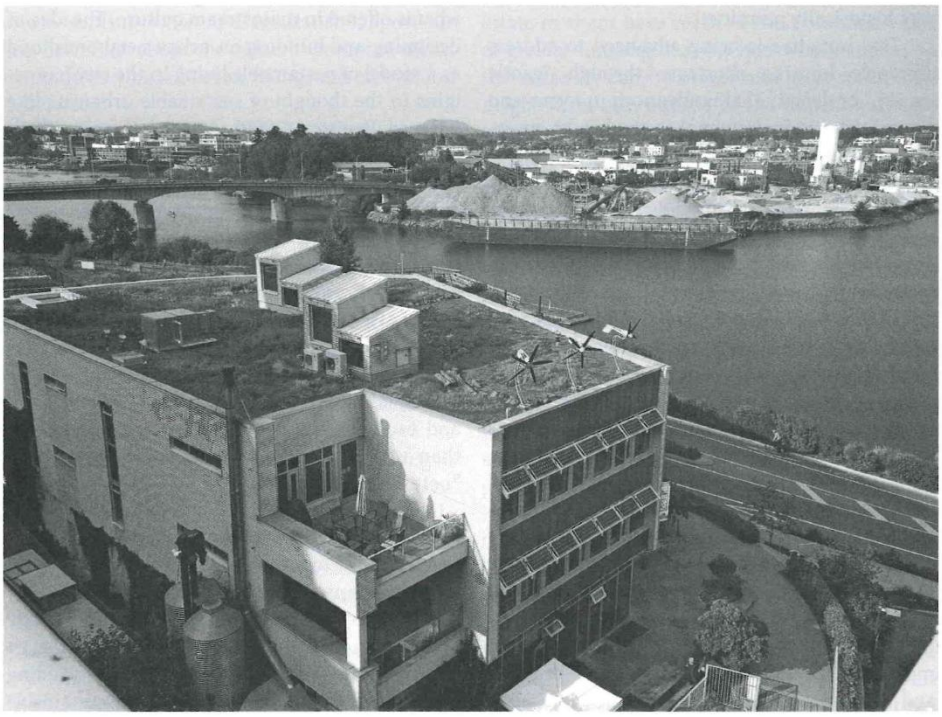
Model Sustainable Neighbourhoods in Canadian Cities

The neighbourhood scale has long made sense as the right scale for people looking to build, plan, orient, and organize their lives differently from what is offered in mainstream culture. The idea of designing and building an urban neighbourhood as a model of sustainable living in the city has origins in the thought of sustainable urbanists like Richard Register (2009), Manuel Ruano (1999), and Paolo Soleri (2001). The idea has intuitive appeal: rather than attempt a skinny street here, a parklet there, a community garden in that sector, and a green building across the city—a combination of ecological, economic development, social, governance, and cultural components of sustainability are sited together in one manageable piece of the city. Doing so, we may create the kind of holistic result that would allow people in that neighbourhood to feel the difference in a visceral way, and be more willing to change their behaviour than we are when told to do something that is "better for the planet."

Some countries, like France and China, are pursuing model sustainable neighbourhood developments in a top-down, centralized way. Others, such as Denmark and India, pursue these neighbourhoods as demonstration projects, usually demonstrating advances in energy and smart systems technologies. A few countries, including Sweden and Singapore, have designed sustainable neighbourhood-development approaches for export to other countries. Canada, like the United States, Australia, and other countries, is pursuing the development of model sustainable neighbourhoods at the voluntary will of private sector urban-development

companies and city leaders, but with little support from central government, so far.[8]

After about 15 years of catching on as a niche practice in urban sustainability planning, policy, architecture, engineering, and design, Canada has a limited number of models to show for its efforts. Victoria's Dockside Green (Songhees and Esquimalt First Nations territory) (see Figure 22.2), and Vancouver's Southeast False Creek (Musqueam, Squamish, and Tsleil-Waututh territory), are two of the most established and best-known models, whose first phase opened to residents in 2008 and 2010, respectively. Other neighbourhoods are earlier on in their construction, such as Zibi on Chaudière and Albert Islands in Ottawa-Gatineau (Algonquin and Mohawk territory), and Blatchford in Edmonton (Enoch Cree territory). Beyond the models that these neighbourhoods offer of higher-density, mixed-use urban living, they showcase different advances in energy efficiency and neighbourhood energy systems, water and waste-management systems, priorities for active transportation, and efforts in local economic development, higher-quality public and common spaces, and social mixing. Building-specific energy efficiency technologies employed include Passive House and Net Zero—the Canadian government has committed to instituting a "net-zero-ready" building code by 2032, as part of our Paris Agreement commitments. Further



Meg Holden

Figure 22.2 This building is a cornerstone of the Dockside Green model sustainable neighbourhood in Victoria, BC. In addition to its green building features, such as its green roof and solar and wind infrastructure, it also offers social features, such as the neighbourhood café and neighbourhood greenspace, as well as access to the Galloping Goose bike trail.

attention and evaluations are needed in order to understand the impacts that these and other comparable efforts are having on their cities and city-life possibilities.

While some actors in this realm of sustainable building and development emphasize the context-dependency of any model sustainable neighbourhood, efforts to articulate generalizable principles to guide and evaluate what a model sustainable neighbourhood is and does are on the rise. From the Ahwahnee Principles (Local Government Commission, 1991) to LEED (US Green Building Council, 2013) or One Planet Living (Bioregional, 2017) certification, such systems can be helpful to orient theorists and practitioners to what it takes to make and maintain a model sustainable neighbourhood in a contemporary city. The trouble is, the number and variety of these heuristic tools is multiplying faster than the efforts to demonstrate the work in practice! In order to understand the nature of the potential and realized contribution that model sustainable neighbourhoods make to our cities at home and abroad, we need to understand the values and motivations of those who are undertaking the work of designing, building, financing, and then living, working and playing in model sustainable neighbourhoods (Sturgeon et al., 2016).

Approaching Resilience in Canadian Cities

Is planning for urban sustainability the same as planning for climate safety and climate change reduction? Urbanists differ in how they answer this question. The difference often depends upon the distinction between *mitigation* and *adaptation*—reducing the risk of change versus getting ready for impending change, respectively. For those who take a climate change mitigation view, the only worthy sustainability work in Canadian cities should be measured in terms of the GHG emissions reductions that the work achieves. For example, the City of Edmonton, through its *The Way We Green* policy, takes a mitigation approach to climate change policy. It sets a goal of becoming "a carbon-neutral city"; this is consistent with climate change planning because it is a plan to reduce GHG emissions. Specifically, Edmonton plans to reduce its GHG emissions from city operations by 50 per cent by 2020 (based upon a 2008 baseline), and by 100 per cent to reach "neutrality" at some point in the long-term future (City of Edmonton, 2012). Such an approach supports global climate action plans and agreements, like the Paris Agreement,[9] and signals political will to change business as usual in order to "fight" climate change. It has also triggered a steep learning curve in Canadian cities related to how to measure and account for invisible GHG emissions as a liability (and sometimes also as a tradeable commodity).

Climate Resilience and Urban Sustainability Are Not Always Commensurate Goals

While accounting for GHG emissions is an important and necessary step in recognizing the need for a stable and predictable climate system, Canadian cities increasingly recognize that this cannot be where urban climate policy ends. Reducing GHG emissions may advance certain urban sustainability goals, but its approach to mitigation is not necessarily consistent with all the urban sustainability goals discussed earlier in this chapter. For example, to reduce GHG emissions in the urban transportation system, we could reduce private vehicle use, by changing our land-use patterns and increasing the viability of public, active, and shared transportation systems. By changing the organization of space so that people are less inclined to drive rather than opt for other, more climate-friendly means of mobility, we are doing climate change mitigation work that also helps us adapt over time to a way of life that is less GHG-intensive, healthier, and better for sustainability overall. Another way to reduce the GHG intensity of urban transportation could be to incentivize the use of electric and biofuel-powered private vehicles. This latter approach may have the same mitigation potential as the first in the short term, but over the long term, does not share the same

kinds of sustainability co-benefits as the first approach. It would not lead to any efforts to change land-use patterns, or the private automobile mobility preference in general, and would therefore have questionable results for urban sustainability. Higher-level examples of how the Government of British Columbia has classified the fossil fuel natural gas as "clean energy," in the same category as solar or wind (Bailey and Stueck, 2012), or how the Government of Canada insists that oil pipeline expansions are needed in order to meet national GHG reduction targets (Jaccard, 2018), illustrate the complex politics generated by trying to reconcile climate change action with sustainability goals.

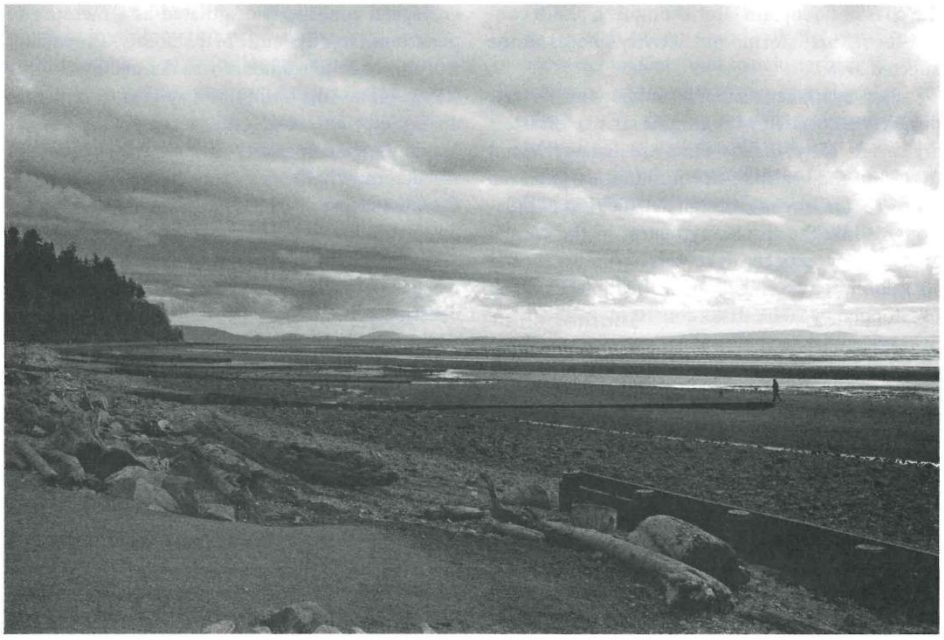
Climate Adaptation and Urban Resilience Planning

Along the continuum of policies that Canadian cities are developing to respond to the realities of climate change is climate adaptation planning. Such strategies do not target GHG emissions reductions but instead focus on developing plans to adapt the city's physical, institutional, and social infrastructure such that the city is able to function well and protect lives and property in the face of climate-induced crisis (Figure 22.3). The case of the City of Surrey's Coastal Flood Adaptation Strategy (CFAS) represents one leading urban climate adaptation policy approach.

The City of Surrey's land area includes about 20 per cent coastal floodplain. Historically, the city has managed this space with sea dykes, sea dams, ditches, pumps, and spillways (Figure 22.4). These measures have worked effectively to open up this floodplain area to residential development, agricultural development worth over $100 million annually in farm revenue, popular parks, beaches, and recreation areas, and many kilometres of important transportation, water and energy infrastructure. Currently, over 1500 people live in Surrey's coastal floodplain, many in the Crescent Beach neighbourhood and others in the Semiahmoo First Nation. However, the mitigation measures that have served these areas well to date are not expected to hold up in a climate-changed future, with rising sea levels, increased frequency

Chris Boulton

Figure 22.3 An example of climate adaptation infrastructure, this dry pond in a park in Edmonton is designed to also serve a stormwater management function.



Robin Chang

Figure 22.4 This older breakwater infrastructure at Crescent Beach, Surrey, will not be sufficient to hold back the rising sea level of the next 20 years. This realization prompted Surrey to undertake the Coastal Flood Adaptation Strategy (CFAS).

of storm surges, precipitation, and flooding. Surrey anticipates that it will face multiplying threats of water ingress: higher tides from an elevated sea level along with storm surges, higher river levels from increased precipitation, reduced field drainage from increased flooding, and even higher river levels in spring from increased glacial melting in the mountains that feed the Serpentine and Nicomekl Rivers. Along the British Columbia coast, sea levels are expected to rise at least one metre by 2100.

Surrey's answer was to launch the CFAS. Between 2016 and 2018, the CFAS included five phases: (1) city-wide education and awareness-building around what is at risk and what the community values, (2) exploring the adaptation options, (3) developing adaptation strategies, (4) detailing the preferred strategies, and (5) reporting back to the community. The CFAS is innovative not only in how it tackles climate change adaptation and resilience, but also because of its inclusive engagement process. Whereas protecting residents from risk and danger might in some strategic approaches imply a government that is working to reassure residents about the strength and capacity of engineered solutions, the CFAS takes strides toward transparency with residents even when conventional protections are insufficient and risk failure. For Surrey, this new transparency has meant not only making projections and models available to residents, but also translating these data into visual models and timelines, maps and scenarios, and community meetings at which residents are asked to contribute their values-based assessments, ideas, and alternatives, along with council reports. The City of Surrey has gone even farther in its public engagement through initiatives that raise the popular visibility of the risks at hand in

the coastal floodplain—for example, a photo contest for nature, storm, and activity photos in the affected areas.

The technical risks to public and private property associated with climate change disasters are severe. Nevertheless, risks are just as relevant to the life and health of all communities, and even more so for already designated at-risk populations. While the risks are greatest in the coastal area, Surrey expects dyke infrastructure nearly 10 kilometres inland to be vulnerable to being overtopped by 2040. Risks consist of

- a narrowing of the intertidal zone, as sea levels rise on one side and concrete dykes on the other, reducing the habitat available in this critical migratory route for birds;
- habitat risks to other fish, animals, and plants;
- reductions in salmon spawning area;
- loss of beloved public spaces, including Surrey's only sandy public beach;
- loss of access to trails and recreation areas during storm events;
- threats to key transportation routes;
- threats to key infrastructure corridors serviced by utilities, railways, and the freight and passengers that travel the 10 kilometres of affected provincial highways;
- threats to evacuation routes;
- potential loss of vehicles that could be flooded off of roadways;
- potential floodwater damage to the ground floors of homes; and
- potential failures to electric infrastructure.

Surrey's CFAS is being examined as a model by neighbouring municipalities, including the City of Vancouver, as they realize that they have too much at stake not to plan differently to achieve urban resilience, which is discussed next.

Urban Resilience Planning

Increasingly, climate strategies are referred to as neither mitigation nor adaptation-focused, but under the common banner of resilience. The notion of resilience has multiple origins. As an ecological concept, it originated as a measure of persistence in a dynamic of instability. The ecological approach to resilience was defined by Holling (1973: 14) as "the ability of a system to return to an equilibrium state after a temporary disturbance." The adaptability of a system to a host of threats and challenges over time would provide the best measure of resilience in this ecological understanding.

Within the discipline of engineering, resilience is defined and used somewhat differently to describe systems that are "fail safe" in the sense that crises and extreme events have been forecasted, modelled, and incorporated into system designs that are able to maintain efficient and safe functioning even when things fall apart. Based on this understanding, the measure of resilience success would be less related to adaptability and more related to the sheer speed at which a system could return to "business as usual" under a worst case scenario disruption.

Davoudi and others (2012) introduced an essential addition to the ecological or engineering dichotomy in thinking about urban resilience. By introducing resilience thinking to cities, the idea is to help provide new tools for intentional and transformational change. The argument is that resilience framing could prove useful in planning if it assists planners in their work to make change more palatable for change-averse people, and that transformative change opportunities might be sought where disruption has already been thrust on a city through stress or crisis. This has sometimes been referred to as an evolutionary approach to resilience. A key aspect of evolutionary resilience thinking is that, in an urban planning context, the resilience dynamic should not be limited to rising to a challenge to "bounce back" from a disaster event to a pre-disaster state. Instead, resilience should be thought of as actually "bouncing forward" toward a new state, perhaps never before achieved. According to an evolutionary way of thinking about resilience, crisis can break down pre-existing structures, institutions, and relationships, opening up space for new pioneers and structures and opportunistic relationships, the likes of which

could scarcely have been imagined previously. Whereas in ecology this process may tend toward re-establishment of a similar structure as the one that existed before, and in structural engineering the system would be considered a failure if it did not revert to its previous functional state, an evolutionary process in a city can represent a breakthrough to a new state, particularly if demographic, infrastructural, financial, soil, energy, water, or climate conditions are altered drastically by the disaster.

The evolutionary approach to resilience also holds more weight when it comes to considering the social dimensions of resilience. Working from a social learning perspective, Lakey (2015) promotes the use of resilience as a way to describe effectiveness in a social movement. This effectiveness becomes a condition in which individuals and groups exhibit mental and social strength in the face of crisis that facilitates the maintenance of well-being under adverse conditions.

A socially useful plan for community resilience may help articulate the injustices that often seem as unmovable as mountains or mature forests. It may also help recognize in advance where certain kinds of system shocks or drastic changes might propel opportunities to improve the standing or life opportunities of disadvantaged people in a community, or close the social gap between the "haves" and the "have-nots." This pursuit of a social justice frame of resilience would work toward an improved state of social justice and community well-being compared to that which existed prior to a shock. In considering the work that the concept of resilience may yet do in Canadian cities, it is worth keeping in mind that nothing specifically ties this concept to a response to climate change. Indeed, "resilience" is a term urban professionals may also use in relation to an economic transition, industrial shift, social health, or response to disease.

Based upon careful comparative consideration and synthesis of the growing host of definitions of urban resilience, Meerow et al. (2016: 39) arrive at this definition:

> Urban resilience refers to the ability of an urban system—and all its constituent socio-ecological and socio-technical networks across temporal and spatial scales—to maintain or rapidly return to desired functions in the face of a disturbance, to adapt to change, and to quickly transform systems that limit current or future adaptive capacity.

Urban Resilience as Adaptive Management

As the concept of urban resilience has entered into policy practice in Canadian cities, it has been treated as an exercise in articulating the desired outcome of community planning with an emphasis on aversion of particular disasters. Cities are constantly exposed to natural disasters, but climate models as well as recent memories of the 2013 Southern Alberta flood and the 2016 Fort McMurray wildfire suggest that catastrophes are becoming more normal. The June 2013 flood in southern Alberta, for example, was caused by the concurrence of heavy rainfall an snowpack melting in the Bow and Elbow Rivers, forcing the declaration of 32 states of local emergency and the evacuation of 175,000 residents; downtown Calgary was inaccessible for a week, and the cost of recovery was in the billions of dollars (Haney and McDonald-Hunter, 2016). Resilience thinking, applied to cities, permits and gives structure to planning for a diverse range of possible futures, such that these options can be considered more clearly by residents. In turn, the community can be positioned to determine the kinds of future social, economic, and built configurations that are most desirable, and perhaps also the best means to move toward a preferable future in spite of shocks and surprises. This iterative process of envisioning the future, taking steps toward that vision, taking stock and changing course along the way, is known as adaptive management (Folke, 2006; Wilkinson et al., 2010; Wardekker et al., 2010). The ability of a community to engage in adaptive management is known as its adaptive capacity.

Put another way, adaptive management toward urban resilience may begin with an assessment of the risk of certain historical disasters or disturbances, followed by planning for the best techniques and resources needed to respond effectively to each of these. This kind of urban resilience planning puts a premium on consideration of dynamics of change and uncertainty, promoting "resilience in cities" as opposed to an imaginary fail-safe "resilient city" (Ernstson et al., 2010). Strategies of adaptive management consider structures and systems throughout the city as being in a state of flux, whether this flux is detectable or not, and as offering an opportunity to learn about optimizing these flows through practice (Ahern, 2011). Urban resilience thinking also sometimes resists the tendencies of planning toward comprehensiveness, instead valuing principles of self-organization, bottom-up action, and experimental and collaborative approaches taken by diverse groups with diverse expertise (Chang, 2018; Folke et al., 2003; Olsson et al., 2004; Wilkinson et al., 2010). In this way, we can think of cities pursuing a resilience-oriented planning and development strategy as adaptively managing their development path. What defines a city's development path is a mostly uncoordinated assemblage of choices made at a range of formal and informal levels of decision-making, and a range of scales from the individual and ultra-local to the influences of global markets and migrations. Complicating matters further, the locus of decision-making when it comes to development paths is fragmented:

> Decisions about the development of the most significant sectors that shape emission profiles—energy, industry, transportation and land use—are made by ministries and companies that do not regularly attend to climate risks. The same is true for even more indirect influences on these sectoral pathways, including financial, macro-economic, and trade practices and policies (Sathaye et al., 2007: 696).

Using the concept and logic of the development path, the political, social, and cultural case for adaptive shifts toward sustainability, climate resilience and risk reduction need to be made on multiple fronts in order for the plans and policies we make to guide our cities to be consistent and progressive. On their own, environmental, sustainability, climate, and resilience plans and initiatives will prove futile if Canadian cities keep treading the same development path from the past generation.

Vancouver: Adaptive Experimentalism in False Creek Flats

Impromptu, voluntary, and citizen-led initiatives generate enthusiasm around planning initiatives that, while entirely consistent with an adaptive management approach, could not be replicated by a city government acting in a top-down way. The sense of tactic and the incomplete nature of planning that goes into such initiatives are key to their appeal, and may be important to the integration of resilience values into the planning and development of Canadian cities. We present two examples here: one of an attempt by the City of Vancouver to integrate adaptive experimentalism into planning for the False Creek Flats, and one a citizen-driven effort operating in cities across Canada.

Since at least 2012, the City of Vancouver has pursued strategies of adaptive and temporary uses of public space (Lydon and Garcia, 2015; Oswalt et al., 2013). Improving the pedestrian experience has inspired other cities like Winnipeg to try something similar (City of Vancouver, 2017a; Wohl, 2017; Downtown Winnipeg BIZ, 2016). On top of an improved pedestrian experience, Vancouver can now point to these same interventions as a form of adaptive management toward climate resilience. Perceived as an industrial area in decline, the False Creek Flats area is projected to be partially under water within the next century, given the expected sea level rise in False Creek. Always a low-lying area, this increased risk of flooding has driven new design guidelines anticipating higher street elevations (City of Vancouver, 2017b). The area is unsuitable for long-term residential use but remains central

to the city's intent for more innovative and strategic employment and industrial space planning and programming, which will include live-work spaces. In preparing the redevelopment plan for this area, the city has consulted with business stakeholders and neighbouring communities, via an ideas competition and several rounds of interviews, surveys, workshops, and open houses (City of Vancouver, 2017c, p. 3). The City's engagement with local communities has also been counterpointed by international engagement through its membership in the C40 Cities network and the inclusion of the neighbourhood's proposed Innovation Hub as a component of its entry in the C40 *Reinventing Cities* competition (C40 Cities, 2019). Planning for the Flats has to contribute to the city's sustainability goals, and specifically to its goal to increase access to green jobs while securing industrial land for new and creative uses (City of Vancouver, 2019). The specific target is to diversify employment options and triple the job density between 2017 and 2047 on the 450 acres of the site from roughly 10,000 to over 30,000 jobs (Vancouver Economic Commission, 2017). This change represents a doubling of total employment floor area from 5.4 million square feet to over 11 million square feet (City of Vancouver, 2017d).

The new Flats planning framework strives to intensify innovative forms of land-use activation through flexible and stacked land reuse and conversion that spatially supports core and "back-of-house" industrial functions (City of Vancouver, 2017d). Intended for new mixed-use developments on the city-owned lots in the area, new licensing processes have been established to allow small to mid-size innovative and creative initiatives access to new "mobile," "orphan," and "temporarily underutilized" spaces. The range of policy initiatives proposed will support amenities including but not limited to co-location, resource sharing, and community finance mechanisms that take advantage of the Business Improvement Area status as well as management bodies such as a non-profit industrial development corporation (Vancouver Economic Commission, 2017) to facilitate affordable workspaces and rentable live-work options that cater to artistic and entrepreneurial lifestyles. As for the 36 acres of city park land in the area, the plan is for multiple initiatives including urban forestry, stormwater management, flood-risk protection, and biofiltration. This and existing residential areas aim to "thoughtfully" connect and will frame and integrate the False Creek Flats area into the established urban landscape (City of Vancouver, 2017d).

Depave Paradise: Adapting Ecologies for (In)complete Streets

Another facilitator of adaptive land use for urban climate resilience is the community organization Depave Paradise, which helps convert land and aims to revalue both ecosystem qualities and social qualities in public space. The civic organization works to support voluntary community projects that renew and reclaim neglected urban spaces by depaving impermeable surfaces. This opens up public space to greener, more ecosystem-friendly landscape treatments and social uses, decreases pollution from asphalt and concrete runoff, allows better soil permeability, and lightens the load on municipal stormwater systems. Depave Paradise encourages the increase of biodiversity through native landscaping and planting diverse flora, natural stormwater management and water infiltration through natural drainage, lessening urban heat islands, and GHG emissions reductions (Depave Paradise, 2018b). Sponsored by Green Communities Canada, Depave Paradise has already established projects in 29 locations in 15 cities and 5 provinces. The growth in popularity and spread of this initiative suggests a social and cultural readiness across Canadian cities to engage differently with public spaces and to create new stories about the values of public spaces. Depave Paradise statistics show that from 2012 to 2018, the work of the initiative has diverted roughly 4700 m^3 of stormwater annually (about the volume of water held by two Olympic-sized swimming pools), while almost 800 kg (the weight of a Volkswagen Beetle)

of pollution has been kept out of waterways (Depave Paradise, 2018a). Across all projects, thousands of volunteers come out to lend a hand in depaving, embedding in these volunteers a sense of responsibility, contribution to sustainability and resilience goals, and the value of such engagement.

Whereas a previous generation of sustainability planners may have heralded such an initiative as leading toward "complete streets," a critical discourse is emerging around the corollary value of "incomplete streets." In their work on incomplete streets, Zavestoski and Agyeman (2015) argue that paved public spaces are relics of an auto-centric paradigm as promoted by the "complete streets" and complete communities ideals. They argue for a critical examination of the efforts to green and activate transportation planning in cities in the past 15 years, and for more emphasis on promoting inclusive and citizen-engaged work to replan the uses of our streets and other paved areas. While the transportation planners and engineers who have long been entrusted with planning our cities' paved areas and networks have a preference for "complete" streets planning, an adaptive management and social-evolutionary approach to urban resilience calls for putting more of the work in the hands of the public. Doing this will certainly result in "incomplete" streets, but from the evolutionary or transformative standpoint of resilience, we should not see this as a negative outcome. While the underlying logic of complete communities has been one of comprehensive self-sufficiency, the logic underlying incomplete streets is one of adaptiveness, equity, and inclusion. At the same time, incomplete street design is inspired by landscape architecture concepts that create working green, urban landscapes as they re-establish hydrological balance, healthy wildlife habitat, and can "harness natural processes in the service of the urban environment" (Girling and Kellett, 2005: 58).

Depave Paradise's self-initiated urban greening projects illustrate societal acceptance for more adaptive, integrated, sustainable, and green models that rebalance urban design. A clear willingness to reduce barriers between natural and urban systems and strengthen opportunities to integrate quality urban design and ecosystem services is emerging (Girling and Kellett, 2005: 14) through more adaptive and civic-led "green" models.

Conclusion: Toward an Urban Development Path at the Nexus of Sustainability and Resilience

This chapter has presented an understanding of the challenges and opportunities faced by Canadian cities related to aspirations for sustainability and crises of climate change. Throughout, we have talked about how different trends, values, patterns, and policies in cities can be understood as relating to the need for action on these fronts in different ways—that is, that lead toward a new development path for Canadian cities.

Cities in Canada and around the world generate the lion's share of GHG emissions—perhaps as much as 80 per cent. The explanation offered for this is that while the concentration of development, residents, and workers in space through compact urban planning provides possibilities for energy and emissions efficiencies, it equally provides the possibility of multiplier effects of all kinds. On the one hand, cities amplify income, wealth, purchasing power, consumption, and production; but on the other hand, most of this amplified activity generates GHG emissions. Was Bill Rees (1992; also see Rees, Chapter 21) right when he said a generation ago that "However bright its economic star, every city is an ecological black hole"? How does this calculus account for the political and cultural work that cities do today to raise awareness and political will for moves toward different lifestyle modes that are less GHG intensive?

Common to the three cases of urban resilience planning discussed here—Surrey's Coastal Flood

Adaptation Strategy, False Creek Flats planning for a future flood zone, and the Depave Paradise organization supporting citizens in their desire to rip up the pavement in their local public spaces—are elements of building urban resilience capacity, focused specifically on addressing climate change and sustainability challenges. The environmental implications of such models clearly demonstrate potential improvement in management of urban landscapes, better biodiversity outcomes, and improved water quality and flow. The reuse and repurposing of urban land in this way provides proof that environmental and infrastructural change can be mobilized to benefit human and ecological communities (Lokman, 2017: 5). At different scales, in different institutional structures, with different priorities and opportunity spaces, these initiatives all work to advance a new development path for Canadian cities in a context of sustainability threats and climate change risks. All of them experimental, with uncertainty embedded from point of initiation forward, these examples demonstrate samples of progressive work in Canadian cities. A critical perspective is needed to see these projects for their consequences along the way, so that the pursuit of resilience and sustainability in our cities remains a goal with social, ecological, and economic justice values built in. After all, despite the strong indication of an urban resilience approach to sustainability goals, it remains to be seen how and to what extent urban resilience work will fully contribute to social and ecological sustainability. A lesson exists in the complete shift in understanding of the social justice implications of a "living-first downtown" considered in this chapter, from a planning and development project worth fighting for in the 1980s, to a social justice nightmare that now haunts planners in Canada's gentrifying urban cores.

These examples also demonstrate a recalibration of sustainability aims away from equilibrium thinking and toward a dynamic "safe-to-fail" resilience perspective (Ahern, 2011: 341–42). The difference that this new perspective makes to practice is that it aims for strategies of value even under stressors and strains that have not yet been experienced, as opposed to strategies that are expected never to fail under conditions that hold constant. In other words, flexibility in planning and design can encourage transdisciplinary approaches to research and practice, and the attendant capacity building associated with this. This shift in perception of the strategies that constitute sustainable urban development reflects new potential for innovations across fields such as planning, urban design, ecology, engineering, natural resource management, and sociology.

There are numerous points of commonality between the pursuit of urban resilience and the pursuit of urban sustainability. Both framings explicitly recognize the value of cross-disciplinary work and thought in order to improve the ability of actors with different perspectives, skills, and capacities to solve problems together that they could not solve alone. Both carry an aspiration for transformation of our cities toward a higher level of well-being and civilization than we have seen in our past. At the same time, the pursuit of urban resilience is silent on a number of fronts that are considered essential to progress on sustainability, such as biodiversity, waste, and intergenerational equity. And, not to be missed, the notion of resilience is silent on the idea of "limits to growth," long a clarion call of the environmental sustainability movement, and a major sticking point for the implementation of limits-oriented sustainability solutions within a capitalist growth machine. It is accepted that effectively addressing climate resilience in cities will entail large investments, and that a sizeable proportion of these investments will be spent to pour concrete, itself a major source of GHG emissions. Stronger engineered systems and reinforcements of dykes, seawalls, evacuation routes, and critical urban institutions such as hospitals and evacuation centres may produce cities that are in a better position to withstand severe storms and other unexpected crises, but whether they also create the conditions for more long-term social, economic, and environmental sustainability is another question.

Review Questions

1. How has the perception of "sprawl" changed over time in Canadian cities?
2. Can urban resilience strategies effectively reduce the impact and address the consequences of climate change in Canadian cities? What are some of the other consequences of taking a resilience approach in urban planning and policy?
3. Characterize the "dark side" of planning for livability in some Canadian cities. What, if any, initiatives could be put in place to make livability an approach with fewer negative trade-offs?

Notes

1. Transit-efficient locations are locations in close proximity to means of getting around without a gas-powered vehicle. They may include bus or rapid transit, bicycle routes or stations, walking routes, and other active transportation modes.
2. Greenhouse gas emissions are often measured in tonnes of carbon dioxide equivalent per person (tCO_2e per capita). The calculation of CO_2 equivalent takes different greenhouse gases such as methane, water, and ozone into account by rendering their GHG intensity equivalent to that of CO_2. A GHG measurement expressed per capita indicates the level of emissions of an area, such as a city, as if each resident of that city were responsible for an equal share.
3. Countervailing this story about urban GHG efficiencies, this research group has by contrast shown that cities amplify waste generation (Hoornweg, Phada-Tata, and Kennedy, 2013).
4. The survey was conducted by McAllister Opinion Research and included a representative sample of 1701 British Columbians.
5. The CMHC study analyzed data for the period 2010–2016.
6. The report also uncovers an interesting, and perhaps new dynamic in this drive toward density: many condo buyers do not stop at investing their income in one home: about a quarter of condos in Vancouver and a third in Toronto are owned as investment properties and occupied by renters.
7. The possible permutations of proposed allowable dwellings on affected single-family-zoned lots include one principal residence (fee simple ownership) plus one basement suite (rental) plus one laneway house (rental); or two duplex residences (strata ownership) with one basement suite each (rental). In all variations, the maximum buildable area remains what was already permitted for a single-family home.
8. To learn more about trends in model sustainable neighbourhoods and their assessment systems, check out these websites: www.transformativetools.org/ and https://ecourbanismworldwide.wordpress.com/
9. The Paris Climate Agreement is named after the host city of the 2015 agreement struck by the nations that are party to the United Nations Framework Convention on Climate Change. There are 197 parties to have ratified the agreement, committing these nations to voluntary and independent actions that will strengthen efforts to address climate change and keep global temperature rise in this century below 2°Celsius above pre-industrial averages. See https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

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8.6. CASE STUDY TRANSCRIPTS, RECORDINGS, & VISUALS

Access data files via the following link: https://rwth-aachen.sciebo.de/s/B5eETFx5dNeWVvV

9. DECLARATION