Experimental Urbanism: grassroots alternatives as spaces of learning and innovation in the city

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Abstract

There is a great interest in experiments in the contemporary city. Many diverse initiatives use the term to describe their efforts of questioning existing configurations or proposing new ideas. In the wider literature on urban change, experimentation is frequently suggested as a method for bringing into being the uncertain and hopeful alternatives of critical or insurgent utopias. Yet there is little explicit discussion of what experimentation actually means in these contexts, which fuels concerns over an empty buzzword. Some useful ideas have started to emerge from discussions of grassroots innovations and urban laboratories, which highlight local relevance and strategic visibility as important markers of experimentation. Yet they also show the need for wider conceptual and empirical work on experiments that are explicitly urban and alternative in their outlook. This research takes up this challenge by interrogating the underlying notion of experimentation, tracing its development from a scientific method towards an adaptive and action-oriented social practice of knowledge-making. This extension highlights the importance of place and the involvement of heterogeneous, more-than-human collectives in this process. It also reveals collective experiments as relational practices of negotiation that create knowledge through surprise and adjustment, and which can best be conceptualised as socio-material assemblages.

To understand how urban grassroots alternatives assemble their experimentality, the research works with three case studies that describe themselves as experiments: the autonomous town of Christiania in Copenhagen, the eco-squat of Can Masdeu in Barcelona, and the Prinzessinnengarten, an urban garden in Berlin. Using specific constructions, routines and projects for each site, the discussion traces their experimental dimensions through material practices, social dynamics and underlying approaches. It highlights their assembling as processes of balancing, integration and cultivation respectively. Despite these different modes of emergence, the cases indicate some shared experimental features: a focus on learning as knowing-in-practice, an ambiguous relationship of separation from and interconnection with the city, and a clear commitment to publicness. This casts experimental alternatives as distinctive sites of urban learning that make visible alternative modes of dwelling and enable translation through situated adaptation. It also presents them as sources of an urban innovation that is incremental and improvised rather than based on radical novelty. Experimental alternatives extend the promises of urban grassroots interventions by opening up wider avenues of engagement and participation, which suggests experimentation as a useful approach in the work of such initiatives.
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1 The experimental city

In the summer of 2012 one of Berlin's first autonomous cultural projects, the ufa-Fabrik in Tempelhof, hosted the Experiment Days: “a platform for self-organised, communal living projects and actors of creative sustainability, who understand the city as a habitat to be shaped” (ExperimentDays 2014). The initiative is an annual fair of co-housing and alternative living projects which began in 2003, with over 80 projects presenting their work and looking for new participants and supporters. It also supports other “experimental-artistic-ecological-cultural lifestyle projects” (LaFond 2010, p.66) in Berlin, many of which are examples of reclaimed space that have grown out of the city's wider tradition of squatting and temporary use. In 2012, the Experiment Days also included an 8-day 'ExperimentCity Camp'. Pitched on a grassy area, it was a temporary intervention constructed from recycled materials, with pallets and old wood forming a stage, a shelter and various workstations. A local group built a small cottage over five days, insulated with straw and mud; another ran the public kitchen, cooking vegan dishes for camp participants and visitors. The activities and infrastructures were run with processes of shared self-management, with a check-in session every morning, different areas of responsibility and communal events. The camp hosted public workshops around creative sustainability, ranging from trash art to mindfulness, film screenings and discussion rounds. Participants described it as an “8-day effort in experimental organisation and practice” (own notes, 17 September 2012). The following year, the ExperimentCity Camp pitched up on the Tempelhofer Feld, a former airport that is now a public park and considered a “Experimentierfeld”, or field of experimentation (Gutmair 2014). Around 20 so-called pioneer initiatives, from urban gardening to climate change golf, settled on the site, firing up discussions on the future of this unique space, which culminated in a rejection of city government plans to build new residential quarters on the site by a public referendum.

The Experiment Days and ExperimentCity Camp, the pioneer projects of the Tempelhof experimental space and the different events associated with these efforts stand as examples of the many initiatives concerned with urban life, futures and alternatives that have adopted a shared label: they see themselves as experiments. The experimental tag is not restricted to Berlin, and it includes diverse efforts, from temporary interventions in public space to long-term attempts at alternative living. Cities, it seems, have gone experimental. There are the public art experiments of the Cargo Collective in London that introduce new objects into public
spaces (Cargo Collective 2014) and proposals for an inflatable mobile laboratory in a landfill site in New York (Curbed 2013). The Arcosanti urban laboratory explores new forms of urban planning and design in the Arizona desert (Arcosanti 2012), while the residents of the ZeGG Centre for Experimental Cultural and Social Design in Germany describe their 25 year old community as a “living experiment and a place for transformation” (ZEGG 2014). What unites these initiatives is their concern with the future of (mostly) urban living and a commitment to small-scale practical intervention that opens up alternatives for debate and assessment. This is a different approach from one based on development plans or visions. The experiments seek to provide a practical mode of questioning existing configurations and developing ideas, and they are based on a shared assumption around the importance of ‘doing’, of materialising these discussions in the urban environment. This includes a belief that bottom-up, local action can be meaningful in bringing about change. They also share a public dimension: they practice their interventions visibly, inviting people to comment, contribute, participate.

Alongside the rise of experimentation as a term used by artists, communities and urban practitioners to describe their work, the notion has also attracted increasing conceptual attention. Researcher and artist collectives such as The Office of Experiments (2012) or LOT (2009) stage conferences and research projects to consider the experimentality of the social world and to develop alternative epistemologies and methods of engaging with it. The Office of Experiments outlines its mission as follows:

Our approach to experimentality is shaped by the conceptual development of relations between forms of knowledge; from the specifics of a scientific rationale developed, to the material shape, systems and structures of experiments, including experimental representations and their role in culture and the public imagination. (The Office of Experiments 2012)

This posits the experiment as a cultural as well as scientific concept. In academic circles, human geographers in particular have started to pay attention to the formation, practice and value of experiments in a wider sense, with a number of comments and reviews written in the past five or so years (Davies 2010; Last 2012; Powell and Vasudevan 2007) and several research projects and conferences dedicated to the idea of experimentation (CRESC 2010; Institute for Advanced Studies Lancaster 2010). In doing so, they have engaged with other disciplines such as science and technology studies, sociology and anthropology, drawing on their distinct conceptions and definitions of experimentation and seeking to apply them to new contexts and issues. Given the prolific application of the experimental term in a practical urban context, it is time to point this conceptual discussion in the direction of the city.
Urban change and utopia: imagining an alternative future

What the many experimental urban interventions are concerned with, in one way or another, is the possibility of imagining and making a better city. This raises fundamental questions about how both the urban, and urban alternatives, are understood here. Cities are traditionally perceived as iconic spatial formations, distinguished by the density and heterogeneity of social and material elements, and the network that connects them (Pile 1999). These dynamics in turn create a distinctive ‘urban-ness’ that is not only expressed in architectural forms but which affects all aspects of social life. While much urban scholarship considers the structures that form and reproduce this urban condition (see Harvey 1973; Smith 1996), another approach focuses on the city as experienced in the everyday – the complex and messy practices of mundane life. This takes its starting point in particular from De Certeau’s (1984) work, in which he casts the city as a text that is continuously written by movements and bodies. The urban here is defined through embodied practice, and the diverse lived experiences within. More recently, relational conceptions of space (Massey 2005) have led to cities being thought relationally, too (Jacobs 2012). What is emphasised here is not their distinct and bounded character, but the flows and mobilities that reach beyond their physical location, that connect places and dissolve clear spatial categories such as rural/urban, or city/region. “The city”, Amin and Thrift (2002, p.1) write, “is everywhere and in everything”. This has led to an increasing attention on the connections between cities (Robinson 2011; Ward 2009) as well as the assembled, fluid and diffuse character of what is called the urban (see Farias 2010a; for a discussion on the intersection of these views see Jacobs 2012), giving this label much greater depth.

These wider conceptualisations have a bearing on experimental efforts in an urban setting. Many of the interventions I outlined before arise in response to specific urban issues. They engage with concerns around climate change and the search for more ecological forms of urbanism, taking up issues such as peak oil, energy transitions and carbon emissions that are widely discussed in urban scholarship (Bulkeley et al. 2011; Bridge 2010; Register 2006; Hodson and Marvin 2010a). Others raise wider questions around the dominant processes of city-making, in particular issues around inequality, marginalisation and gentrification (see for example Smith 1996) and the “actually existing neoliberalism” of urban development projects (Brenner and Theodore 2002). Underlying many of these efforts is a particular concern with the role of public space, a reclamation of the urban commons from private commercialisation (see Mitchell 2003). As these experiments ask questions about urban life, and both test and
share ideas, they pave the way for potential alternatives “to make and remake our cities and ourselves” (Harvey 2008, p.23). The heterogeneity of social life acts as a seedbed for diverse ideas, while the density of socio-material relations gives visible prominence to such interruptions and challenges within the everyday life. These aspects chime with the bounded image of the urban. Yet from a relational perspective, urban interventions gain a much wider potential and relevance, as they allow new connections to form. As new elements in a network or assemblage, experimental interventions can effect change in various directions. As such, they can contribute to the formation of alternatives that are urban without needing to fulfil particular spatial criteria. This view underlies my interest in urban experiments.

To further open up the idea of urban alternatives, an engagement with different conceptions of utopian thought is useful. In many ways, utopias are the ultimate alternative: derived from a combination of the Greek eutopos and outopos, a good place and no place (Levitas 2003; Pepper 2005), utopias are traditionally understood as “blueprints of the good (or even perfect) society, imagined elsewhere and intended as prescriptions for the near future” (Levitas 2003, p.3). In response to problems of the present, utopian thinking distances itself from current realities and creates often radical alternative models of a better future. Such utopian visions are closely associated with the city as a focal point for these hopes (Pinder 2002; Harvey 2000), as radical utopian change has often been conceived as primarily urban. The future of cities itself is intricately tied to ambitious projects of societal change and city planning; in Harvey’s (2000, p.156) words, it is either “infected” with or “inspired” by utopian modes of thought. These grand projects are evidenced by urban planning history from the Garden Cities to Modernism, which took very different conceptual approaches to the advancement of the human condition but shared a belief in the method of a large-scale remodelling of the city (Fishman 1982; Miles 2008; Pinder 2002). They further shared a fundamental understanding of the urban as a distinct spatial category that can be directly altered and shaped. Yet the difficulties of these utopian conceptions, in particular the failures of modernist programmes to reshape cities for a cleaner, healthier, better society, are well-documented (see for example Holston 1998; Jacobs 1993; Sandercock 1998). The problem, as Pinder (2002, p.233) summarises, is their absolute reliance “on the projection of ordered spatial forms” which would “provide the settings for ordered, harmonious societies, in which the ills of the present day are banished to another space and time”. Utopian urbanism contains a fundamental belief in the possibility of shaping a better society through plans, of materialising ideals in the concrete urban form which then serve as the seedbed for a radically new and different urban life. This alternative life is seen to emerge from the ordered spatialities of Le
Corbusiers’ clear lines or Fourier’s ideal city, or from nostalgic concepts of an authentic community, as in the pre-industrial reference point of the Garden City (for a discussion of these examples see Harvey 2000). Their visions seek to transcend the complex issues of the present.

This brings out an inherent dilemma in traditional utopianism. Utopianism relies on a commitment to radical otherness or “estrangement” (Sargisson 2007), where the break from the present creates the possibility for a true alternative, for a future of new, as yet unexplored options (Jacoby 1999). This is its strength – utopian visions can transcend the problems and ingrained paths of the presence by taking this step in estrangement. At the same time, this divorcing of future and present is also its greatest weakness. By rejecting what already exists, and leaving behind the lived elements of the city, there is no path for these visions to become realised. Leaving the realm of imagination requires an engagement with the lived world in some form. Where authoritarian or state-based implementations of these visions have been attempted they have invariably failed, as even the most radical rebuilding of a city eventually meets existing social, cultural and political conditions. The realisation of a utopian spatial form requires the mobilisation of a set of processes which are the same processes the project seeks to stabilise, such that “the failure of realized utopias of spatial form can just as reasonably be attributed to the processes mobilized to materialize them as to failures of spatial form per se” (Harvey 2000, p.173). Or as Holston (1998, p.43) puts it, “the necessity of having to use what exists to achieve what is imagined destroys the utopian difference between the two that is the project’s premise”. By not addressing the underlying causes of, for example, social or environmental problems (Pepper 2005), and by underestimating the complexity and unpredictability of social life (de Geus 2002), these alternatives consistently fall short of their utopian ideals.

There are other possibilities for an alternative urbanism, however, without giving up on the utopian impulse as “an irrepressible part of the human spirit” (Sandercock 1998, p.1). For Pinder (2002), the power of utopian thinking lies not so much in its totalising re-imagination, but in its potential to question current configurations. The break and distancing that utopian thinking enacts “can create space for challenging what is, for disrupting dominant assumptions about social and spatial organisation, and for imagining other possibilities and desires” (Pinder 2002, p.238). Rather than creating all-encompassing blue prints, utopian imaginaries “may be re-thought in terms of addressing what is possible, and of seeking out the prospects within present conditions for different and more just processes of urbanization” (ibid, p.239). This is reflected in the critical and transgressive utopianisms explored by Sargisson (2000). Drawing on
her work with eco-villages and intentional communities, she develops the idea of a critical utopian space “in which we can begin to think differently, play with alternatives, explore ideas to their limits – and from which, perhaps, we can approach the world with a fresh viewpoint” (ibid, p.140). What these spaces have in common is that they reject the idea of comprehensive, planned solutions to today’s problems in favour of more grounded and heterogeneous alternatives. This brings them closer to the concept of heterotopias (Foucault 1986), as “spaces of alternate ordering” which “organize a bit of the social world in a way different to that which surrounds them” (Hetherington 1997, p.viii). These diverse alternatives carry the utopian impulse of hope for a different future not as one good or better society but as “plural, underdetermined, 'goods' or 'betters'” (Anderson 2006a, p.697) that are a direct response to the problems of existing social structures. The focus then changes from the specific contents of such visions – because there will be many – to questions about processes: not the utopian social processes of free-market capitalism (Harvey 2000), but the diverse possibilities within the everyday city. The question becomes not only what spatial ordering we want to see, but what dynamics we want to engage in to get there, opening up new discussions around how urban ideals and their associated practices are worked out, where they emerge, and how they contribute to a wider project of urban change (Pepper 2005). The approach, therefore, becomes relational.

This recasting of the utopian impulse puts a spotlight on the idea of better futures and positive alternatives not as imaginary and abstract plans but as grounded, practised and diverse efforts. In the context of the environmental and resource challenges facing our society,

there is not only a need to dream of other futures, but, in the context of the recent economic crisis, there are also outright basic needs to immediately practice alternatives, to stimulate the utopian impulse telling us that change is both possible and necessary. (Bradley and Hedrén 2014, p.2)

Such practised utopian alternatives have generated quite some conceptual interest. Cooper (2014, p.2) for example uses the term “everyday utopias” to refer to “networks and spaces that perform regular daily life, in the global North, in a radically different fashion” and which “work by creating the change they wish to encounter”. Her case studies include a feminist bathhouse, Hyde Park’s Speaker’s Corner, LETS schemes and an alternative school – spaces that are wildly different in their specific concerns and objectives but which all practice critique by building a viable alternative. Her key argument about these spaces is that they take up utopian ideas within the everyday, revealing the possibilities of a different future by giving expression to and maintaining already existing alternative modes of living. They offer a utopian estrangement
through practices that go beyond what is considered 'normal' or mainstream but which remain close to wider society as partial, temporary or embedded sites of everyday life. Cooper outlines the work such initiatives need to perform in the present: they form “richly productive and important sites for social change politics” which at the same time “reveal the compromises, accommodations, and practical dilemmas of counternormative ways of living” (ibid, p.218).

Examples like these indicate how diverse alternatives emerge from different practices in the city, carrying the potential for wider urban change. They create spaces of difference and offer interesting glimpses of urban alternatives embedded in a transgressional or critical conception of utopia. They are sites where “bodies of thought and bodies of people coincide” (Sargisson 2000, p.140-141), where ideas are worked out and materialised. As Andy Merrifield (2009, p.385) eloquently summarises:

Out of a trinity of hope, imagination, and determination, new looking-glass perceptions are emerging and merging, forging alternative lingua francas amongst men and woman [sic] – amongst ordinary men and women – who have had enough with what the labor market and the supermarket offer them, and they’re achieving amazing things in lonely, abandoned rural spaces as well as in teeming, overpriced urban places, reappropriating and rebuilding worn-out properties, inventing life anew sometimes from breezeblock and out of the decaying jetsam of everyday life.

Beyond the good place and the no place of traditional utopianism, and the placelessness (Kunstler 1993) of modern cities, this suggests a new possibility: diverse alternatives that work with and create new qualities of place, or what Harvey (200, p.173) calls “placefulness”, and which bring out the critical utopianism inherent in existing alternatives. In short, it suggests the possibility of change emerging from the multiple facets of everyday life.

The need for critical urban learning

These considerations suggest a diffuse but potentially important cross-over between transgressive, hopeful alternatives and the experimental initiatives I outlined at the beginning. They share a fundamental belief in the possibility of things being otherwise, a desire to question existing configurations through practical interventions, a lack of pre-set plans as well as a general commitment to trying things out. This raises the question of how alternatives relate to experiments in the city. Not all alternatives claim to be experiments, and there are experimental efforts that do not offer an alternative, yet their common concerns call for further exploration. If the search for diverse alternatives is an open-ended, uncertain and
exploratory process that takes place within the ongoing flow of daily life, is there something to be gained from alternatives that are experimental, or from experiments that actively seek to bring about change? This relates to the issue of how such diverse, fragmented and localised efforts can contribute to wider notions of urban change. How can the everyday utopias of a bathhouse or the insurgent space of a squat gain relevance beyond their immediate confines, in ways that impact the ingrained and highly political structures of the city? If an experimental setting can help these alternatives in establishing and developing their ideas, this suggests a powerful role for urban experiments.

The fundamental question here is one of urban knowledge making: how can cities learn, how can they change the patterns and structures that shape their daily life while this daily life continues. There is a great interest in urban learning and knowledge creation in the context of urban policy making, with different models of policy mobility and circulation (see McCann and Ward 2011; Peck 2011). Cities learn by exchanging knowledge along a variety of channels, as several detailed studies of the trajectories of particular policies show (see Ward 2006 for Business Improvement Districts, McCann 2008 for drugs policy, Temenos and McCann 2012 for sustainability solutions). This learning cannot be described by fixed models of transfer and diffusion but requires an engagement with their “mobilities-and-mutations” (Peck 2011, p.1). As McCann (2008) summarises, policy mobility involves a complex set of expertise and practices that is both local and global, and which is structured along important decisions around approaches, models and best practice. Urban actors exchange and share practices through their movements, which are mediated by a range of institutions across different scales. Learning in the policy arena, therefore, emerges as a translocal assemblage (McCann 2011; McCann et al. 2013) which is highly political. This political angle of policy learning arises as an extension of the wider socio-economic structures and ideologies in which it is embedded – in particular, that of neoliberalism. As Ward (2006, p.71) argues, neoliberal prerogatives “infus[e] the programmatic and technocratic procedures of policies... in such a way as to obfuscate from view the logic that underscores and reinforces it as very much an ideological set of projects”. Cities learn from each other along complex paths, which are shaped by wider global structures.

Urban policy learning emerges as a contested process that speaks to a performative understanding of discourses and practices in an urban context. As Gibson-Graham (1996; 2008) has persuasively argued for the capitalist economic system, particular structures become dominant not because of their inherent strength but in the way they are discursively enacted. Dominant patterns such as neoliberalisation are “predicated upon and produced by the
dissemination and repetition of knowledges” (Healy 2009, p.339). They are multiple stories that are convincingly woven together to create a coherent explanation of the world and a clear-cut projection of the future, and which, if we treat them as such, assume a hegemonic role that conceals all other possibilities. Yet precisely because it is 'just' a story, this discursive construction always contains cracks in which alternatives become possible (Pickerill and Chatterton 2006). In the context of urban policy learning, Ward (2006, p.71) consequently sees it as a responsibility of critical urban scholars to interrogate the movements and transfers, and the process of urban learning more generally in order to “find its fault-lines, its cleavage points, those spaces in which alternative agendas, particularly in relation to [urban concerns], might be realized”. Often these alternatives appear marginal, not because of their inherent lack of value but simply because they are less acknowledged, researched, discussed and practised. As such, they rarely enter the wider knowledge discourse as feasible counterpoints. The performative approach therefore calls for greater attention on potential alternatives that allow a different kind of urban learning, one which picks up ideas and practices that are distributed, hidden, diffuse and mostly beyond the radar or outside of the agenda of planners and policymakers. Any work with them then becomes “simultaneously a documentation of where we are, and a projection of where we could be” (Pickerill and Chatterton 2006, p.731). Or as Pinder (2004, p.794) writes:

One task of writing cities against the grain... is to seek out alternative practices and experiments in cities, practices that attempt to wrest urban meanings and appropriate spaces away from the practices of dominant agendas.

Engaging with experiments in urban learning, therefore, has valuable political potential.

This call is supported by a more critical and nuanced engagement with the notion of learning in an urban context, which is most prominent in Colin McFarlane’s work. Urban learning, McFarlane (2011a, p.153, original emphasis) argues, refers not just to a desire to know more about a city or to improve established paths of knowledge generation; it “involves questioning and antagonizing existing urban knowledges and formulations, and learning alternative formulations”, which entails “exposing and unlearning existing dominant arrangements that structure urban learning practices and ideologies, whether in relation to revanchist neoliberalism or gentrification or exclusive pronouncements of the 'smart/creative' city". Critical learning becomes an integral part of rethinking and re-doing the city along alternative lines, along three interrelated dimensions: as a critique of existing and widely accepted knowledges and their subservience to dominant structures; as a presentation of alternative imaginaries, logics and practices; and as an open discussion of where, how and with whose
involvement these alternatives might emerge. The sources of this kind of learning are diverse and complex: in McFarlane’s examples of alternative housing in India and Brazil they range from specific building project to neighbourhood forums, social movement and policy networks underpinned by the many exploratory, uncertain ways in which urban inhabitants seek to make sense of their environment. Engaging with the full diversity of these urban learning assemblages not only means identifying the substantive direction of new imaginaries and practices. It also means taking up the “methodo-political task” of identifying “where they might come from, and how that learning should take place” (ibid., p.154; see also McFarlane 2011b).

In order to cultivate the critical potential of urban learning, McFarlane (2011a, p.154 explicitly asks for an engagement with “experimental forms of learning initiatives”. These are initiatives that take up and pay attention to a more diverse set of voices and concerns about the city, and allow these other views to enter substantive planning and policy discussions. How exactly this kind of grassroots learning happens, however, is an open question, making it a contingent and experimental process. This suggests that in the context of critical urban learning, experimental alternatives may have a valuable role to play. It puts the spotlight on those critical and everyday utopias that are more than practical interventions to improve the existing city on the small scale, allowing alternative economies, politics, environmental and social engagements to grow amidst the everyday life. It singles out those that also function as experimental forms of knowledge making and testing, and as conceptual sites which inspire a rethinking of the dominant ideologies that shape the city. Experimental grassroots alternatives therefore provide exciting possibilities for an alternative process of urban learning.

**Research questions and outline of the thesis**

The discussion of critical utopias and the potential of experimental approaches in urban learning puts the spotlight on the intersection between experiments and alternatives in the city. But the prolific use of the experimentation metaphor for all kinds of urban interventions suggests that an in-depth engagement with these concepts and their application is required to flesh out what this intersection means. The excitement and promise of an experimental urbanism requires a more careful scrutiny with regards to its critical and political impact, as Iveson (2013, p.942) clearly states:

> There is no guarantee that the proliferation of DIY experiments with appropriation and alternative uses of urban space will coalesce into a wider politics of the city. However, the prospects for such a politics do exist and must
be teased out if small-scale projects are to coalesce into large-scale change.

It is an open question what experimentation means in urban practice, how it is defined by different projects and initiatives, and how they apply and perform such ideas in their work. The conceptual linkages also say little about how an experimental approach can support or strengthen alternative grassroots efforts that seek substantive changes in the city of the here-and-now. This calls for is a detailed and grounded inquiry into these linkages and potentials beyond a theoretical association. The aim of my thesis, therefore, is to sketch out the notion of experimental alternatives and grassroots experiments, and to evaluate their contributions to a critical urban learning. As such, it will contribute to existing discussions of alternative urbanisms by investigating a particular approach, that of experimentation, as a way to foster and build critical and relevant alternatives. It also makes a contribution to the increasing academic interest in experimentation as a dynamic and action-oriented process of knowledge-making in the world. Specifically, I am working with three research questions here:

(1) How can we conceptualise experiments that take place in the complex, multiple and lived dynamics of the everyday city?

(2) How do experimental grassroots initiatives assemble and practice their experimentality?

(3) And how do these alternative experiments provide possibilities for urban learning?

To answer these questions, I start by reviewing how both alternatives and experiments have been considered in the context of the city. There is a wide interest in guerrilla, DIY, grassroots or insurgent urbanism as efforts that build and practice active reclamations and construct the possibilities for new political subjectivities in the city, with a suggestion that this process is often experimental. These experimental dimensions haven recently been taken up in two discussions: those of grassroots innovations and urban laboratories, which offer a greater emphasis on locally useful and grounded experiments and their potential for public visibility in the city. Yet with their conceptual heritage in models of niche innovation and bounded socio-technical experiments, these discussions tend to over-emphasise techno-centric notions of diffusion and the strategic application of experiments, which fails to capture the more open, exploratory and practised dimensions of critical everyday utopias. I therefore take a step back to consider the notion of experimentation itself in greater detail, taking up the openings and extensions proposed by science and technology studies as well as the more recent engagement with the concept within social and cultural geography. Experimentation here emerges as a
place-specific practice of knowledge-making that engages diverse actors and works within an adaptive frame of learning and intervention. This not only extends the potential application of an experimental approach to diverse settings; it also proposes new pathways for politics through material and object-centred modes of participation. The most useful way of framing such collective experiments, I then argue, is as socio-material assemblages that offer the possibility of surprise and emergence through indeterminate, heterogeneous relations. This perspective guides my further engagement with them.

The chapter on methodology then outlines how I translated these conceptual discussions into empirical research. Here, I particularly discuss the alignments and tensions between assemblage thinking and a case study approach as two urban research methodologies, arguing for an overall focus on learning as a guiding principle for case work with a relational slant. I show how this learning helped my selection of case sites: three alternative projects that are urban in both their location and their relational position within wider social dynamics, and which make explicit claims towards experimentality. These are the autonomous town of Christiania in Copenhagen, the Can Masdeu eco-squat in Barcelona, and the Prinzessinnengarten, an urban garden in Berlin. I then describe and critically discuss how I applied my methods of participant observation and open interviews as part of a wider ethnographic approach in each of the sites, emphasising the contingencies and challenges of the research process and my own role within.

The subsequent three empirical chapters each focus on one of my case study sites as an experimental assemblage. They all follow a similar structure: I start by introducing the sites, their history and fundamental concerns, alongside their respective labels and claims towards experimentation. I then concentrate on specific projects and practices that exemplify key dynamics and patterns. Using these as a starting point, I trace how the sites are assembled as both alternatives and experiments, with an emphasis on the place-making, diverse actors and the ongoing processes of negotiation that underlie their knowledge making. For Christiania, I explore three self-built homes that each express a different life story and materialisation of alternative values in the Freetown. I show how they are both facilitated and constrained by the wider approaches and institutions, outlining the difficult balancing of diverse pathways of experimentation. My focus in Can Masdeu are two patterns of practice, that of food-making and the construction of DIY infrastructure, specifically a compost toilet. Here, the emphasis lies on the integration of social and material dynamics and the creation of collective competence, through which the squat’s experimentality comes to be assembled. In the Prinzessinnengarten I
trace the development of three distinct projects, a DIY irrigation system, a medicinal herb corner, and a clay oven. I show them as responses to a deliberate cultivation of openness that emerges from structures aimed at public engagement and tactile learning. What threads through these three alternative experiments, I argue, are notions of everyday creativity, a responsiveness to the non-human world and, to varying degrees, a public visibility and invitation.

These observations form the basis for a wider discussion of urban learning in extended experiments in my final chapter. What emerges from these assemblages is a nuanced and situated form of knowing-in-practice that is responsive to their materiality and immediate needs. Particularly in its public dimensions, I argue, this knowing creates distinctive prospects for a critical urban learning in which existing alternative practices are recognised and actively promoted. It also raises questions of an alternative understanding of innovation that is based not on radical novelty but incremental improvisation. This speaks to current discussions of the creative city, but also suggests interesting avenues for work on urban transitions to become more responsive to existing efforts and their underlying culture and patterns. I conclude by arguing for a greater appreciation of the potential of alternative experiments in a practice-based conception of politics. Experimental alternatives offer unique patterns of material public participation and grounded focal points of urban policy making with a clear potential for the creation of diverse and hopeful alternative futures.
2 Alternatives as experimental assemblages

This chapter takes up the existing literature on alternatives and experiments in an urban context in order to frame their common elements and intersecting dynamics. The first part outlines the conceptualisations of urban grassroots interventions as both critical and productive efforts. It then takes up the suggestion of their experimentality by tracing the emergent dialogues between the transition and innovation literature and urban studies, which has given rise to certain models of experimentation. The second part takes up their gaps and shortcomings, and explores experimentation from a socio-cultural perspective that responds to the insights of science and technology studies, as well as recent relational and more-than-human approaches. What this suggests is the possibility of an extended, collective experimentation in which knowledge-making is adaptive and rests on ongoing negotiation. This leads to a framing of experimentation as a process of assemblage in the third part, providing the tools for a grounded inquiry into experimental alternatives in the city.

Part 1: Alternatives

Insurgent, DIY and guerrilla interventions: different conceptualisations of urban alternatives

In the introduction I outlined the broad interest in diverse urban alternatives that derives from a critical understanding of the utopian impulse. Cooper’s (2014) “everyday utopias” are one interpretation of these spaces and initiatives that have long attracted the attention of urban scholars. They have been described as “insurgent spaces” (Holston 1998; Hou 2010), “spaces of possibility” (Bromberg 2010), interventions (Zeiger 2011) or DIY urbanisms (Iveson 2013) in discussions that cover a diverse range of loosely connected examples and emphasise different conceptual starting points. Hou (2010), for example, looks at a variety of interventions in the public realm, such as radical art projects, temporary reclamations and appropriations by marginalised communities, which redefine the meaning of public space. These insurgent public spaces “challenge the conventional, codified notion of public and the making of space” (ibid, p.2), providing different possibilities for democracy in increasingly threatened public spaces. Iveson (2013) examines small-scale appropriations and DIY urbanisms ranging from graffiti to cooperative schemes that can become the drivers for a new city through their political claims.
And Bromberg (2010) outlines her ‘possibility spaces’ as spaces for encounter and exchange that break from established relations. Non-economic, autonomous meeting and cultural spaces such as social centres bring into contact radically different people and views, providing the ground for new ideas. One of the fundamental questions that emerges from these examples, as Iveson (2013, p.941) points out, is “what, if anything, connects them across their diversity”: what is the bigger picture formed by these valuable but fractured interventions and micro-spatial practices? This connects to wider issues about defining alternatives. As Wilson (2012, p.721) argues in the context of economic spaces and food networks, “a dualism of uncritical celebration or complete rejection permeates much of the discussion on alternatives”, creating an unhelpful dichotomy of ‘alternative’ and ‘conventional’ that does not reflect their nuanced dynamics. This threatens to diminish their analytical and political relevance. In order to work with the idea of alternatives, these issues need to be confronted for the critical utopias of the city.

An insightful analysis of the dynamics of alternative “everyday urbanisms” comes from Crawford (2011, cited in Iveson 2013, p.942-943; see also Crawford 1999). She identifies four key processes involved in creating urban alternatives: defamiliarisation and the identification of new possibilities; refamiliarisation and the occupation of alienated spaces; de-commodification that asserts use over exchange value; and a collaboration across difference that involves emergent rather than pre-fixed subjects. These processes can lead to a range of outcomes, from the establishment of a social centre over six years (Bromberg 2010) to the impromptu street advertising take-overs discussed by Iveson (2013). But they give a clue towards the underlying practices and spatialities of urban alternatives. Defamiliarisation marks out the utopian impulse of estrangement that allows future possibilities to arise from challenges to the present. There are many ways in which this can take place. An often-cited dynamic is that of play, a key constituent of urban imagination that is “of crucial importance in the city’s activities, and in programmes to free up the city's spaces” (Amin and Thrift 2002, p.115). Play is a driver of possibility (Stevens 2007), a mode of exploring and interrogating the affordances of the city that underpins the Situationist dérives and détournements (No author 1996) as well as the reappropriations of skateboarders, parkour traceurs or playful journeys (Borden 2001; Mould 2009; Battista et al. 2005; Pinder 2005). These playful interventions lay bare the openings and cracks in existing power structures, encourage a hopeful vitality (Pinder 2005) and an ethics of generosity grounded in an intense embodied engagement with the world (Woodyer 2012). This offers options for subsequent re-familiarisation and the formation of alternatives under their own rules, reflecting Iveson's (2013, p.945) observation that
One of the most powerful aspects of some of the practices being grouped together under the banner of DIY urbanism is that their participants are not content with lobbying for a better city some time in the future, and they often refuse to wait for permission to do things differently.

These efforts of reclamation are closely tied to a broad rejection of the values imposed by the wider capitalist and neoliberal logics of the city. “Where capitalism sub-divides and controls, measures and turns land into a commodity – in short, produces abstract space”, Borden (2001, p.29) writes, skaters and other playful urbanists present “new and distinctive uses other than the original function of that terrain”. This potential is developed more substantively by urban alternatives that explicitly propose new economic and social relations beyond mainstream urban economic life – such as non-capitalist exchanges, gift economies and work outside the traditional labour market (see Gibson-Graham 1996). This nuanced understanding of urban alternatives emphasises their multi-dimensionality, moving away from simple dichotomies and instead recognising alternatives as performative efforts grounded in specific practices (Gibson-Graham 2008).

The diversity and complexity of alternative sites is the focus also of Longhurst’s (2013) discussion of alternative milieus. This is not specifically focused on urban examples but it provides a deeper engagement with the geographies of alternatives. He argues that much of the current understanding of what is ‘alternative’ can be traced back to the counter-culture movement of the 1960s, with its reaction to capitalist values and an underlying utopian commitment to social change. This manifests itself in different dimensions: various alternative social pathways (including education and food production), alternative lifestyles (including alternative housing and craft business) and spiritual beliefs. But more important than the precise directions of these ideas are the spatialities they help create. Longhurst (ibid, p.2103) introduces the terms alternative milieus here to “capture the geographical density of countercultural networks, institutions, groups, practices, and individuals that coexist within and around a specific locality”. His work focuses on the Totnes region in South West England, but the concept can also be applied in an urban context. The important point is that we should think of alternative places as the emergent result of diverse intersecting dynamics. Talking about alternative milieus “draws attention to the complexity and diversity of alternative places, avoiding the trap of falling into overly reductive conceptual framings and labels” (ibid, p.2113). He identifies a number of factors that contribute to their emergence, including local institutions, patterns of migration, place images and affective landscapes. These are joined by the material effects of lived practice and culture that often stands in a dialectic and mixed
relationship to the mainstream. These are not meant as absolute categories, but they suggest a focus on the emergent socio-material place dynamics of alternatives as a way to engage with them.

Despite the generally positive view of urban alternatives and milieus and their potential for change, some commentators also strike a cautious note. As Iveson (2013) argues, as valuable as such interventions are, these efforts need to transcend their micro-spaces and coalesce into a wider movement of transformation. Claiming urban space for alternative uses “does not in itself give birth to a new kind of city” (ibid, p.942) – additional work is required to develop an alternative politics for more pervasive and far-reaching changes. Framed in a discussion of the right to the city, Iveson argues that DIY urbanisms carry the potential for new rights but “for this potential to be realized, new democratic forms of authority in the city must be asserted through the formation and action of new political subjects” (ibid, p.954). An engagement with these broader political questions of urban alternatives is evident also in Holston's (1998) work on insurgent spaces, which he sets into conversation with alternative notions of citizenship. His argument starts from the failure of modernist utopian planning approaches: if state-directed modes of planning do not achieve their goals for a better city, then alternatives must be found that are based on different starting points. For Holston, this is a question of citizenship: what is required is an alternative, insurgent understanding of citizenship that dissociates itself from the exclusive dependence on the nation-state. Such a re-evaluation has already been set in motion by for example, the rise of an environmental or ecological citizenship (see Dobson 2003).

Holston (1998) takes this discussion into the city. Alternative sites and initiatives are a source of an insurgent citizenship as they “introduce into the city new identities and practices that disturb established histories” (ibid, p.48), offering different ways of being in the urban sphere. This happens wherever existing structures are shaken up and contested by lived practice: in informal settlements and squats, the everyday spaces of the homeless or new forms of collective housing. The citizenships created in these insurgent spaces are multiple, contingent and diverse as they draw on “the constitutive role of conflict and ambiguity in shaping the multiplicity of contemporary urban life”, revealing “a realm of the possible that is rooted in the heterogeneity of lived experience” (ibid, p.53). This leaves the question of how these reformulations enter the wider discourses of the city. For Holston, this is an issue of participatory planning. A recognition of insurgent citizenship opens up new possibilities of planning that includes local concerns and ideals to contain state-directed futures. Urban planners and strategists should learn from anthropologists in observing, tracing and working with the heterogeneity of the city, thereby “expanding the idea of planning and architecture
beyond its preoccupation with execution and design” (ibid, p.55) to include lived and practised urban alternatives.

This discussion of the insurgent citizenships of everyday urban interventions places a strong emphasis on actual practice as a constituent of urban alternatives – what Holston (1998, p.53) calls their “ethnographic present”. They enable the creation of political subjects through alternative citizenships, yet because of their diversity, the form and process of this formation is wildly different. This emphasises alternative spaces as performative, as creating a “politics of possibility in the here and now” (Gibson-Graham 2006, p.xxvi, original emphasis). Diverse practices can grow within a wider system as this system is continuously remade and performed, leaving cracks, gaps and contradictions. For Gibson-Graham, such a “reading for difference rather than dominance” (ibid, p.xxxi-xxxii) is a political imperative for work on these subjects: applying an overly critical view that reinforces the dominance of a capitalist or neoliberal system diminishes the ability of these alternatives to flourish. Echoing this thinking, Wilson (2012, p.726) calls attention to “alternatives to capitalism [that] can be seen not only as possible in the present, but already in existence”, as these engagements open up wider fields from which new ways of living may be drawn.

Within this understanding of alternatives as already existing and valuable on their own terms there is an emphasis on their experimental nature. This is highlighted by Gibson-Graham (2008, p.613) who point to the “exciting proliferation of economic experiments occurring worldwide” and who cast their discussion as a supportive engagement with these experimental forays. Experimental here does not only refer to uniqueness, it speaks to some of the key dynamics of these alternative efforts as “forms of experimentation and exploration” (Wilson 2012, p.734) that are always precarious, uncertain and incomplete. Holston (1998, p.49) makes a similar point for alternative spaces in the city. He acknowledges that their insurgent visions are a complex mix of “disturbances, emergences, and engagements” that are never finished. This requires a particular approach to their learning: “[c]lity narratives are, as a result, both evident and enigmatic. Knowing them is always experimental.” (ibid, p.37). In the context of environmental activism, Chatterton and Pickerill (2010, p.476) similarly observe that “everyday practices are used as building blocks to construct a hoped-for future in the present, but that this process is experimental, messy and heavily context-dependent”. Alternatives, it seems, in their role as performed and practised attempts at creating a more positive present, lean towards experimentality once one moves beyond simple dichotomies. At the same time, these discussions stop short of exploring the nuances of this experimentality – there is no detailed
engagement with what it means to experiment within and through such alternatives. For this, we need to look slightly further afield.

**Alternatives and grassroots innovation**

One way in which experimental features of alternative efforts have been considered is through established literatures on innovation and transition. This is most evident in the discussions of “grassroots innovations” (Davies 2012; Seyfang and Smith 2007), and recent work on the experimental possibilities of alternative milieus (Longhurst forthcoming). As Seyfang and Smith (2007, p.584) argue, community action is a “neglected, but potentially important, site of innovative activity” that requires more rigorous study. The term experimentation springs up in these discussions in various forms. Innovation is “a process of experimentation with some kind of novelty” (Longhurst forthcoming, p.8), and grassroots innovations can often be seen as “experiments in society in which participation is widespread and the focus is on social learning” (Seyfang and Smith 2007, p.589). The value of a grassroots approach to innovation has been indicated particularly in the context of specific sustainability efforts. An example here is the work on Low Impact Developments (LIDs) (Pickerill and Maxey 2009a, 2009b; Chatterton 2013), “a superb example of sustainability being led from the grass roots” (Pickerill and Maxey 2009a, p.8), which shows the complexity and multiplicity of alternative innovations. LID is a radical approach to housing that draws on unusual, local and low-resource construction styles and alternative social arrangements to develop ecologically conscious dwellings. Its low impact commitment challenges several restrictions of conventional construction, but as an alternative, it is yet to receive wider attention in a planning context. This is what the grassroots innovation approach seeks to address.

Much of this work draws on notions of innovation and experimentation in the economic and socio-technical terms of systems innovation (Davies 2012; Rip et al. 2010) and its multi-level perspective (Geels 2002; Smith et al. 2010), which is often employed as a heuristic of far-reaching societal changes such as sustainability transitions. The model distinguishes three interrelated levels of social configuration – the wider socio-technical landscape, the intermediate regime, and microlevel niches. Put simply, a transition (for example towards sustainability) is said to occur when favourable conditions at the landscape level (such as ecological crises or cultural shifts) align with the emergence of radical innovation niches (new technologies and socio-technical configurations) to facilitate shifts in the dominant regime (such as new patterns of transport or energy use). Innovation in niches is the key element here.
Niches provide the shielded conditions in which new practices, artefacts and ideas that deviate from the normal directions of the regime can be explored and researched (Geels 2002; Smith et al. 2010; Verheul and Vergragt 1995). These radical innovations may then diffuse into the regime as a new competitive technology, or by changing the selection criteria of the market (Smith and Raven 2012, for an in-depth analysis of niche and regime interactions, see Smith 2007). This outlines innovation as a socio-technical process that benefits from a strategic protection and management of niches (see Kemp et al. 1998; Rip et al. 2010). Experiments are understood as one kind of such niches (Vergragt and Brown 2012), mostly in the form of bounded socio-technical experiments (or BSTEs). These are defined as “an attempt to introduce new technology or service on a scale bounded in space and time” (Brown et al. 2003, p.292) – a planned and clearly delineated intervention with the aim of generating innovation. These experimental possibilities range from design collaborations around a zero-energy residential building (Brown and Vergragt 2008) to municipal efforts in the application of fuel cells (Schreuer et al. 2010) and the management of mobility projects (Brown et al. 2003).

The discussion of grassroots innovations takes this experimental innovation niche approach and applies it to local, often sustainability focused, bottom-up initiatives, from local trading schemes to co-housing projects (Davies 2012; Seyfang and Smith 2007). Grassroots innovations are engaged in typical niche building processes of network formation and expectation management, and they apply their own rules which sets them apart from the mainstream market (Seyfang and Longhurst 2013; Seyfang and Smith 2007). They also have the potential for diffusion, when their concerns and innovations enter wider society. At the same time, the grassroots element challenges some of the traditional assumptions and applications of the niche model. Despite the compound description of the 'socio-technical', the niches in the multi-level perspective are “primarily regarded in technology or market terms and as sheltering new forms of technological innovation” (Bulkeley and Castán Broto 2013, p.365, see also Hargreaves et al. 2013; Seyfang and Smith 2007; Vergragt and Brown 2012). This is likely to exclude many interesting initiatives. There is also a tendency “to identify and define actors somewhat narrowly, in relation to and in terms of only the particular sociotechnical regime under study” (Hargreaves et al. 2013, p.404), neglecting marginal actors such as NGOs and citizen groups (see Vergragt and Brown 2012), as well as experiments that play out across different sectors (see Verheul and Vergragt 1995). The model also lacks a greater geographical awareness for the places of innovation (Smith et al. 2010; see also Longhurst forthcoming), suggesting the need for a more grounded discussion.
Grassroots innovations differ from these typical market-based niches in at least two fundamental ways: they are based on direct social (or environmental) need, and they follow an ideology of alternative values. They provide solutions to existing problems but they do so on the basis of an “ideological commitment to alternative ways of doing things” (Seyfang and Smith 2007, p.592), often in explicit opposition to the market. This extends the basic niche model, as they favour socio-cognitive over technological innovation (Longhurst forthcoming). They also acknowledge a wider range of actors, especially from civil society, with multiple organisational forms from cooperatives to informal community efforts, and there is a much greater emphasis on the complexity and interaction of different regimes – local currency innovation, for example, includes matters of food, health and well-being as well as finance (Seyfang and Longhurst 2013). This is underpinned by a recognition of the role of mundane patterns of reproduction – in short, of practices (Hargreaves et al. 2013) that respond to emergent rather than deliberately designed processes of place-making (Longhurst 2013).

Again, LIDs exemplify these points, through a holistic approach in terms of both vision and practice. Although based on ecological principles, LIDs are not only concerned with the environment but are also a direct response to social needs for housing, an anti-capitalist strategy forging alternative economic possibilities, and a holistic approach to living that pays attention to the personal as well as the political. (Pickerill and Maxey 2009b, p.1518)

They also strongly emphasise the emplaced dimension of grassroots alternatives: LID “draws on the skills, traditions, designs and materials best suited to each site, empowering those involved and contributing to an emerging regional uniqueness and sense of place” (Pickerill and Maxey 2009a, p.9), which marks it as both emergent from and constitutive of specific places through its material practices. As such, their potential for wider innovation has a distinctive geographical angle, rooted in practical site-specific projects but extending to wider relations of exchange and an increasing engagement with the planning authorities. Alternative innovations, then, share certain elements with the niches of socio-technical innovations, but their grassroots dimension transcends this framework. Rather than an immediate potential for market diffusion, they offer wider social impacts and provide possibilities for problem solving within a diverse, multi-stakeholder social economy. This makes them both “a source of innovative diversity” and “a symbolic embodiment of alternatives” (Seyfang and Smith 2007, p.590-594).

Experimentation is part of these efforts, and the accounts of bounded socio-technical
experiments give some interesting suggestions of their relevance. What separates experiments from other niches is their potential for learning, as well as innovation diffusion. Quite generally, “each experiment, diffusing or not, can serve as a source of knowledge about how to avoid repeating mistakes and how to build on good experiences” (Brown et al. 2003, p.294). This knowledge is not only helpful for improving the experiment. Experiments are also places for social learning, in which different groups come to work on shared problems and their definitions (Brown et al. 2003; Brown and Vergragt 2008; Hegger et al. 2007). If not the innovation itself, these social learning aspects may reach beyond the niche to give the experiment wider relevance. In short, experiments are seen as “highly relevant, indeed necessary, components of collective societal efforts to define and implement a transition to a sustainable society” (Brown et al. 2003, p.292). Yet the BSTE account still appears somewhat limited as an approach to experimentality in a grassroots context. Firstly, although the social dimension is included in the compound term of the socio-technical, the application of the concept is focused on expert and research-led innovation in the technological sphere. Yet technological innovations only become relevant in their social reality which might, in fact, “deserve experimentation on its own” (Hegger et al. 2007, p.734). BSTEs are a feature of a particular expert-driven approach, and their innovations are unlikely to break with these established trajectories, carrying the risk of an under-appreciation of more critical, radical or simply odd efforts. Secondly, there is an emphasis on deliberately designed or purposefully managed efforts within BSTEs. When discussing the capacity for learning in BSTEs, Brown and Vergragt (2008) identify certain factors that facilitate this learning, such as crisis situations, a sense of urgency, and the availability of an interaction platform. But they also suggest that these situations can be deliberately designed, noting that the experimenter should be “developing the right conditions” (ibid, p.127) and that these drivers “can be purposefully brought into the experiment in order to facilitate learning” (ibid, p.114). While such purposive intervention might be needed in technological niche experiments, it appears odd to suggest artificial urgency or crisis for experiments that emerge from, and take up, real-world concerns, as the grassroots innovations and many of the alternatives discussed before do. The capacities for learning – openness and flexibility towards goals, an entrepreneurial drive and an outward orientation aimed at finding new approaches and partnerships – emerge organically in these projects, and should therefore be appreciated as unique and emplaced conditions. This suggests the need for a less bounded approach to experimentation.
Urban laboratories

There is a parallel discussion here that connects experiments not only with innovation but more specifically with the urban environment. The idea of experimentation in the city has gained some attention in recent years, most notably again in the context of sustainability transitions. New ways of responding to climate threats, the need for adaptation to changing resource conditions, and wider challenges of sustainable or resilient urban development have been considered in the form of urban climate change experiments (Bulkeley and Castán Broto 2013; Castán Broto and Bulkeley 2013), urban and living labs (Dorstewitz 2014; Evans and Karvonen 2010, 2014; Karvonen and van Heur 2014; Strebel and Jacobs 2014) and experimental governance efforts (Evans 2011; Gopakumar 2014). In their survey of climate change experiments in 100 cities, Castán Broto and Bulkeley (2013) identify six fields of climate change experimentation: mitigation efforts related to urban infrastructure, the built environment, the urban form, transport and carbon sequestration, and different climate change adaptation initiatives. These efforts include a wide range of actors and partnerships, most frequently led by local governments, and they place a great emphasis on technical intervention and innovation (Bulkeley and Castán Broto, 2013). Another strand of the discussion considers urban laboratories: bounded interventions characterised by new forms of partnership and governance that work with a range of urban issues, from water supply (Gopalkumar 2014) to housing (Strebel and Jacobs 2014), and which emphasise knowledge creation alongside practical projects. Three common features characterise these efforts: change-orientation, situatedness and open-endedness, linking issues of power to those of place and technology (Karvonen and van Heur 2014; Gopalkumar 2014). As such, they open up new opportunities for planning processes in which goals and approaches emerge from a group of actors who jointly learn to deal with a situated and indeterminate issue, as demonstrated by Dorstewitz (2014) in the case of planning for an industrial heritage site.

Although the city has often been neglected in transition literature in the past (Hodson and Marvin 2010b), the influence of the multi-level innovation literature I discussed in the previous section is visible in these examples too. As Evans and Karvonen (2010, p.130; see also Evans and Karvonen, 2014) argue, urban labs and experiments “constitute classic niches for innovation” as they are designed to shelter innovative ideas and practices from mainstream pressures in a specific urban context. Often this occurs through particular research and university partnerships (Evans 2014; Strebel and Jacobs 2014), and the niche approach offers an understanding of how “seemingly discrete interventions may have wider effects” (Bulkeley
and Castán Broto 2013, p.365). But like the grassroots innovations discussed before, taking these experiments into the complex realms of the city requires an expansion of narrow socio-technical definitions. One example here is Gopalkumar’s (2014) analysis of water supply partnerships that identifies a strong strand of community-led counter-experimentation in response to official strategies, introducing the need for a critical evaluation of experiments. The need to go beyond a niche approach also emerges from Dorstewitz’s (2014, p.447) discussion of the Zollverein heritage site, in which an experimental process “helped to shape the very distinct character of this location and give it a new functionality”, not aimed at diffusion but addressing the unique situation of this space. These concerns are taken up in discussions which cast urban laboratories as both “useful” and “visible” (Evans and Karvonen 2010, p.126) sites of knowledge making. Set in the context of the city, urban labs are only partly sheltered niches. They play other roles too that makes them interesting in the context of urban change.

Urban experiments can be understood as “constructed sites of knowledge production” (Karvonen and van Heur 2014, p.15), and they are spaces in which complex but useful solutions can be developed and tested in real life contexts (Evans and Karvonen 2010). In other words, they are “purposive interventions in which there is a more or less explicit attempt to innovate, learn or gain experience” (Bulkeley and Castán Broto 2013, p.363). Here they draw on the complicated relationship between the laboratory and the field as places of knowledge-making (Evans and Karvonen 2010; Gieryn 2002), combining some of the abstraction and separation of the laboratory with the immersion into the messiness of daily life offered by field studies. As such, they acknowledge the context-specificity and uncertainty of urban development within a specific change-orientation (Karvonen and van Heur 2014). They also offer unique partnerships with knowledge-producing institutions, such as universities and research institutes. Such partnerships are in existence now as part of cities’ low carbon drives (see Evans and Karvonen, 2014), but they reach back in history to British housing research of the 1960s (Strebel and Jacobs 2014) and the Chicago School of Sociology in the early 20th century, whose scholars argued for a “perspective in which society or the city are viewed as a laboratory” (Gross and Krohn 2005, p.66; see also Gieryn 2006). This speaks to wider possibilities of “useful” urban knowledge making, pointing to the way in which “urban landscapes are being used as experimental devices to produce knowledge” (Evans and Karvonen 2014, p.413).

Urban laboratories are also public-facing and ‘visible’ in their application, designed to attract wider attention. As direct interventions in the socio-material fabric of the city, they offer “a material focus for certain actors to ascribe visions of alternative futures that are also globally
recognized” (Karvonen and van Heur 2014, p.386). They are practical tools of governance that shape particular visions of the sustainable or resilient city, which also act as focal points for networks and wider learning (Bulkeley and Castán Broto 2013; Gopakumar 2014). These are often strategic as well as learning-oriented, aimed at particular governance objectives that makes them “critical sites of urban climate politics” (Bulkeley and Castán Broto 2013, p.368). This marks them out as useful governance interventions for cities that have often struggled to implement comprehensive strategies of climate change adaptation in the face of social, economic and political challenges, or have failed to adapt generic interventions to place-specific issues and dynamics (Evans 2011). Experiments offer a way of addressing these problems, as they provide direct, practical interventions that respond to local issues and work with local constellation of actors. As Evans (ibid, p.226) further describes, urban “climate experiments are where governance is located; they represent the practical dimension of adaptation” in the city. It is in this dual role of usefulness and visibility that the strength of urban labs can be found, as they point “towards the way in which the city has always been experimental, in the sense that new knowledges are tested in order to alter the way in which the city is administered” (Evans 2011, p.226). Urban laboratories, therefore, correspond to the experiments of the socio-technical literature in their emphasis on learning, and their focus on specific interventions on a bounded scale. But they go further, by producing knowledge with direct local relevance and by acting as reference points and inspiration for wider policy innovation and change. They are learning interventions aimed not only at future diffusion but current impact, with a policy and governance role. This indicates a move beyond technological innovation to a wider conceptualisation of urban experiments.

In their overview of climate change experiments, Bulkeley and Castán Broto (2013) identifies a heavy emphasis on local governments as leading actors and a strategic application of such labs to further existing governance goals. As such, urban labs are not alternatives, even if they employ certain experimental strategies. However, the analysis also reveals forms of grassroots experiments [that] co-exist in the city alongside these strategic interventions, raising questions concerning the ability of otherwise marginal actors to use experiments as a means of advancing an alternative politics of climate change. (ibid, p. 373)

This brings the alternative grassroots efforts back into the picture, this time in the city, suggesting an important field for discussion that is only starting to be explored. As Seyfang and Smith (2007, p.599) acknowledge for grassroots innovation in general, “[i]n-depth qualitative analysis is needed to understand conditions for the germination of innovative processes at the
grassroots”. This is the case particularly in an urban context, where there has been little explicit engagement with bottom-up or community experiments (although see Gopakumar 2014). Going back to the original challenge of critical, diverse utopias, it is exactly those emergent, local efforts that hold much promise for the creation of wider urban alternatives. Experiments outside of the mainstream channels of governance and planning are likely to have a great critical potential within urban change debates. As Bulkeley and Castán Broto (2013, p.367-8) argue,

(r)ather than creating protected spaces through which innovation can be fostered and system change developed, experiments could provide grist in the urban mill, creating conflict, sparking controversy, offering the basis for contested new regimes of practice.

In other words, urban experiments can be transgressive or controversial, breaking up established regimes rather than feeding them. Becoming more attuned to the geography, the social practices and complex dynamics of grassroots experiments means getting a better understanding of how they may fulfil this critical potential, and indicating ways how they can be encouraged and supported. To get there, we need to move away from the bounded experiments of the socio-technical niche to the extended experiments of the lived city.

Part 2: Experiments

Experiments at the border between knowledge and society

This broader view on experiments in the city requires a deeper engagement with the concept of experimentation itself. The discussions of alternatives, grassroots innovations or urban labs rarely take this up – sometimes the term is taken as synonymous with innovation, at other times as a self-evident process of working with novelty. But given the importance of alternatives for urban change, and the obvious interest in, and relevance of, the term in related fields, a more careful discussion is necessary here. Stepping away from a specific transition or niche approach, I start by looking at the concept of experimentation more generally: what do we mean when we talk about experiments? There has been a long-standing interest in the notion of experimentation as a scientific method and a specific orientation to knowledge production, but its wider relevance is increasingly recognised. Ronnell (2003) for example asks what it is that connects lab culture to experimental theatre, drug experimentation and thought experiments. Or to use Powell and Vasudevan’s (2007, p.1791) words, “what, to put it another way, is the nature of experimental enquiry?” This is the question I want to take up here to
present a more grounded discussion of the experimental dimensions of urban alternatives.

Most fundamentally, an experiment is a practice of knowledge creation, a way of learning about the world. In its general use in the natural sciences, it is understood as "the artificial set-up of an experimental system, the inducement of changes by external control of certain parameters and the measurements of observable effects" (Gross and Krohn 2005, p.64), which is performed and interpreted within specific frames or paradigms of science (Kuhn 1962) and which lies "at the heart of the scientific method" (Jasanoff 2006, p.4). Citing examples from different scientific disciplines, Pickstone (2000, p.12-13) further describes experiments as "putting together elements and controlling them to create new phenomena (or old phenomena in new ways)", thereby enabling "the systematic production of novelty". It is exploratory but may also carry functions of demonstration and verification (Berg 2009). As such, an experiment is a system of interventions and observations aimed at either testing a hypothesis or making new discoveries, in both cases increasing knowledge. It is commonly associated with the laboratory as its proper space, with specialised materials and instruments, and with the scientist as the actor and knowledge producer (Jasanoff 2006). But as the extensive literature on the history of experimentation in science shows, this perception hides a complex assemblage of approaches, materials, politics and social contexts that resists easy definition and suggests experimentation as a much more contingent, more volatile but also richer practice. Drawing on detailed histories of scientific controversies (Shapin and Schaffer 1985), ethnographic engagements with ongoing scientific work (Latour and Woolgar 1986), and cross-discipline reviews (Pickstone 2000), the sociology of scientific knowledge literature has explored the material culture of experimentation, challenging the notion of the controllable, replicable and objective procedure of knowledge production in favour of new contextualisations (Rheinberger 2006). This opens up the practices of experimentation towards contingencies, contradictions and uncertainties: the contestable role of inscription devices (Latour and Woolgar 1986), the fallible construction of arguments through different strategies of validation and discourse (Franklin 1989), and the embeddedness of experiments in wider epistemic systems, such that "[e]xperiments begin and end in a matrix of beliefs" (Galison 1987, p.277). This raises important questions about what it means to engage in experimentation.

Importantly for the present discussion, this opening up of experimentation also leads the practice towards wider questions of politics and society. Rheinberger (2006, p.7) describes the history of experiments as
a history of permanent re-shapings: this concerns the question of experimental set-ups and their development as well as the problem of representational modes (images, texts, etc.) that interact with the shape of experiments.

Experiments are not static, they shift their focus, conduct and presentation over time. They also respond to different contexts that are not limited to the scientific field in question but extend into wider society. Pickstone (2000, p.137, original emphasis) for example argues that many “early modern 'experiments' in the classical sciences were essentially demonstrations”, public reconstructions of phenomena which served to establish analytical facts about the world – for the discernment of a privileged elite. In other cases, experiments fed into the development of instruments that helped to address wider environmental issues, showing a complicated relation between “laboratory studies and investigations on 'the real world'” (ibid, p.154). Latour and Woolgar (1986) further identify the construction of knowledge from laboratory experiments as a fundamentally social practice, in which dynamics of persuasion and competence come into contact with the interpretation of inscriptions to construct scientific facts. Investigating the practices of experimentation in more detail reveals that

solutions to the problem of knowledge are embedded within practical solutions to the problem of social order, and that different practical solutions to the problem of social order encapsulate contrasting practical solutions to the problem of knowledge. (Shapin and Schaffer 1985, p.15)

Experimentation, therefore, stands at the intersection of knowledge and society, as it “draws on and alters broader cultural values [and vice versa]” (Galison 1987, p.62). This casts experiments as complex systems of novelty creation and knowledge-making that are tightly entangled with wider social, cultural and political concerns, and it opens up the possibility of applying experimental thinking to issues outside of the traditional natural sciences.

This extended discussion has been taken up with great interest by human geographers. Following Powell and Vasudevan's (2007, p.1790) call “to deploy ethnographic and historical insight in the development of a geographical sensitivity to the spaces of actual experiments”, geographers have engaged critically with the sites and practices of experimental knowledge production, both through history and in their current configurations (Davies 2010; Last 2012; Vasudevan 2007). But rather than re-evaluating experiments as a purely scientific activity, much of this work has extended the notion of the experiment itself by considering a wider “staging of experimental interventions to generate new knowledge and practices” (Last 2012, p.715). These include new approaches to doing traditional science, such as collective and
participative experiments (Lane et al. 2010; Gross 2010a) or citizen science (Irwin 1995; Bäckstrand 2003), but also more exploratory interventions that cross boundaries and modes of representation and learning. This is where the geographical take on experiments is unique, and holds much promise for wider discussions around urban alternatives. As Davies (2010, p.667) summarises, such wider notions of experimentation have “different temporal-spatial imaginaries, define experimentation through alternative analytical or actors’ categories, and address themselves divergently to epistemological questions about scientific practice or the ontological politics of technical democracy.” Such “‘post-modern' forms of experiment” (Rheinberger 2006, p.4) contrast with the “clear-cut separations between laboratory and society, facts and values, nature and culture” proposed by a modern perspective on experimentation as a scientific method. Echoing Latour’s (1993) observation that we have never been modern, however, this broader outlook is not a new phenomenon: there have always been different ways of doing experiments, involving notions of play, craftsmanship and aesthetic consideration as much as rigorous testing or analysis (Schramm 2006; Dierig 2006). Our understanding of experimentation “emerged in the separated and shared history of science, technology, and the arts” (Rheinberger 2006, p.3, own emphasis), in the intersection between disciplines and their wider social relevance. What is different now is that these extensions are far more pervasive and wide-spread and with greater (or perhaps simply a more widely acknowledged) social and political relevance (see Jasanoff 2006).

This broader understanding has led some commentators to criticise how “almost everything now qualifies as an experiment” (Karvonen and Van Heur 2014, p.383) and to caution “against the adoption of a blithe experimentalism or the casual use of a slack metaphorics” (Powell and Vasudevan 2007, p.1791) that would render the concept of experimentation a mere buzzword (see also Gross and Krohn 2005). Although care is necessary, these openings allow a rethinking of knowledge practices in the contemporary world and a more reflexive understanding of what it means to be engaged in experimentation. Each extended experimental intervention “is necessarily a temporal-spatial one, engaging with the transformation of spatial and temporal description, the framing of possible actions, and the preformatting of subject/object relations” (Davies 2010, p.668). This suggests the need for careful qualitative inquiry into these complex processes to understand how they make an experiment. At the same time, by asking these questions, experiments gain a new relevance in a variety of fields: from bio-technology to flood defences, nature conservation and urban planning (Hinchliffe et al. 2005; Jasanoff 2006; Lane et al. 2010; Lorimer and Driessen 2014). This has led some commentators to talk about the experimental society, or society as a laboratory, in which the boundaries of science and society

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are increasingly blurred and where new modes of knowledge production gain a central standing (Beck 1995; Gross and Krohn 2005). This appreciation of the heterogeneity and pervasiveness of experiments also crucially re-emphasises their political dimension: if the outlines of an experiment are contingent and contestable, and if its practices are social as well as scientific, then the question of what constitutes an experiment becomes irrevocably political (Powell and Vasudevan 2007). This provides both a possibility and a challenge for applying the experimental idea to wider concerns of urban alternatives, and it calls for a full engagement with the various ways in which the concept of experimentation has been extended.

**Breaking the walls of the laboratory and learning to learn from the field**

Perhaps the most fundamental reassessment – which is not surprising given the heavy involvement of geographers, concerns the spaces of experimentation. Traditionally, the spatial focus has been on laboratories as “neutral stages for experiment” (Kohler 2008, p.763). The ideal of the lab is one of placelessness: the physical set-up and routines of the lab “enable scientists to gain exquisite control over the objects of their analysis” (Gieryn 2006, p.5), in conditions that exclude outside variabilities and that should be replicable elsewhere. This abstraction of knowledge from place is the source of its credibility, as it allows an assumption of universality and objectivity, marking “lab-made facts as true not just to their local makers but to everyone, anywhere.” (Kohler 2008, p.766). The assumption of placelessness, however, has been challenged by work on the history, sociology and geography of science (see Latour and Woolgar 1986; Livingstone 2003), which increasingly identified it as a merely symbolic attribute and revealed laboratories “as cultural spaces that actively shaped what went on inside them” (Kohler 2008, p.763). Labs are complex and unique places, made up of instruments, people and non-humans engaged in contingent and often diffuse practices. They are dependent on notions of persuasion and credibility, and they rely on previous knowledge claims that have materialised into apparently non-controversial instruments and apparatuses. Yet each of these dynamics feeds into the work of the lab, and the construction of scientific facts (Latour and Woolgar 1986). They are also economic and political sites that may act variously as factories for economically viable novelties or grounds for mass education (Pickstone 2000; Rheinberger 2006), and which are frequently subjected to the particular agendas and paradigms of the wealthy elites or state institutions associated with them (Kohler 2008). Claims of objectivity and place-independence do not remove these tangles, they only conceal them. This questions the widely accepted foundations of lab-based knowledge statements which flatten the actual and often ingenious practices of these sites, and brings the
question of place back into experimental knowledge-making.

A greater geographical attention to the spaces of knowledge production not only changes the way we think about the laboratory. By allowing the notion of place back into the discussion, other spaces may become the sites of experimental knowledge production, sites that were previously understood as areas of experience, not experiment (Latour 2001). As various geographical and other related examples, including the urban experiments of the previous chapter, show, experiments have long left the space of the lab and now take place in people's homes (Marres 2009), around flood defences (Lane et al. 2010), in conservation areas (Gross 2010b), in huts (Kelly 2012), on bus tours (Davies 2010) and, most importantly for this discussion, in cities (Bulkeley and Castán Broto 2013; Hinchliffe et al. 2005; Karvonen and van Heur 2014). As such, the laboratory now “overspills its traditional constitution, inhabiting diverse informational, technological and political environments, changing the nature of experimental sites and experimental subjects.” (Davies 2010, p.667; see also Latour 2001).

Again, this departure is perhaps not as novel as Davies' comment would suggest. As Vasudevan (2007) shows, there have always been alternative sites of experimentation. In his study of psychiatric practices in interwar Germany, he identifies a number of modernist art experiments that took place outside of the scientific lab but which were not only influenced by the experimental life sciences, but actively reconfigured ‘psychiatric science’ – its epistemic assumptions, its practical arrangements, as a series of critical aesthetic interventions that were themselves tasked with performing scientific experiments with their own alternative regimes of truth. (ibid, p.1814)

These wider settings of “wild experiments” (Lorimer and Driessen 2014) hold interesting possibilities, but also raise some important epistemological questions. If experiments can no longer be understood as placeless, this requires a reassessment of their claims towards knowledge production. Gieryn (2006) explores this relationship of places and knowledge-making through his notion of the truth-spot. A truth-spot is a “delimited geographical location that lends credibility to claims” (ibid, p.29), and which is made up of both the physical stuff of the site and its wider cultural interpretation. Certain places have characteristics that have emerged as supportive of knowledge claims made there, but the way this relationship between place and knowledge manifests itself varies greatly. For labs, it is essentially a case of denial. Labs were seen as epitomes of knowledge-making places: they are physically set up for the testing and creation of knowledge, and they are culturally accepted as authoritative in this practice. But their premise of placeless transferability creates a paradox for modern
experimental culture: knowledge claims always come from somewhere, in fact they rely on the particular properties of their place of production, yet “as they become truth, these claims shed the contingent circumstances of their making” (Gieryn 2002, p.113). The circumstances of the laboratory are not irrelevant background: science, as Latour and Woolgar (1986, p.239) argue, “is entirely fabricated out of circumstance” but it is “precisely through specific localised practices that science appears to escape all circumstance”. The role of the lab, with its place-specific contingencies, is fundamental and yet effectively denied in experiments.

But Gieryn (2002, p.130) also shows other possibilities, which gain greater significance in the context of an extended concept of experimentation. Drawing on historical examples, he argues that place has not always been written out of knowledge accounts. Places of knowledge may be “celebrated” as unique sites of insight, such as the pond and woods that forms the basis of Henry Thoreau’s writings which are rendered persuasive through specific claims to authenticity. This is the notion of the field as a truth-spot, carrying “an idea of unadulterated reality” (Gieryn 2006, p.6) and of knowledge that is found in the world. Sites may also be “on display” - deliberately designed in response to the principles formulated within, and with a clear agenda to convert these abstract ideas into a learning experience for visitors. Here he points to an early 20th-century agricultural research station built as a public demonstration site. Situated between the messiness of the field, and the disciplined lab, Gieryn (2002, p.124) describes it as “demonstrative truth-spot”, relying on “visiting publics who witness knowledge-making first hand in the geographic location and architectural arrangements of spaces that render ideas about science and about nature into tangible, believable forms ready for take-away”. While all knowledge making is an emplaced practice, these latter two cases specifically draw on their place characteristics to support their experimental knowledge claims. It is impossible, as Thrift (2009, p.91) points out, to think about knowledge making “without attending to how the spatial environment has been re-designed: increasingly, they imply each other and the more general project of the construction of a different kind of place”.

This has important consequences for an application of the experimental term in the context of urban alternatives. It emphasises the role of place: to view alternatives as experiments means engaging with their emplacement. This reflects the discussion of grassroots and insurgent alternatives as situated in and constitutive of place, but to explore their experimentality one also needs to ask how this place-making affects their dynamics of learning and knowledge-production. This calls for an engagement with the contested notion of place more generally as a foundation of place-reflexive knowledge claims. Traditional humanist conceptions of place as
organic, bounded sites in which people create meaning through dwelling and attachment are increasingly challenged by more hybrid and mobile configurations that also take into account the differentiated relationships of power and exclusion. Thrift (2009) outlines a revival of interest in place processes, a kind of re-animation of place that is concerned with movement and dynamic fluidity. Places weave together particular social constellations, they are meeting places of relations, part of a wider and open network (Massey 2005). They are therefore recast “not so much as enduring sites but as moments of encounter, not so much as ‘presents’, fixed in space and time, but as variable events” (Amin and Thrift 2002, p.30). This emphasises processes of becoming, of transformation, shifting intersections and outward-facing relations in a wider sense of creating “animated environments” (Thrift 2009, p.91), which embraces “a way of being that is alive and open to a world in continuous birth” (Ingold 2006a, p.9). This has consequences for the role of place in experimentation. Their support for knowledge claims is likely to depend on contested and fluid arrangements, on particular rhythms (Edensor 2010; Lefebvre 2004) and on processes of becoming, rather than some inherent and authentic properties of a location. Experimentation becomes a place-based process that echoes the groundedness of alternatives, but which requires a more serious concern with how this emplacement supports wider knowledge claims.

Distributing agency in experimentation

Closely connected to this question of space is a reassessment of who it is that is involved in experimentation, and how such experiments are conducted. Experiments that are no longer secluded in a lab but take place in various, often mundane spaces, “demand new kinds of responsibility and responsiveness from scientists, politicians, artists and social scientists, as well as citizens” (Davies 2010, p.668). Again, science studies have already broken up the domain of the solitary researcher in the white coat: experiments always take place in a complex set of institutional and personal relations, with administrators, technicians, funders and publishers having a stake alongside scientists while often not being recognised or acknowledged (Barley and Bechky 1994; Galison 1987). But extended experiments cast the net even wider towards different groups that interact in new settings. As Gross (2010b, p.30) points out, “taken out of the laboratory, experimentation implies a setup and a process without a fixed setting of an experimenter”. The definition of experiments is no longer the sole domain of the natural sciences: humanities, social sciences and the wider public are now seen to have a stake here, too (see Beck 1995). Like the extended spaces, this has implications for the way experiments are run and knowledge is produced.
A few examples illustrate the diversity of these new experimenters. Citizen science enlists people not trained as scientists in experiments and the production of knowledge in real life contexts. Rather than only being informed and at the receiving end of scientific findings, non-scientists here are involved in the processes of agenda setting, data collection or dissemination, in often creative ways (Bäckstrand 2003; Irwin 1995). The experiment on alternative flood risk science described by Lane et al. (2010) explored participation through a mixed research group. Here scientists worked with local residents, who not only provided a fact-check for local concerns but whose input directly altered the course of the project through the adoption of an alternative model. In other cases, it is planners, local conservationists and politicians that are engaged in forms of experimental learning through ecological restoration projects. At times, such projects extend their base of experimenters in less deliberate ways, as “experiments in the real world often become part of the public’s everyday life” (Gross 2010b, p.111). Another direction of this extension of actors includes collaborations with artists that challenge how knowledge is learnt and represented (see Last 2012). Artists work with various collaborators and media on experiments of knowing (Battista et al. 2005; Enigbokan 2011) or on representations of complex scientific issues (Scalway and Davies 2012). Davies (2010) uses the example of an artist-led bus tour to explore the fluidity of the boundaries between experimenters and observers, as historians, academics and local residents evaluate their own position in relation to the sites. These diverse constellations create interesting dialogues around the ownership of knowledge, its representation and application.

Involving different kinds of (certified and uncertified) experts in experiments is only one part of this extension in actors. Lane et al. (2010) explicitly acknowledge the event of flooding as playing an active role in their experiment on flood risk management. And there are many others: water voles (Hinchliffe et al. 2005), nature (Gross 2010a), laboratory equipment (Callon et al. 2009), and “domestic things” (Marres 2009, p.122) have all been shown to be part of experiments. This means not just referencing them as the context or subjects of the investigation, but as co-actors that influence the direction and conduct of the experiment. Callon et al. (2009, p.58) describe this through the formation of a research collective, in which “we find a population of human beings cooperating with instruments, materials, and texts” which in turn are linked to a myriad of other collectives. In Hinchliffe et al.’s (2005) cosmopolitical experiment with the ecology of urban wildlife, the emphasis lies on non-human animals: water voles contribute their own “writing action” (ibid, p.647) through the traces they leave on the river banks. As these traces do not fit the standard models of water vole ecology, the possibility of an easy representation of these animals by human actors is denied. In the
politics of this particular brownfield site, the water voles are their own agents and their traces matter in ways that are not obvious or easily bounded. This involvement of non-humans or objects in seemingly social matters is widely under-appreciated. They matter for the course of the experiments, for the plans the ecologists make of the urban brownfield sites or for the description and reporting of personal carbon reduction. They therefore become an equal part of distributed experimental research collectives (Callon et al. 2009).

The appreciation of non-traditional experts, and the increased recognition of the role of non-humans in extended or wild experiments, requires a wider reassessment of how such experiments are set up and performed. These questions are more than procedural, they raise deep issues around agency and knowledge-construction in a complex world. A useful approach here comes from the relational ontologies and material semiotics of actor-network-theory (Latour 1993, 2005) and the subsequent emphasis on hybrid or “post-human” geographies (Castree et al. 2004; Whatmore 2006). What these conceptions do, fundamentally, is question the entrenched modernist dualisms between subject and object, the social and the material, or society and nature, opening up the possibilities to think about both social relations and material things in a different way. This will be helpful for a more open conception of experiments. Traditionally, agency is seen as a uniquely human attribute, dependent exclusively on intentionality. Material semiotics disentangles this relationship by extending meaning-making from language to different kinds of material processes, and by emphasising the importance of hybrid relations. The outcome for agency is that it becomes both decentred from a discrete individual towards a collective, and decoupled from the focus on subjects, which lets “elements enter that, for lack of a better term, we call nonhumans” (Latour 2004a, p.226). This does not mean attributing agency to any object, or creating a new division of human and material agency, as Ingold (2010) cautions. Agency, Whatmore (2007, p.341) writes, “is reconfigured as a relational effect generated by a network of heterogeneous, interacting components”, which are not necessarily all human. Consequently, “an entity counts as an actor if it makes a perceptible difference” (Law and Mol 2008, p.58), if it affects and is affected by other entities. This highlights not only the relations between actors but their enactment, with a particular emphasis on embodied and practised engagements between humans and things as they form collectives in the world. This approach helps appreciate the role of water voles, domestic objects and flood defences in the context of extended experiments.

This wider understanding of actors, both human and non-human, has implications for the process of knowledge-making in experiments, for which we need to consider what Callon et al.
(2009, p.56) describe as the full “research collective”. This is brought out clearly by Hinchliffe et al's (2005) water vole experiments: being open to a wider range of contributors and appreciating their different inputs on their own terms allows for different ways of knowing. It is, as they argue, “the ability to address nonhumans as colleagues in the process of producing knowledge that makes new knowledge possible” (ibid, p.653). By giving them active input, these entities are not just objects to be studied, but subjects in formation. Actively listening to their contributions allows for openings and surprises (Gross 2010b), which put existing knowledge at risk and opens up new avenues. This also suggests a different assessment of grassroots efforts. The extension of actors beyond scientific experts corresponds to the role of civil society and community groups in urban alternatives and bottom-up innovations. But a more relational understanding of agency also asks to consider the nonhuman dimension of these efforts – the role of materials, objects or other living beings. Paying attention to these more-than-human collectives opens up new paths of knowledge-making that cannot be mapped out in advance, but which may help in bringing out the experimental dimension of urban alternative projects.

**Knowledge-making through practice-based negotiation and intervention**

The discussion of the spaces and actors of a spatially extended, collective experimentation, with its emphasis on the role of place and more-than-human elements in substantiating knowledge claims suggests the need to revisit the processes of experimental knowledge making. To be able to produce new insights, experiments require particular procedures and framings: decisions about what (if anything) counts as success or failure, and where (or if) the experiments end (Galison 1987; Davies 2010). It is important to ask not only “how experiments are organised to generate ‘differences’, but also how these differences depend on – and create – systems that recognise and validate outcomes” (Last 2012, p.715). In a Kuhnian (1962) perception of science, this framing would have been provided by scientific paradigms that determine acceptable set-ups, practices and results and therefore provide a system for producing and judging experimental claims. Latour and Woolgar’s (1986) exploration of laboratory science then exposed experimental practices as processes of social construction of facts, which highlighted social influences as crucial. The case is even more diffuse for experiments that extend into all areas of life. As Latour (2001, p.4) claims:

> We are now all embarked in the same collective experiments mixing humans and non-humans together — and no one is in charge. Those experiments made on us, by us, for us have no protocol. No one is explicitly given the
responsibility of monitoring them.

The question therefore becomes what new kinds of 'protocol' exist for these experiments and how we can gain knowledge from them.

In a line of experimentation that is based on the “celebration of characteristics such as novelty or openness or the refutation of experimentation as narrowly instrumental” (Last 2012, p.714), and which includes heterogeneous actors and spaces, knowledge-making too becomes more open and exploratory. In their discussion of the uncertain experiments of open wilds, Hinchliffe et al. (2005, p.653) point to “the ability to listen to the vagueness of the epistemic thing... which is a condition of possibility for new knowledge” in the diffuse and multiple settings of the more-than-human city. Consequently, knowledge-making needs to be understood as “a knowing around rather than a knowledge of” (ibid). Gross (2010b) approaches this by describing knowledge production as an ongoing and adaptive process based on the observation of and reaction to “surprises”, of events that run counter to established expectations. A surprise is “an occurrence that triggers awareness of one's own ignorance” (ibid, p.5), which then leads to a re-assessment and adjustment of the relevant stocks of knowledge, ready for new observations. In scientific experiments these expectations would take the form of hypotheses, but in collective or extended experiments these are often simply the assumptions of everyday life. What is key here is “the fact that a surprise (a new fact) is always an attribution that depends on an observer (judgment/evaluation)” (Gross 2010a, p.70). Otherwise, experimentation as a method of knowledge-production loses its focus and meaning. But these judgements and their observers, do not have to be static: in collective and extended experiments they are the outcome of a constant process of negotiation among actors, and they are continually updated and adjusted following reactive interventions and new observed surprises. This emphasis on an active element is important, as the observation of surprising events necessitates interventions, which in turn form a new set of expectations for future observations. This process mirrors experiential theories of learning, which outline knowledge-making as a circle of observation, abstraction and intervention (see Kolb 1984). Knowledge-making in collective experiments therefore is contextual and adaptive, premised on action and can be described as an “ongoing process of recursive learning” (Gross and Krohn 2005, p.79).

The importance of learning already emerged in the discussions of experiments in the transition literature, which were highlighted as sites of both “learning by doing” and “doing by learning”
Drawing on wider learning theories (see Fiol and Lyles 1985), this literature distinguishes between lower-order or technical learning, and higher-order or conceptual, social learning (Brown et al. 2003; Brown and Vergragt 2008) in real-world experiments. The difference is one of framing. Lower-order learning occurs when an experiment delivers solutions and adaptations for known problems with a clear definitional frame, such as working on a new technological method. Second-order or conceptual learning means re-defining the frames themselves, adjusting values and rules, and working within often ambiguous of ill-defined contexts (Fiol and Lyles 1985). Participants involved in experiments start with their own definitions and approaches to an issue, but as the experiment progresses, they enter an “iterative 'conversation’”(Brown and Vergragt 2008, p.111) in which new interpretive frames are negotiated. This often extends beyond the immediate concern and can create wider “lessons about the alternative socio-cultural values underpinning the [experiment]” (Seyfang and Smith 2007, p.590). These adaptive, recursive modes of learning challenge the idea of knowledge-creation as the production of discrete outcomes that may then be shared and diffused in favour of more processual modes of knowing (see Ibert 2007). This also corresponds to an increasing focus on the critical role of socio-material practices in experiments (see Bulkeley and Castán Broto 2013; Gross 2010b; Marres 2009). As Callon et al. (2009, p.58) point out, what is distributed among experimenters is not only intellectual input but “also and above all embodied know-how, knacks, knowledge crystallized in various materials, and craft skills”. Learning is embedded in the joint practice of the research collective:

The central issue in learning is becoming a practitioner not learning about practice... Learners are acquiring not explicit, formal “expert knowledge”, but an embodied ability to behave as community members. (Brown and Duguid 1991, cited in Pantzar and Shove 2010, p.448)

This echoes the wider interest in practices (Reckwitz 2002; Schatzki 2001), defined in Pantzar and Shove's (2010, p.448-449, original emphasis) terms as “a process involving the active and performative integration of symbolic and material ingredients and of competence or know how”, including bodily and mental activities, material things, emotions, skills and contexts (Reckwitz 2002). The emphasis here lies on their integration as a contingent and temporary achievement: each element has a life of its own, a potential to follow different trajectories and combinations beyond a particular practice. Practices, and combinations of practices, are not stable or fixed, as the links between the elements can break and disappear or recombine in different formations (Pantzar and Shove 2010). This speaks to the adaptive learning within extended experiments. Through the integration of skills, relations and materials, the
experimenters form their expectations, which are adjusted and reordered in response to new observations, methods, actors or challenges.

This focus on adaptive learning and socio-material practice highlights another, often hidden, element of experimentation: the role of the body. Hinchliffe et al. (2005) show this for their 'urban wilds' experiments: as they engage with the specific field site and the water voles, the experimenters acquire new skills, techniques and the ability to recognise traces. In Latour’s (2004b, p.205) words, they “learn to be affected” – they are “bodies in process, gaining ways of looking, a new set of eyes (or newly conditioned retina), a slightly more wary nose, a different sensibility” (Hinchliffe et al. 2005, p.648). Learning in experiments as an uncertain, heterogeneous negotiation of practices requires an openness and adjustment of the body. As Davies (2010, p.669) puts it, extended experiments are “a study in embodied understanding” in which the body “becomes an experimental site itself”. This does not make the body the subject of the experiment, although that may be possible. Rather, it means that experimental knowledge-making is performed through the body, in a process of ongoing exchange, attunement and action. Importantly, this goes beyond the acquisition of particular skills or strengths and includes non- or more-than-representational aspects (Anderson and Harrison 2010; Lorimer 2005; Thrift 2007): the precognitive affective relations between bodies (Pile 2010) and the sense of becoming (Anderson 2006b) that contributes to learning in “open encounters in the realm of practice” (Lorimer 2005, p.84). The body is conceptualised as “sensuous, sensitive, agentive and expressive in relation to the world, knowing and innovating amongst contexts and representations that become refigured in practice” (Crouch 2001, p.62). What emerges here is an experimental learning that is based on experience and an open attention towards ongoing processes in the world (see McCormack 2010).

The publicness and politics of experiments

The role of experiments as processes of knowledge-making invariably takes them into a political arena. There is a fundamental association between knowledge and action, which has political relevance. As Stehr (2001, p.89-90) describes:

One can define knowledge as "the capacity to act," as the potential to "start something going." Thus scientific or technical knowledge is primarily nothing other than the ability to act. The privileged status of scientific and technical knowledge in modern society is derived not from the fact that scientific discoveries are generally considered to be credible, objective, in conformity with reality, or even indisputable, but from the fact that this form of
knowledge, more than any other, incessantly creates new opportunities for action.

This close association and its pervasive role in what has come to be known as knowledge society, raises political questions, as Stehr (ibid, p.92) continues: “if knowledge is the main constitutive characteristic of modern society, then the production, reproduction, distribution and realization of knowledge cannot avoid becoming politicized”. A consideration of knowledge-making in extended experiments therefore requires an engagement with its political dimension. As the previous discussion suggests, active intervention is an integral part of the recursive and adaptive learning process of collective, wild experiments. This challenges the view of scientific knowledge as the foundation, as the pre-cursor to intervention as outlined by Stehr, recasting the fundamental relationship between knowledge with consequences for the politics of an extended experimentation.

Experiments have always been political, both in their agendas and in their public dimension as demonstrations in which audience witnesses added credibility to selected scientific discoveries (Berg 2009; Pickstone 2000; Shapin and Schaffer 1985). But as Stehr’s (2001) comment above suggests, they also have a broader political relevance in society as specific sources of knowledge, which expands with a recognition of wider actors and concerns. By asking who or what is involved in knowledge-making, collective or wild experiments also ask how the political world is constructed. There is a traditional assumption of the separation between science and politics in modern thinking (Latour 1993), in which science is seen to speak for objective facts of nature and politics represent human interests. This is challenged by the ontological upheavals of relational thinking and material semiotics: if reality is multiple and the outcome of different performances (see Mol 1999), then we cannot presume to ever fully know and represent other entities. Or in Jane Bennett’s (2010, p.100) words, “[w]hat, if anything, does the claim that worms and trees and aluminum are participants in an ecosystem say about political participation?”. Consequently, we need to find new ways of including them in political debate as Hinchliffe et al.’s (2005) as well as Lorimer and Driessen's (2014) discussions show. Collective experiments supply one potential forum for this expanded politics. As opposed to the delegative separation of facts and matter in traditional experiments, their approach is dialogical, creating “emergent collectives for generating and deliberating knowledge” (Lorimer and Driessen 2014, p.4). Instead of reigning in multiplicity, they make it an explicit political force, as Davies (2010, p.670) argues:

The political potential of multiplicity is the point; to note, document and
amplify the variability of all events between the readings, challenging the
preformatting of possible actions and generating research in the wild.

Allowing the potential for action to grow through experimental negotiations within a diverse
collective opens up possibilities towards Latour’s (1993, p.144) ambitious claim of a
“parliament of things”, in which there are “no more naked truths, but ... no more naked
citizens, either” but a new way of doing democracy. In practice, this is manifested through
adaptive interventions in the real world as a key part of knowledge-making. As Lane et al.
(2010, p.32) observe for their flood risk experiment, working with a diverse collective entailed
a shift from science as a tool for problem solving and authoritative decision-making to “the
practice of science as a means of making a political intervention”.

Effectively then, collective experiments emerge as sites where an extended set of political
subjects is formed through practice. This opens up a great potential for experiments to act as
public sites of engagement: not just as public demonstration facilities that provide witness-
confirmation for specific claims but as a way to make tangible complex or abstract concepts,
and consequently to facilitate more grounded ways of political participation and citizenship.
This speaks to a wider interest of the mediating role of technology, objects and the material
world in establishing relations of sociality or ethical concern (Bennett 2001; Knorr-Cetina
1997), and the subsequent formation of a materially-based politics (Braun and Whatmore
2010; Marres and Lezaun 2011; Marres 2012). Closely related to the discussion of more-than-
human research collectives above, this emerging view rejects a notion of politics as a primarily
discursive endeavour in favour of an entanglement with the material world. It reveals the role
of diverse material forms in creating what has been called object-centred publics, a politics
that draws on “an appreciation for mundane, everyday, ‘low-tech’ artefacts and their ability to
generate or firm up novel forms of citizenship” (Marres and Lezaun 2011, p.491-492). These
material relations are highly specific in their enrolment or separation of discrete publics, and
they simultaneously emphasise the importance of easy involvement and the effort needed to
sustain relations of engagement. They also work, as Marres and Lezaun argue, along different
trajectories of experimentation as either an orientation or a specific frame of intervention.
The experimentality of public objects “adds to their normative force: the transience,
permeability and ‘liveliness’ of experimental forms facilitate their travel” (ibid, p.503) but it
may also restrict their relevance if they are dependent on particular architectures or designed
contexts. By emphasising the former experimental effect over the latter, extended or wild
experiments therefore suggest themselves as promising forums of material engagement.
Such material notions of participation have been brought to bear on different experimental directions. Drawing on the notion of interactivity, Barry (1998), for example, discusses experiments, mostly in the context of museums, as opportunities for people to directly experience complex issues or methods through sensory experiences, tactile engagement and playful interactions. This casts “the body itself is a source of knowledge” (ibid, p.100), but also sees the active involvement in experimentation a means towards democratic empowerment. While in many cases such interactive exhibits serve as little more than a distraction, there are further possibilities such as Marres’ (2009) home-based green living trials. Here, experiments of ecological living take place within the midst of everyday life. They not only make use of everyday objects and routines, they actively configure them anew as practices of engagement. Against the suggestion for a need for abstraction, participation becomes entangled in mundane socio-material practice, shared through the medium of blogs and websites. Such experiments are tactile and playful; they turn “socio-material entanglement’ into an object of public performance” (ibid, p.125), linking experimental practice with participation and the creation of civic involvements. Marres also points to the pitfalls of such an entangled engagement: the danger of unaccountability, of getting lost in trivia or of reducing civil involvement to individual consumption (see also Dobson 2003). Yet these examples suggest that experiments, if and where they enrol everyday life and its material objects, can open up unique ways of participation.

The suggestion of these discussions is that the political potential of collective real-life experiments emerges from their ‘doing’: from their process of knowledge-making rather than specific outcomes that enable action. As Gross (2010b, p.30) states, “[r]eal-world experiments explore new domains, generate learning through surprise, and in doing so help empower citizens to challenge accepted views”. Except for new domains, they also enrol new actors and practices, which leads to a different “ontological politics” (Mol 1999): a suggestion of a multiple, performed world in which action and agency is embedded in changing and adaptive relation between entities. This holds a myriad of possibilities to be explored in the context of urban, grassroots and alternative experiments, for the formation of alternative political subjects in insurgent spaces and the potential of a more critical urban learning. It also suggests a particular conceptual take on expanded experiments. Rather than a scientific method, or a particular system of intervention, the previous discussions have increasingly indicated collective experiments as relational and practised constructs. Experiments as “a trial or a venture into the unknown” (Gross 2010b, p.4) are therefore most usefully thought of as assemblages, a concept I take up in the final section of this chapter.
Part 3: Assemblages

**Experimental assemblages**

The notion of assemblages and the process of assembling have received significant attention in recent years, in the study of complex systems (Bennett 2004; DeLanda 2006), specific materialities and constructions (Bennett 2005; Edensor 2011) and the wider city (Dovey 2011; Farías 2011; McFarlane 2011a). They also have been brought into conversation specifically with the idea of laboratories (Greenhough 2011), showing how research sites are both anticipated and fabricated from actors, materials and procedures. This makes them a promising tool for the discussion of collective experiments which are understood as contingent, emergent and relational. The growing application of the assemblage approach for the study of cities also builds a useful connection to the urban context here. Yet there is no easy definition of the approach. As Anderson and McFarlane (2011) show, the use of the assemblage idea within Geography is remarkably diverse, and it is grounded in a complex history of relational work. An important foundation is Actor-Network-Theory (Hetherington and Law 2000; Latour 1993, 2005; Law 1992), which uses the metaphor of the network to describe the associations and distributed agencies among heterogeneous entities. Actor-Network-Theory has been criticised, however, as putting too much emphasis on coherence and flattening, with conceptions of relationality “after networks” (Hetherington and Law 2000) further recognising the complexity and incompleteness of relations. Another inspiration comes from work on hybridity (Haraway 1991; Whatmore 2002; see also Greenhough 2011), the more-than-human crossings that shape social and ultimately political life. The term assemblage itself derives from work of Deleuze and Guattari (1987), from their discussion on concepts being “in connection”, of a fixing and binding with a correspondence to notions of event and becoming (see Phillips 2006). From this interwoven history, a malleable notion emerges that brings together particular ways of thinking about, engaging with and describing the world. Assemblages have been taken to fulfil different roles in geographical research, serving in turn as “an idea, an analytic, a descriptive lens or an orientation” (McFarlane 2011c, p.206, see also Anderson and McFarlane 2011). But there are some common traits that make it an interesting way of approaching the complex phenomena of the social world. As I will argue, both as a conceptual guide and an empirical approach, assemblage thinking will be useful for the understanding of extended experiments.
Assemblages as a descriptive lens

For Anderson and McFarlane (2011, p.124), assemblage thinking is a set of approaches which “emphasise emergence, multiplicity and indeterminacy, and [connect] to a wider redefinition of the socio-spatial in terms of the composition of diverse elements into some form of provisional socio-spatial formation”. It is a way of thinking about the composition of the social world in terms of complexity, heterogeneity and openness, which blurs dichotomies and boundaries and questions static descriptions of scales or actors. Put differently, it is “an attempt to describe relationalities of composition—relationalities of near/far and social/material” (McFarlane 2011c, p.206), of the formation of hybrid territories rather than scalar categories (McCann and Ward 2011). Anderson and McFarlane (2011) identify three elements that cut across various interpretations. Assemblage approaches firstly emphasise the process of assembling rather than the resulting formation: they consider how elements come together, bring phenomena into being, and dissolve and change them. Secondly, they understand the elements involved in this formation as diverse and heterogeneous, coming together in temporary and contingent groupings and collectives. This includes all kinds of human and non-human elements, which affects how agency is conceptualised. Finally, the focus on emergence and difference brings out the fragility, cracks and openings in social and material phenomena. While assemblages can describe processes of formation, they also make room for an understanding of surprises and change. These three aspects show interesting conceptual parallels to the dynamics discussed for extended experimentation, which I want to outline in some more detail.

The focus on ongoing formation, on notions of becoming or assembling provides “a way of thinking about phenomena as productivist or practice-based” (Anderson and McFarlane 2011, p.126), which speaks to the importance of practices in collective experiments. This practice angle has been discussed for example in the context of community forest management (Murray Li 2007), where it draws specific attention to “the continuous work of pulling disparate elements together” (ibid, p.264), the effort of even temporarily sustaining the heterogeneous relations among actors. Where practice theory often stresses reproduction and continuity in the process of integrating skills, objects and images, assemblages draw attention “to the labour of assembling and re-assembling sociomaterial practices that are diffuse, tangled and contingent” (Anderson and McFarlane 2011, p.125). Practices are not immutable repetitions, they shift and evolve as they overlap and cross, and their reproduction is always uncertain (see also Pantzar and Shove 2010). Thinking through the practices of assembling also has a useful
application in the context of learning, which I identified as a key process of experimental knowledge making. McFarlane (2011a) specifically considers the notion of “learning assemblages” (in his case, in the city), and he describes learning as a “practice-based distribution” that brings into being complex constellations of “people-sources-knowledges” (ibid, p.15-16). Applying assemblages as a conceptual lens for extended experiments therefore pays full attention to the importance of practices.

Assemblage thinking also echoes the material semiotic view of actors and agency, and the more-than-human collectives I introduced for extended and wild experiments. Agency in assemblages is “distributed across an ontologically heterogeneous field, rather than being a capacity localized in a human body or in a collective produced (only) by human efforts” (Bennett 2010, p.23). All entities of the assemblage have the capacity for agency. This emphasises what Bennett calls “thing-power”, a vitality of the material world that points to “an efficacy of objects in excess of the human meanings, designs, or purposes they express or serve” (ibid, p.20). In this diverse field of entities, agency cannot be reduced to some immutable, essential characteristic. What matters instead are the relational capacities of entities, their potentials for interaction that allow them to become associated with other, potentially quite different elements. This draws on De Landa’s (2006) distinction between properties and capacities. Entities, whether human or non-human, are defined by certain immutable properties, a finite set of attributes the entity has in every context. They also possess capacities, which depend on these properties but cannot be reduced to them, and which describe the entities’ ability to enter into different relations. These relations are the basis of agency in the assemblage. Individual elements have their own agential powers, but their grouping produces new effects – “an agency of the assemblage” (Bennett, 2010, p.24, original emphasis) that exceeds that of the components. Applied to experiments, this suggests not only asking for the agency of the full spectrum of experimental actors. We also need to understand the swirls of relations that constantly form and fall apart, which give the experimental assemblage as a whole agency beyond that of its constituent elements.

Following on from the two previous points, assemblages emphasise the fundamental aim of experiments as an approach that is striving for novelty, new knowledge and surprises. They do not assume any completeness in our description and understanding of the world – the heterogeneous relations in assemblages are complex and indeterminate, as DeLanda’s (2006) description of the multitude of capacities shows. Unlike properties, capacities “form a potentially open list, since there is no way to tell in advance in what way a given entity may
affect or be affected by innumerable other entities” (ibid, p.10). Assemblages are never fully knowable or predictable in their consequences and agencies. They have the capacity to surprise: the relations within an assemblage are subject to constant contestation from various entities, and each new interaction can produce effects for the whole in unexpected ways. As such they are “never fixed blocks but open-ended wholes” (Bennett 2005, p.447) that shift and change. The frame of assemblage thinking is useful in addressing notions of change, emergence and transformation, of “the irruption of the unexpected or unpredictable” in social life (Venn 2006, p.107) – including the capricious and exciting directions of extended experiments. Assemblages leave room for the surprises Gross (2010b) identifies as the drivers in experimental knowledge making, and allow the renegotiation of experimental frames through their malleable relations. They are, as Anderson and Wylie (2009, p.328) put it, “endowed with capacities for innovation and creation” that corresponds to the basic dynamics of experimentality.

**Assemblage as an orientation**

The relational and emergent ontology of assemblage thinking, which I outlined as a useful lens for collective experiments in the previous section, has important epistemological consequences. Given its emphasis on the unpredictability of relations, there should be no expectation that the interactions of entities can ever be exhaustively described, predicted or fitted into a pre-conceived theoretical frame. What assemblage approaches do is suggest a particular way of engaging with social phenomena, calling for “a positive description of their becoming, not external explanations” (Farías 2011, p.369). Instead of resorting to fixed theoretical frames, assemblages offer an orientation towards research that is strongly empirical, and which remains open to exactly what it is that we need to study. Insights about the world emerge directly from grounded inquiry. As Dovey (2011 p.348) puts it, assemblage thinking “resist(s) the temptation to draw the explanatory conclusion before we have entered into the difficulty of things”. This provides not only a conceptual guide but also an approach towards studying collective and 'wild' experimentation.

The value of this approach has been demonstrated most clearly, and debated most intensively, in the context of urban studies (see Farías 2011; McFarlane 2011a), which suits the urban dimension of my interest in experimental alternatives. In an ever more complex urban realm, phenomena and questions are rarely clearly defined or delineated. Processes of fluidity, emergence and splintering challenge traditional structural explanations (see Graham and
Marvin 2001; Sheller and Urry 2006), and the use of pre-formed analytical frames might not always be the most useful. This should not be mistaken as a naïve and uncritical stance in the world, as some commentators have criticised (see Brenner et al. 2011). The open exploration becomes a strength as it engages with the ongoing construction of urban space through processes of depth and potentiality that are central to human life. Such orientations are already visible in earlier work on the ethnography of infrastructure (Graham and Thrift 2007; Star 1999), which addresses the tricky issue of how to study urban materiality and how to answer deceptively simple questions of “[w]hen is an infrastructure finished, and how would we know that?” (Star 1999, p.379). One way is to research infrastructures relationally, engaging with the wide diversity of sites, people, decisions, policies or materials involved in their formation, with purposefully-designed constructions “becoming real infrastructure in relation to organized practices” (ibid, p.380). This requires an “ethnographic sensibility” (ibid, p.382) that mobilises a variety of sources to understand the ongoing production and maintenance of these infrastructures. Assemblage thinking has also been applied to the study of urban policy making, as a way to deal with the simultaneously global and local, fixed and mobile patterns that contribute to policy formation, and to avoid a pre-fixing of explanations on particular spatial scales (McCann and Ward 2011). As an orientation, assemblages here allows an approach to urban issues that eschews structural or scalar explanations in favour of practice-based, multiple and ethnographic engagements.

The open direction of the assemblage approach has particular relevance for an engagement with the relationship between the actual and the possible (Farias 2010a; McFarlane 2011c). Assemblages allow a detailed analysis of how social life is actually formed through materials, people and practices. But it also considers how it can be dis- and re-assembled, and what other, multiple options exist. It “focuses on the disjunctures between the actual and the possible, between how urban inequality is produced and lived and how relations might be assembled otherwise” (McFarlane 2011c, p.210). This brings out interesting parallels to the discussion of urban utopias, in particular those critical or transgressive utopias that seek to construct a different future from existing configurations and efforts. It allows us to trace the practices and imaginations that shuttle “between urban life as it is experienced and life as it could be” (ibid) without having to fix the analysis on either. A related promise comes from the conception of agency in assemblages, which problematises attributions of responsibility. If agency is an attribute of an assemblage, there is no easy way to put responsibility on any particular agent, whether technological, biological or human (Bennett 2005). Assemblages multiply the angles of critique, but also the potential avenues for intervention. They
consequently open up new ways of being political: assemblage thinking encourages a politics that includes “a redefinition of democracy towards participatory practices”, that is “about things, complex entangled objects, socio-material interminglings” and which “is thus attached to new forms of collective experimentation and learning in which multiple forms of knowledge are brought together in new ways” (Farías 2011, p.371-372). This proposes a more diverse, and perhaps more hopeful engagement with the world that escapes the dominance of tales of disenchantment (Bennett 2001) and prevailing neoliberal structures (Gibson-Graham 1996). It also takes up the concerns of alternative urban geographies, the insurgent and DIY urbanisms that emphasise the diversity of existing urban practices and which seek to both de- and re-familiarise, disrupt and reassemble, urban space.

These comments translate well into the study of experiments situated in relation to such insurgent urban alternatives. The approach emphasises the haziness of starting points: although this aspect is often underplayed, much of the task of an urban researcher is to figure out what exactly it is that she needs to investigate given her initial interest. In the complexity of the urban social world “we, urban students, often confront radically uncertain situations in which we don’t know what we are looking for until we find it” (Farías 2011, p.367). A similar argument could be made for the extended experiments discussed above: because of the ongoing negotiation of frames, and the diversity of spaces and actors, it is far from clear where an experiment starts and which dynamics will prove to be most relevant for the possibility of learning. The approach also brings attention towards the exploration of specific “micro-spatialities” (Dovey 2011, p.348) and their ongoing “practices of gathering, composition, alignment, and reuse” (McFarlane 2011d, p.649). Rather than subsuming them in larger-scale explanations, particular spaces in a wider system become relevant on their own terms. Not only is there a surprising richness in the assembling of a space as localised as a church (Edensor 2011) or a house (McFarlane 2011a), but “it is here that one often understands tactics and strategies of power embedded in the morphology of the city and the ways that an assemblage of small-scale adaptations can produce synergistic emergent effects at higher levels” (Dovey 2011, p.348). Assemblage thinking allows small spaces of experimentation to be both deep and relevant in terms of their possibilities and dynamics, as the agency of these assemblages can reach far beyond that implied by its individual entities.

**The possibilities of alternative experimental assemblages**

In McFarlane’s (2011c, p.209) words, urban assemblages outline both “the capacity of events
to disrupt patterns, generate new encounters with people and objects, and invent new connections and ways of inhabiting everyday urban life—and... the potential of urban histories and everyday life to be imagined and put to work differently”. This nicely summarises the aim and hope, and perhaps the promise, of experimental alternatives which I outlined in the first part of this Chapter: to build a better future out of the diverse, already-existing efforts of urban dwellers in insurgent or DIY spaces. Alternative urban efforts come in a myriad of ways, but they are more than sites of negation or resistance. As well as questioning existing configurations, they seek to re-claim urban imaginations by actively building and practising them, thereby constructing the possibility of alternative politics and participation. There are frequent suggestions that these projects are, or should be, experimental, but the alternative urbanism literature does not provide much on what this means. Some considerations of the crossing between experiments and alternatives can be found in the discussion of grassroots innovations and urban laboratories, which outline notions of innovation with local social relevance and the public visibility of experimental interventions. But to trace the wider critical and hopeful potential of alternative experiments, a more in-depth engagement with the notion of experimentation became necessary.

The exploration in the second part of the Chapter revealed the possibilities of experimentation as an open, adaptive and action-orientation way of knowledge-making in different societal contexts. Leaving behind the confines of traditional science and the laboratory, I traced the development of what have variously been called extended, collective, real life or wild conceptions of experimentation. They sketch experiments not as a static method but as engagements of learning in the world that mobilise place, heterogeneous relations and practices as key ingredients of a processual knowledge production, or 'knowing'. They work through the recursive application of observation and intervention as a way to make productive use of surprises in the world. This means understanding experimental protocols as ongoing negotiations. The most useful conceptual approach to such an understanding, I argued, is one of assemblages. As both a lens and an orientation, assemblage thinking allows an investigation of the complex and unfinished mode of real-life experiments, specifically in an urban context. It crucially also picks up on the liminal space between the actual and the possible that drives critical utopias and many alternative efforts.

The suggestion, therefore, is that experimentation can indeed be an important element of alternative urban learning and city making. How exactly this experimentality emerges on the ground, in existing initiatives, is the focus of the empirical part of this work. In the following
Chapter, I outline how I translated this research focus, and the challenges and opportunities of the assemblage approach, into a research methodology. My overall approach here is an affirmative, hopeful one, that seeks insights on the basis of “a more open and explorative form of engagement with the world; in a word, inquiry, not critique” (Farias 2011, p.366).
3 Researching experiments

The aim of this research is to shed light on the cross-over of urban alternatives and experimentation, examining the experimental dimensions of grassroots interventions, and exploring experimentation as a wider method of critical urban learning and innovation. This research interest arose from the ubiquity of the experimental metaphor in an urban context, and from an increased recognition of experimental approaches in creating more diverse alternatives. The literature review in the previous chapter indicated some initial engagements between alternatives and experiments through grassroots innovations and urban laboratories, but it also set out the need for more grounded, empirical and qualitative investigations of experimental alternatives (Bulkeley and Castán Broto 2013; Seyfang and Longhurst 2013). A starting point for this research task comes from an extension of the experimental term in a wider societal context, with assemblage thinking as a useful conceptual approach to their indeterminacy and ongoing negotiation.

Overall, I understand this research as an exploratory effort, an open inquiry into a field that has not received much detailed and grounded attention. Although my work is intended to speak back to the conceptual discussion of collective experimentation, it does not seek to test or confirm any theoretically-derived hypotheses. Instead, it aims to delineate how experimentality forms and affects urban alternative efforts, with an explicit intent to open up avenues for further research. I approach this with an underlying interest in the daily lived performance and practices of urban alternativity and experimentation. This focus is a direct consequence of the conceptual work presented in the previous chapter. Collective experiments, I argued, are formed through the ongoing negotiations of frames, expectations and surprise (Gross 2010b), in other words, through practices which in the context of real-life settings are grounded in the daily life of their participants. To explore the experimental dimensions of urban grassroots alternatives, therefore, means engaging with the enactment of these interventions in the everyday through embodied performances (Harrison 2000), rather than considering only the discourses or policy frameworks under (or against) which they operate. This practice-focus also speaks to the conception of assemblages as the continually produced outcome of affective relationships, where the focus lies on their continuous enactment and practice as much as their networked connections. This chapter outlines how I translated these conceptual lines into empirical research, and how I conducted my study on the
ground. I start with a discussion of the complex relationship between assemblage approaches and case studies in urban research, both of which shaped my research design. I then show the practical dimensions of my work by delineating my methods and engagements with my case sites as part of a qualitative, reflexive research project.

Thinking through case studies from an assemblage perspective

The question that comes with assemblage thinking and its open approach towards the complexity of relations is how to translate this perspective into a workable research design. I approached this through an engagement with the traditional research strategy of the case study, which has been described as uniquely valuable in urban research (Robinson 2011). Bearing in mind that “[a]ll studies are case studies in some regard” (Hoggart et al. 2002, p.203), the aim of a case study design is to make a topic researchable in practice. In Yin’s (2009, p.32) words, the researcher needs to “define a specific, real-life 'case' to represent the abstraction” – in this case, identifying existing urban grassroots experiments from which I could develop the concepts of the literature. In some ways, a case study reflects many of the suggestions of the assemblage approach. Although sometimes described as a method, following Punch (1998) a case study is more a comprehensive strategy for empirical inquiry that seeks to gain knowledge through the in-depth study of particular cases of interest. It “investigates a contemporary phenomenon in depth and within its real life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin 2009, p.18). As such, it has been described as the most promising tool for the study of the complexities in social life, because of its acknowledgement of the role of context, and its mirroring of the human learning process which in its higher levels is always grounded in extensive practical and example-based experience (Flyvbjerg 2004). This makes a case study useful as a practical extension of an assemblage approach: it is strongly empirical and provides the full range of depth and complexity in which relations can be traced to describe and understand a phenomenon.

In another sense, however, a case study methodology seems to be at odds with the relational ontologies that underlie assemblages. Although it acknowledges the wider environment in which it is embedded, a case study does not see context as productive in the same way as assemblage thinking does (McFarlane 2011e). Instead it requires a definition, categorisation, and delineation of cases, and a distinction between what is part of the phenomenon, and what is context (Yin 2009). Some of the literature is rather specific here, describing cases as bounded, closed systems that include objects, people and programmes but not events or
processes (Punch 1998; Stake 1995). This jars with the emerging agency of assemblages, the inclusion of non-human actors and the unpredictability of relations across scales. Borders are rarely clearly evident and the delineation of sites is open to debate as they are “defined not by spatial boundaries or scales, but by types and lines of activity” (Farias 2010a, p.6). The logic of case studies demands a clear demarcation of cases: a careful categorisation and selection to represent critical, paradigmatic, maximum variation or extreme examples of the wider phenomenon of interest in the research design phase (Flyvbjerg 2004). Yet the demands for an open inquiry without prior conceptualisation suggested by the assemblage perspective clearly questions the possibility of doing so. An assignment of categories and boundaries before an engagement with their practices would be premature. This is not only a matter of remaining open towards changes in the analytical focus of the case study (see Yin 2009): it is a question of re-thinking our basic approach to methodology, and its intersection with both ontology and the practical performance of research. This is the point made by John Law (2004) in his account of research “[a]fter method”. The central idea of this supremely insightful work is that research strategies and methods are not just reflective but productive, as “methods, their rules, and even more methods' practices, not only describe but also help to produce the reality that they understand” (ibid, p.5, original emphasis). There is a direct link between ontology, method and research practice, and consequently the researcher would not so much choose cases from a pre-existing list as bring them into being through her interest and engagement with them.

In practice, I navigated these tensions by focusing on a different conception of case study work, one that does not rely on overly reductive causal assumptions and “parochial theory-driven hypotheses” (Robinson 2011, p.13) in the identification of cases. As Stake (1995, p.4), puts it, “[t]he first criterion [of case selection] should be to maximise what we can learn”. Introducing a focus on learning allows a more careful understanding of research as an ongoing, emerging but also necessarily incomplete interaction between researcher and environment. It aligns the production of knowledge with the process of learning the researcher undergoes – all the uncertain, indeterminate and fallible steps she takes in her research performance. The outcome is not a complete piece of knowledge that represents a particular case in the world, but a contingent learning assemblage consisting of one of many possible arrangements of researcher, topic, results, written thesis and all the activities between them. Taking a learning-based approach to the selection of case studies responds to a key concern raised by Law’s relational ontology. He rejects the notion of an independent, external world that can be known and defined in favour of a relationally constructed understanding, one which comes into being because of our situated engagement with it and in which events and processes “necessarily
exceed our capacity to know them” (Law 2004, p.6, original emphasis). This does not negate the importance of research and knowledge-making but it questions our understanding of how this should be conducted. Law introduces research as a method assemblage, as the “crafting of a bundle of ramifying relations that generates presence, manifest absence and Otherness” (ibid, p.42). This points to the ongoing work required for dealing with incompleteness, indeterminacy and multiplicity. But it also emphasises its affirmative and productive nature, which closely resembles underlying ideas of learning as an ongoing process of adaptation and relation-making in the world (see Kolb 1984). Additionally, this focus on learning reflects the substantive concern of this study of knowledge-making in urban experiments, aligning my interest in the world with my way of engaging with it.

Learning from urban case studies

To develop an in-depth understanding of the experimental dimensions of urban alternatives and their wider role in urban learning, I chose to adopt a multiple case study approach, in which several cases jointly contribute to the description, analysis and understanding of a general phenomenon (Creswell 2007; Silverman 2005; Stake 1995). This takes some inspiration from recent calls to think relationally across urban phenomena and cities (Robinson 2011; Ward 2009). To be clear, I do not think of my case studies as comparative in the sense of strictly applying a joint explanatory model to two or more sets of data. My aim is also not to facilitate comparison between the experimental potential of different cities or to trace their joint experimental histories – although work in this direction will be extremely valuable in the future. But my choice of several sites in different urban contexts provides a way for insights to interrogate and speak to each other, similar to relational comparative work that “moves us away from searching for similarities and differences between two mutually exclusive contexts and instead... uses different cities to pose questions of one another” (Ward 2009, p.480). Working with more than one case in great descriptive depth also responds to the need to search out multiple causalities and flexible explanations in urban studies. Engaging in case study research “on an individualizing-comparison basis”, Robinson (2011, p.18) argues, can provide “[n]uanced, complex and contextual accounts of urban processes [that] are not necessarily unanalytical — they are simply differently so from a more narrowly focused, even reductionist form of explanation”. They acknowledge the role of the diverse agentic relationships within an urban assemblage and therefore allow a more open, multiple and complex view of the world.
The focus on learning guided the selection of my case studies among urban alternative projects. Drawing on the discussions of the insurgent urbanism literature (Crawford 2011; Holston 1998; Hou 2010; Iveson 2013), I defined alternatives as bottom-up driven initiatives that make a substantive and affirmative intervention in the city, which explicitly disturb existing patterns, and which are concerned with the creation of alternative options for mundane aspects of urban life. In practice, this meant a focus on longer term projects that actively practise alternative ways of living, working and being in the city with an underlying commitment to decommodification. I specifically discounted efforts that had been going for less than two years, as initial engagements with an urban farming project and a social centre in the UK revealed the difficulties of working with newly established efforts, where outcomes and wider trajectories are not yet visible. My consideration then was whether these efforts showed an engagement with the idea of experimentation. I approached this by focusing on projects that had adopted or had been given the label of an 'experiment', and who actively used this term in their self-description and public materials. This was no judgement about their practice of this experimental claim, but it opened up possibilities of reflection on the term. Additionally, I placed an emphasis on initiatives that attracted wider attention – academically, through publications, or in relevant networks, to underpin their relevance as substantive and well-established projects. I used this attention as a marker for the potential for learning from these sites: if the sites featured in summer schools, exhibitions, research programmes as well as being the destination for activists visits, I should be able to gain insights, too.

For the scoping, I drew on desk-based searches as well as networks amongst academics, activists and social entrepreneurs. Initially this was focused on Manchester and London, and it included conversations with local housing activists and urban farmers as well as attending regular meetings (such as the Urban Gardening Group Manchester) and events (such as CityCamp and Envirolution). I had intended to work within a UK context, for both convenience reasons and the possibility of a more detailed engagement with a specific urban policy context. My discussion with these practitioners however increasingly revealed the value of an international perspective. Many talked with great enthusiasm about projects abroad that they had visited, and how these had shaped their outlook. It became clear that there was a lively international exchange taking place, and that certain initiatives were not only recognised as experiments but as international reference points. I therefore refined my scoping criteria by emphasising international attention, and I broadened my search beyond the UK towards Germany and Spain, a choice dictated both by my language skills and existing contacts in Berlin and Barcelona. This made the web presence of the initiatives more of a key factor, as I used
websites as an initial point of information, drawing in particular on the projects' self-descriptions. Given my interest in their public dimensions and their sharing of ideas, this reliance on digital information for the scoping appeared justified. These developments also show research design as an iterative and evolving process that shapes research questions as it goes along (Hoggart et al. 2002). Rather than seeking out comparable examples situated in a similar UK contexts but perhaps settling for less established or well-known projects, I decided to focus on the interesting international cases I was increasingly being pointed to. As a consequence of this broader selection, I had to adjust my research focus, limiting my exploration of the policy structures in favour of a greater focus on how experimentality arises within the sites. I have been slightly uneasy about this restriction ever since, as I now think a wider exploration of the relations of these experiments in their specific contexts could have added much to my project. It certainly suggests further avenues for investigation, and it demonstrates “the ‘surprises’ which emerge when deduction and induction, data and theory, collide, by accident and design” (Crang and Cook 2007, p.17).

Moving from this open scoping towards a selection of cases, of placing the research on the ground, is not a matter of going through a list of pre-identified possibilities, getting a response and crossing them off one by one. Instead, it is an ongoing tangle of conversations, false hope and exciting developments. I contacted eleven different initiatives in the UK, Germany and Spain, outlining my project in an initial information sheet (for a summary of the initiatives, see the overview in Table 3.1). Most discussions then took place in direct email and phone exchanges with project initiators or public contacts, in a process of jointly working out an involvement. Here, I was guided by another key aspect of maximum learning from a case (Stake 1995): the pragmatic considerations around accessibility and support for the research by participants or institutions, something that is little explored in research design textbooks but recognised in literature on ethnography (Hoggart et al. 2002; Kawulich 2010). This aspect of support was particularly important as my practice-focused research would involve an intensive engagement with the sites, either living or working there. I was keen to establish some form of exchange with the projects: not only because I felt it necessary to 'give something back' but because I expected that an exchange based on reciprocal interest would give me much greater insights and possibilities for learning. The key factor that determined the cases in the end, therefore, was their interest in my research.
Table 3.1: Overview of projects considered as possible case studies

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<tr>
<th>Type of initiative</th>
<th>Locations</th>
<th>Interesting features</th>
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| Urban gardens (3 projects)      | Berlin and Hamburg, Germany
                                 | Diverse goals and pre-occupations beyond community gardening aspect                  |
                                 | London, UK                 | Direct involvement with urban questions                                              |
                                 |                            | Interest in material and DIY experimentation                                         |
                                 |                            | Some interesting organisational systems                                              |
| Urban farms (2 projects)        | London and Manchester, UK  | Permaculture and systems thinking                                                    |
                                 |                            | Explicit interest in experimental technology and business models                     |
| Alternative trailer colonies (2 projects) | Berlin and Freiburg, Germany | Direct involvement with urban questions, especially through cultural projects       |
                                 |                            | Long established histories                                                           |
                                 |                            | Experimental social and infrastructural arrangements                                 |
| Semi-urban eco colonies (2 projects) | Barcelona, Spain
                                 | Holistic experimental approaches to alternative living                              |
                                 | Brandenburg, Germany       | Established visitor programmes                                                      |
| Alternative technology centre  | Andalusia, Spain
                                 | Explicit focus on experimental technology and volunteering                           |
                                 | (not an urban project)      | Long established history                                                            |
| Eco squat                       | Barcelona, Spain           | Holistic experimental approaches to alternative living                              |
                                 |                            | Established visitor programmes                                                      |

The selection therefore needs to be understood as a process that cannot be reduced to simple criteria but that is performative and in itself relational. As Curtis et al. (2000) show, case study selection in qualitative work is not only guided by research criteria, but is a rolling, sequential process involving conflicting demands. Reviewing the case selection of a research project on therapeutic landscapes, they describe the process as “an evolutionary one” (ibid, p.1005), detailing how the researcher moved from a conceptual framework towards requirements of lasting reputation and accessibility based on personal conversations, with the final choices resulting from “various combinations of influences” (ibid, p. 1006). This vagueness may seem somewhat unsatisfactory, but it emphasises research work as a performance and avoids post-hoc rationalisations. In my case, the requirements of established alternative projects with a claim towards experimentation and an international reputation became entangled with direct conversations and practical matters of exchange and involvement. I subsequently rejected the two eco trailer sites as lacking a clear experimental commitment, as well as the alternative technology centre as it no longer fit with my increasing interest in the urban dimension of these efforts. One urban farm working with permaculture ideas and integrated systems...
remained a very promising option for a long time. But a lack of understanding between the project founder and myself regarding my role and participation eventually made me decide against it, as there seemed to be too many possibilities for conflict. Other initial exchanges led to dead ends with change-overs in the people involved and a breaking off of interest.

Two projects, however, emerged as both interesting and accessible cases from these negotiations. I had been pointed to Can Masdeu, a well-established eco-squat in Barcelona independently by an academic from the UK, a researcher based in Barcelona and a local Manchester-based sustainable food activist. Although it lay slightly outside of the main city area, it emphasised its urban connections, and the community had established an alternative to mainstream urban life in what it called a laboratory (Can Masdeu 2014). An acquaintance introduced me to a resident, who was extremely helpful in preparing my stay: presenting my research to the house, officially 'inviting' me for two weeks as part of the rather strict visitor procedures, and answering my initial questions – as well as brokering a deal for me to supply Marmite for the house. I had an even more extensive initial exchange with the gardeners of the Prinzessinnengarten in Berlin, a project I found through their strong media presence and a subsequent scouting visit of several gardening initiatives in Berlin. They were immediately interested in my topic and thought it would be a good fit for their current concerns, but after having had too many one-sided experiences with researchers they wanted to negotiate my involvement and my contribution to the garden more clearly. Eventually we agreed on a role as volunteer with an emphasis on helping out with and evaluating different learning offers over a period of two months. This helped in establishing clear expectations, but it also gave me a valuable assurance of their support.

My third case, the autonomous town of Christiania in Copenhagen, came into my research a little differently: I had come across Christiania as a well-known experiment with a long history, but I had not initially considered it suitable for my research because of its scale and diversity, and a lack of ways of direct involvement. Then, in early 2012, I received a call for application for the Christiania Researcher in Residence Programme, which hosts artists and researchers in the Freetown for up to four weeks. The CRIR mission statement clearly outlined both its experimental dimension, and its interest in research (CRIR 2014):

Christiania as a so-called “social experiment” contains a huge undefined potential research area, that needs to be documented, communicated and understood. The evaluations, conclusions, knowledge and learning that have not yet been drawn from this experiment and its 33 years of interaction with surrounding society, can and should be documented. Insights and experience
gained from experiments into organisation, housing and living models, democratic processes and structures, normalisation and innovation can – both in Christiania as well as in public and private contexts – become a source for important reflection and innovation.

I applied with my research proposal and was accepted last minute. This was a unique opportunity that I did not want to pass over, but the dates I was offered shortened my stay in Can Masdeu to eight days as Can Masdeu only takes visitors during specific time periods. In some ways, therefore, Christiania became an accidental case study that I had to adjust to and include in my planning on short notice. There is little point discussing whether a focus on only two sites, for a longer period, without the complexity of Christiania, would have improved my research. My aim was to facilitate learning through an engagement with these case studies – and dealing with the unpredictability of research is part of this ongoing process.

The ongoing negotiation of learning: doing research

Focusing on the possibilities for learning feeds into the ongoing negotiation and production of the 'cases' that I pointed to before: it means following different possibilities for rich insights and sketching out the boundaries of the case not through theoretical considerations but the empirical research practice. This leads to the question of methods – the practical dimension of my research engagement. I worked with a set of intensive methods (Hoggart et al. 2002); what may be termed an ethnographic, or perhaps ethnographically-inspired, approach. For Crang and Cook (2007, p.35, original emphasis) ethnographic work is not restricted to long-term embedded research in a local culture but can be defined simply “as participant observation plus any other appropriate method (...) if they are appropriate for the topic.” Ethnographic approaches have been identified as appropriate for relational research. As Nimmo (2011, p.113) argues, both actor-network-theory and ethnography

eschew neat analytic categories in favour of a sensitivity to messiness, contingency and non-coherence; both acknowledge the heterogeneity of practices and their interweaving of the social and the material; both are broadly inductive and place an emphasis on the detailed description of what takes place 'on the ground'.

Similar considerations apply to the assemblage perspective, as “a mode of inquiry that remains close to practices, whether through ethnography or careful technical analysis” (Collier and Ong 2005, p.4). This engagement with ethnographic approaches is one outcome of the difficult relationship between relational thinking and methods. Despite a clear commitment towards
empiricism as equal to theoretical considerations, there is little discussion of specific methods, of how to conduct research, in assemblage or actor-network-theory (McCann 2011). As Law (2004, p.4) shows, traditional research methods in general are “badly adapted to the study of the ephemeral, the indefinite and the irregular” in social life. This is an issue not so much of the choice or practice of specific methods but what we expect these methods to do, such as providing a complete representation of the world out-there. If we understand the world as complex and indeterminate, methods need to be thought about in a “broader, looser, more generous way” (ibid).

This questioning of the fundamental nature and tools of knowledge-making reflects an analogous methodological discussion in human geography (Crang 2002, 2003, 2005; Davies and Dwyer 2007a, 2007b, 2009; Latham 2003), which particularly concerns the overbearing focus on meaning and text within qualitative research (see reports by Crang 2003; Davies and Dwyer 2007b). These debates do not reject traditional qualitative methods, but they suggest “changes in the way they are being conceived and carried out, and related to this there are transformations in the way these methods are being used to make claims to understanding and intervening in the world” (Davies and Dwyer 2007b, p.257). This includes a greater focus on affective registers, multiple senses and the role of materials (Crang 2003; Hurdley and Dicks 2011; Pink 2009), and on an open engagement with the world that seeks to “describe and present rather than diagnose and represent” (Cadman 2009, p.461). There is also an increasing rejection of methodology as a “menu of abstract concepts and methods to be learned and then applied” (Crang and Cook 2007, p.1), with a more integrated understanding of how different methods shape the reality of research and our role within it. This includes the important issue of reflexivity, a “turning back on oneself, a process of self-reference” (Davies 1999, p.4). At times, reflexivity has led to a new kind of researcher elitism based on intensive introspection and colourful writing styles that hide, rather than highlight, positions and structures of power in knowledge-making (Crang 2005). But where these reflections on the researcher’s individual position in the research setting are combined with collective questions about how knowledge claims are constructed, this creates the basis for a richer, more critical social science (Davies 1999), one that is “better equipped to deal with mess, confusion and relative disorder” (Law 2004, p.2).

With these considerations in mind, I developed a multi-layered ethnographic methodology of participant observation, open interviews and the use of documentary photographs. These methods foreground a close research interaction, they “engage with, rather than withdraw
from, this 'real world' messiness” (Crang and Cook 2007, p.14) by working with the lived experiences surrounding a complex phenomenon. This choice of methods took inspiration from those used in existing studies of everyday life in alternative projects and the city. As Holston (1998, p.54) puts it for his work with insurgent spaces, “[i]n terms of methods, I mean to emphasize those of an urban ethnographer – or of a detective, which are similar: methods of tracing, observing, decoding, and tagging”. This ethnography often implies a combination of interviews and participant observation focused on one or more case sites as “a multimethod case study with a strong ethnographic core” (Longhurst 2013, p.2103; see also Pickerill and Maxey 2009b; Wallbridge 2011). These methods are not experimental in themselves, but they respond to the call for the “merging of existing methods with new influences” (Last 2012, p.715), in this case with the requirements of a research focused on relational practices. A key part of this concerns the symmetry between human and non-humans elements that assemblage thinking proposes and which I outlined in the previous chapter. There is a current interest in the material dimensions of social, cultural and urban geography (Anderson and Tolia-Kelly 2004; Jackson 2000; Lees 2002; Whatmore 2006), with calls to assess the specific temporalities and spatialities of materials and to “develop more complicated configurations of ‘the material’ and ‘the cultural’” (Anderson and Tolia-Kelly 2004, p.670). The assemblage discussion takes this even further: instead of just speaking for and writing about non-human entities, the actor symmetry challenges researchers to hand over “at least some of the writing action to... other characters in this story” (Hinchliffe et al. 2005, p.647). Like the emphasis on complexity and surprise within assemblages, this needs to be taken up by existing methods, allowing material agents to play their own role. Although I made attempts at allowing this non-human dimension to emerge, by photographically documenting material transformations and movements, or recording the sounds of working practices and the sites as well as my interviewees, I struggled with these demands. In retrospect, this is an aspect of my methodology that would have needed some more development.

In practice, these considerations of ethnographic approaches, reflexivity and knowledge making meant that I spent an intensive period of time with each of my three case study projects, directly engaging with their life and work. My aim was to gain insights into their experimentality through observing, taking part in and talking about practices of making, problem-solving and sharing in the sites. Because of the differences in the sites – an eco-squat community, an autonomous town and an urban garden – my position varied in each. In Can Masdeu, I was an ‘invitada’, an invited guest, staying in the visitors' room in the main building with a lot of freedom to decide my own involvement in the house. In the Prinzessinnengarten,
which is not a space in which people live, my involvement was similar to that of the long-term
volunteers and interns. I spent almost every day in the garden, without a specific area of
responsibility but helping with different jobs as needed – at one point almost becoming
something like a research coordinator. In Christiania, although I lived in the autonomous town
which is not normally possible for visitors, I was not part of any activity or daily routine. I was
very clearly positioned as a researcher and I spent far more time making contacts, following
recommendations and getting a more general sense of the place. While giving me different
starting points, each of these involvements provided unique opportunities for learning. As is
common with such intensive, ethnographic approaches, my focal points emerged through my
ongoing exploration and interpretation while working, living and talking to people in the sites.
As Katy Bennett (2002, p.141) points out, the “hunches” of ethnographic work are “not about
proving or disproving hypotheses or tunnel visioned objectives, but are theoretically motivated
issues with which the researcher plans to engage whilst doing her fieldwork”. These hunches
are not “smooth and neat, but open to surprises, change and even transformation through the
progression of the fieldwork.” I outline these dynamics of progression in the detailed
discussion of my research engagements below.

Holding a shovel and wondering why you are there: participant observation

Participant observation formed the core of my research methods. It puts a focus on doing – of
both everyday life and of research itself (Hoggart et al. 2002), as “a means of developing
intersubjective understandings between researcher and researched” (Crang and Cook 2007,
p.37, original emphasis) in which the participant and observational elements of this method
cannot be separated. By taking part in the situations under study, the researcher is able to
develop an understanding of different dimensions of socio-material practices and rhythms,
through the “description of and reflection upon embodied and emotional experiences,
intersubjective and material exchanges and social and non-human interactions” (Watson and
Till 2010, p.126). The focus of my participant observation was tied to my interest in everyday
practices – in understanding how alternative experiments come to be assembled through
doing, through the everyday enactment of routines and patterns. This included a focus on their
material and more-than-human aspects but also their emotional and affective dimensions –
the capacities that flow between human and non-human bodies, and their expression within
the practice (Pile 2010). I found such moments when observing, and at times experiencing, the
joys and frustrations of communal life, the physical challenges of hard work, the slow learning
of rhythms and flows. The value of such insights are recognised by recent developments in
non-representational theory which “apprehends the world less as a series of sites from which to extract representational meaning, but as a field of processes and practices through which the ethical sensibilities of thinking may emerge” (McCormack 2003, p.489). This helped me to construct a richer picture of the assemblage relationships that form in these urban alternatives.

My particular engagement as a participant researcher varied for each of my three case studies, in line with my distinctive position in each. In Can Masdeu, I joined the everyday communal activities – cooking, joint meals, house cleaning or gardening, as every visitor is encouraged to do. I also took up more specific jobs and tasks – helping out with the social day, baking bread, tiling the roof of a new outhouse. This was a genuine way of lending a hand where I could, as well as a more conscious decision about being part of activities involving some of the more unusual features of the house, such DIY building or hand-making bread in a wood-fired brick oven. As the first station of my research, it was very much a learning process for me in terms of how to be an ethnographer, which required an attunement of my own body and perceptions – getting into the habit of note-taking, learning to describe textures and smells as much as visible cues, and managing my own energy. In the Prinzessinnengarten, I similarly spent a lot of time helping out with the daily tasks of running the shop, supporting the garden working day or guided group visits and attending working group meetings. I would pick up general gardening tasks from the work list whenever I had the time to do so and felt that I could complete the tasks – re-potting young plants and watering were the most frequent. Here too I volunteered for other jobs that seemed interesting: dismantling a structure for spare materials, building compost worm boxes, helping with the set up of the irrigation system. Because of my slightly different position in Christiania, my participant observation here was perhaps less clearly defined. I spent much of my time simply being there, talking to residents and visitors in the cafes and following invitations as they came along: to join the winter swimming club, meditation, the sauna, and to help or accompany people in their building projects. At the end of the day, I would return to my separate house without any commitment towards the daily ongoings. Overall, I fundamentally remained a visitor in Can Masdeu and Christiania but started to build up a more complex role as a volunteer as well as researcher in the Prinzessinnengarten.

Participant observation is more than just ‘joining in’, however. It requires the careful recording, reflection and interpretation of what is observed and experienced (see discussions in Watson and Till 2010 and Crang and Cook 2007; and geographical methods handbooks such as
Flowerdew and Martin 2005; Shurmer-Smith 2002). I recorded my observations in extensive field notes, usually starting with a summary of my activities of the day, followed by specific descriptions of tasks and interactions, and wider observations and thoughts, occasionally using the checklist presented by Crang and Cook (2007 p.52ff.) as a reminder when I got too caught up in my own musings. The bulk of this was written on my laptop during free time or in the evenings, based on comments jotted down in my note book during the days. These entries reveal a lot about my emotional experience, with some episodes told in exuberant terms full of exclamation marks and others beset by insecurity and self-doubt. They also show a learning process, with clearer, more insightful descriptions and re-tellings replacing more introspective entries as the research unfolded. I also took over 1,000 images on my camera. I do not consider them a separate visual methodology (Pink 2009; Rose 2007), but part of my participant observation. Yet I am aware that even in a mostly illustrative use they “are never without any analytical import” (Hammersley and Atkinson 1995, p.189). Mostly, the photographs of my research “usefully complement the writing of field notes” as they remind the researcher “of what was initially strange but then became familiar” (Crang and Cook 2007, p.106). Similar to my field notes, they are therefore a subjective and selective capturing of particular moments or structures, with the act of taking the image affecting what is recorded (see Rose 2007). Apart from their value as a field record, I also used them to emphasise particular aspects of materiality, by detailed studies of particular infrastructures or work processes (for an example, see Figure 3.1 below). At other times, photographs became part of my social engagement – especially in the Prinzessinnengarten I was often asked to document particular events or activities and to share my pictures. The process of taking pictures opened possibilities for engagement, as I could spend a long period of time observing activities without awkwardness. But the limitations and inherently relational dynamic of photography became clear in several instances of people asking me not to take pictures or stepping out of the frame even after they had given their consent. One experience with taking pictures of a building site in Christiania illustrates this:

Had some issues around photographs again – of course I had asked Eddie, but then a neighbour came saying something like 'Who is she? Do you know her?' to him. Eddie said that I'm an acquaintance and that it's fine. The other guy kept glaring at me, saying something about tourists coming down here to take pictures of everything – 'like we are animals in a fucking zoo'. (research diary Christiania, 16 March 2012)

Both my note- and image-taking therefore emerges as an active research engagement that shows the short-comings of a participation-observation divide.
Participant observation is a research engagement that is based on practice, on an enactment of 
shifting and often ill-defined relations between researcher and world, and actually conducting 
participant observation is often far from straightforward. At one point I expressed my 
frustration at not being able to take pictures of our clay oven construction process in the 
garden because I was part of it and my hands were constantly muddy:

That is the problem of being a participant researcher. How do you decide 
whether to take part of take pictures – because you cannot take pictures with 
muddy hands, and you have to stop what you’re doing, and then re-starting. 
(research diary Prinzessinnengarten, 22 June 2012)

Although I did not see it as such at the time, these moments of conflict, of having to deal with 
obstinate material objects in the research such as a camera, a notebook and pen, actually have 
their role too as a physical action. Recounting their own fieldwork experiences, Watson and Till 
(2010, p.126) write:

For Karen, the physicality of writing notes and taking photographs is an 
important part of her research practice: it slows her down. Photography in 
particular requires bracketing and framing choices that make her pay attention
to the processes of saturation and duration, as well as the particulars of things at a precise moment.

This is an example where the rhythm of my research crossed with those of the site, highlighting my involvement in the world I was researching and making my interpretation an outcome of both. These cross-cutting rhythms also include the simple exhaustion that comes with participant observation field work, which affected not only the quality of my notes but necessarily influenced my attention and interpretation of situations: “I’m super tired, too – it is hard to write now. I had a mega active day, helping with the house working day” (research diary Can Masdeu, 6 March 2012.) Participant observation research consists of a continuous series of choices one has to make about involvement: Should I be helping? Watching? Taking pictures? And what should I join in with? This kind of method, as Moeran (2007, p.16) states, puts the researcher into “a series of processual social situations, in which all kinds of unexpected and unplanned events occur”, obliging her to “make innumerable small decisions at every twist and turn”. This constant need for decisions can become a source of doubt, as I expressed it far less eloquently in my notes at one point: “I’m a terrible ethnographer. I just keep doing what I want, thinking it’s work because I’m doing it” (research diary Can Masdeu, 7 March 2012).

We’re just having a chat: conversational interviews

The insights I gained through observing and participating in the daily work and life of the projects are framed by the conversations and interviews I conducted with residents, volunteers and visitors. In-depth qualitative interviews have been described as purposive conversations, an “inter-change of views between two persons conversing about a mutual theme of interest” (Kvale and Brinkmann 2009, p.2). They allow the researcher to “understand complex or little-known issues” (Hoggart et al. 2002, p.208-209), in particular the lived experience of performed practices, and the subjective meanings people attach to them. This draws on a phenomenological perspective of the world, which seeks to understand social phenomena from actors’ own viewpoints and describes them as experienced by subjects (Kvale and Brinkmann 2009). Qualitative interviews are certainly one of those methods considered “pedestrian” (Nigel Thrift in Farias 2010b, p.111) by some in the context of non-representational engagements with the world, as they are generally associated with representation and meaning. But this does not make them useless for the study of practices, as Hitchings (2012) shows – people are very much able to comment on how they perform practices of everyday life, and can critically reflect on their experiences. By getting detailed personal stories
of work and construction, encouraging reflection on their experiences of creativity and learning, and by discussing the social structures and ideas that shape work and life in the sites, the interviews therefore helped me to piece together the relations that shape the alternative efforts and their experimentality. As such, they are as much part of my participant observation as a separate method. As is common within ethnographic approaches, my interviews took the shape of largely unstructured conversations gathered around a number of themes or interests, as the researcher “tend[s] to direct the conversation with the research in mind, without imposing much structure on the interaction” (Davies 1999, p.94; see also Crang and Cook 2007; Valentine 2005). Depending on the case projects and the situation, these conversations took more or less directed forms, changing focus and style in response to the context or previous interactions (Hammersley and Atkinson 1995). They should therefore be understood as discrete and individual research engagements, rather than a set of comparable semi-structured exchanges.

In total, I conducted 30 audio-recorded interviews, lasting between half an hour and two hours, with either one or two participants (for a list of interviews, see Appendix 2). Five other interview conversations were recorded in note form – in one case due to the request of the participant not to be recorded, in the other cases because of the work we were carrying out at the time or the situation of our interaction, such as a more focused conversation arising spontaneously, which emphasises the fluidity of methods in an ethnographic approach. My choice of who to interview came from a mix of considerations: in Can Masdeu, it very much followed on from who I was meeting in the house and who I spent time with either working or socialising, as these prior encounters gave me the basis for my more informal interview-conversations. As the communal and shared conduct of different tasks and projects is an important aspects of the house’s life, I judged this somewhat serendipitous approach to be sufficient. An additional consideration was whether the person was willing to have a conversation in English or German, as I did not feel confident in conducting an interview in Spanish. This was mostly unproblematic as there were a large number of international or English-speaking residents, although it did prevent me from at least one potentially valuable talk. In Christiania, it was a mix of targeted recruitment, based on recommendations from other residents and my initial contacts, and chance encounters or observations that determined my interview partners. Most people spoke excellent English, so the language was not a barrier here. In the Prinzessinnengarten, the choice of conversation partners depended on their level of involvement in the garden or their role in particular projects. Here, I conducted the conversations in German. The focus of each of these conversations depended on the
participant's role but also on our previous encounters and my developing research foci. They ranged from conversations about particular constructions (the compost toilet, irrigation system, dwellings, the solar shower) to the description of projects (the open workshop, bicycle making, bee keeping), to personal histories and in-depth reflections about the dynamics of the sites. I developed my themes for the conversations individually for each exchange, based on a set of research interests created after a short period of acquaintance (for an example of these from the Prinzessinnengarten, see Appendix 1).

The interviews, with two exceptions, all took place on site of the projects; the exceptions were a walk into the hills near Can Masdeu, and an interview in the temporary office of the Prinzessinnengarten. This was both a matter of convenience and a conscious choice. Location, as Herzog (2005) points out, is not an inert background factor in interviews but should be considered part of the process of knowledge construction. Conversations were conducted in people's homes or their work places (in Christiania), sitting in different parts of the garden (in the Prinzessinnengarten) or while looking at particular structures or projects (again the garden, and Can Masdeu). In Christiania, I also went for walks around the area with five of my interviewees, inspired by the idea of walking interviews where the environment provides cues and references points for discussion (Anderson 2004; Jones et al. 2008). This had several benefits: participants would take me to or respond to buildings and sites they judged as important for their personal stories as well as for the life and creativity of Christiania; they introduced me to other residents who we passed on the way; and several of them simply commented on it being a “nice idea” (Dietmar, notes 23 March 2012). I also conducted talks alongside particular working tasks (cleaning, shifting the compost heap, baking bread), mostly in Can Masdeu. This initially evolved from requests by my participants to talk while doing work, due to time constraints but perhaps also as an encouragement for me to join. While this led to some practical questions of how to record the chat, the working rhythms too added an interesting dimension to the interview. Our joint effort to shift and mix the compost heap while talking to Juan and Theo in Can Masdeu, for example, punctuated the interview conversation with comments on the job (“You have to make it like a volcano.”), outside noises (another resident trimming a green manure field with a mower) and silences (taking the wheelbarrow to pick up more manure, shovelling). This can be viewed as a distraction, but it can also be seen as an extension of the interview beyond its human participants. The work allows a more materially grounded discussions of issues, such as talking about notions of adaptation through new composting methods. But the silences, gaps and noises also give a direct and less mediated presence to the non-human elements – they let the garden, the compost, the site...
enter into the interview. Whilst I have only started to explore this possibility here, this suggests an interesting direction for relational and more-than-human methods.

**Participant observation and interviews as social interactions**

Ethnographic research is a fundamentally social endeavour. Participant observation, Crang and Cook (2007, p.59) argue, “is made out of social relations, and these are as much created as they are found through the research process”. An open interview may similarly be understood as a “social encounter in which knowledge is actively constructed” (Holstein and Gubrium 2004, p.141). This social dimension introduces issues of positionality into the research practice, which stands for “the need to revise ideas of neutrality and consistency” in favour of a more critical understanding of how a researcher speaks for and of others (Hoggart et al. 2002, p.227; see also Davies 1999; O'Reilly 2005). This includes a reflexive engagement with the researcher’s own involvement in knowledge-making, the role of power structures as well as mundane aspects of social interaction. It also emphasises the role of research ethics: the formal procedures such as scrutiny by the University ethics committee, the use of participant information sheets and consent forms, but also the more intangible practice of an ethical research engagement (see Crang and Cook 2007).

I earlier outlined how I negotiated my ‘official role’ prior to my involvement with each project, which helped to establish clear expectations between me and my research partners. But taking on a role within the projects is not a matter of making a transition from some absolute position of outside to insider (Crang 2003); it instead requires negotiating various different demands and assumptions in practice. Often the actual engagements are far from clear-cut: for example, when my desire to talk to visitors of the Rurbar Open Day in Can Masdeu clashed with my commitment to help the cooking team, or when friends came to visit me in the Prinzessinnengarten to see where I work. This emphasises the field as “a place ‘in between’” (Hoggart et al. 2002, p.270) with the researcher finding herself switching between academic, participant and personal modes that often “become blurred” (Crang and Cook 2007, p.39). It is here that the complexities of researcher-participant power relations manifest themselves. There have been extensive engagements with the power held by the researchers over researched ‘others’, and the danger of exploiting or pressuring research participants, which require a reflexive and sensitive approach (see Davies 1999, O'Reilly 2005). But these power relationships can go both ways, as Hoggart et al. (2002) argue, when the researcher is exposed to new and unfamiliar environments and practices. I certainly experienced this, in moments
when I felt obliged to help out, or was put on the backfoot by having my research interests attacked, and in the many cases when I relied on the goodwill of the participants to teach me, talk to me, include me in their daily life. This is linked to the many unexpected personal anxieties that come with the research engagement. Having received a warm welcome at Can Masdeu for example, I worried that I might be intruding and exploiting this welcome by asking for interviews. During my stay in Christiania – not surprisingly coinciding with a slight crisis in what I was doing – suddenly the voice recorder became an object of difficulty: “I didn’t turn my recorder on. I wonder about the recorder – does it make things more sterile?” (research diary Christiania, 21 March 2012), and: “This was also one of those talks where I never feel like switching the recorder on, it just never seems to fit” (research diary 22 March 2012). These are examples of the unpredictable anxieties of intensive research, as also detailed by Wallbridge's (2011) insightful and at times touching account of her work in green intentional communities. Overall, these aspects illustrate the strange nature of fieldwork as “a curious mixture of humiliations and intimidations mixed with moments of insight and even enjoyment” (Thrift 2003, p.106).

To deal with these insecurities of roles and positions, I placed a lot of emphasis on the notion of rapport with all my conversation partners, whether in previously agreed talks or spontaneously arising chats. Rapport, as Kawulich (2010, p.61) defines, “involves putting people at ease, maintaining confidentiality...; it involves sincerity, personality, social skills, and the ability to engender trust”. Where possible, my conversations followed on from prior encounters, and I asked people for a chat rather than formally arranging interviews. This open, informal approach seemed to gain a positive response, and it facilitated access and interesting exchanges particularly where people were used to and perhaps tired of researcher attention. This is illustrated nicely by Kim’s assessment of our joint walk into the hills:

It’s funny, I’m not seeing it as an interview. We get asked for so many interviews on the visitors’ mails that I receive. Last week alone there was 8 people asking for interviews, mostly students, and a couple of people from the television and mostly I say no. But with you, you know, you’ve been staying in the house and we’ve been working together, and we go for a walk and have a chat. (Kim, Can Masdeu, 07 March 2012)

I also had several people comment on their enjoyment of the talks, and they appreciated the chance to discuss ideas rather than just answer questions (interviews with Erik and Tamara in the Prinzessinnengarten; Hermann in Christiania). This rapport was important for making the research situation as meaningful to participants as possible (see Kawulich 2010). But it perhaps
also facilitated deeper insights on practices. Talking about ways of routinely doing things, as Hitchings (2012, p.66) points out, requires time and an atmosphere that allows people to “work through the reasons behind certain everyday actions”, based on asking the seemingly obvious in an ongoing conversation. I found such questions much easier in a relaxed setting and in proximity to the materials involved. This confirms the centrality of the research practice to findings, and the invaluable role of a reflexive but also human approach.

**Constructing knowledge**

Returning to my earlier question of how to align case studies and an assemblage-inspired approach, I understand my cases as defined by the directions of these multi-faceted, social and practical ethnographic engagements. My choices of what activities to join, what position to take within them, and who to interview contributed to the continuous refinement of both my specific research focus and my understanding of these urban alternatives as cases. After stumbling across the self-built infrastructures as interesting points for exploration in Can Masdeu for example, I decided to seek out people who had built their own house in Christiania, and focus on specific projects in the Prinzessinnengarten. But as these DIY constructions were only one facet of a complicated set of experimental practices, their descriptions continually led me into other dynamics that circled around them – approaches to consumption, work patterns, decision-making structures, local and international networks and so on. I therefore understand the cases themselves as assemblages. This also means accepting a certain fluidity in the research focus. I was often disconcerted by a sense of lack of direction, of not being sure what I was looking at or for. Watson and Till (2010, p.121) describe this as a common occurrence in ethnographic work: “[t]he insights of ethnography are often times derived through regaining one's bearings after becoming disoriented”. But for Law (2004), this confusion is more than a methodological wobble; it is ontological as he argues for a view of the world as multiple, as neither a fixed thing out there nor as something subjectively constructed, but as something fragmented that does not always match up. As such, when a researcher struggles to define and focus her object of study, this is not always a failing in research: a tighter grip on the research subject may be something that is “not only impossible, but might also be counterproductive” (ibid, p.78) for dealing with a fragmented world. Even so, we must find ways of describing this world, of making knowledge.

Knowledge-making in ethnography is, like its fieldwork, a social and integrative process, as “researcher and reciprocators (not respondents) are engaged in co-constructing a world”
(Davies 1999, p.8). Analysis is therefore seen as woven into the ongoing research process as "another stage in an ongoing critical and creative research process that takes place in another part of the project's 'expanded field'" (Crang and Cook 2007, p.133), as the "division between writing down and writing up is somewhat artificial" (O'Reilly 2005, p.179). Still, the analysis of the rich fieldwork material requires its own systematic approach. This starts with the organisation of field notes and the transcription of audio recordings, which involves important choices of how and what to describe (Hammersley 2010). In my case, I opted for a verbatim transcription that also included notes on settings, ongoing activities and interruptions, in response to my effort to highlight the non-human aspects of these encounters. Crang and Cook (2007) then give detailed recommendations for the analysis of field work materials: a preliminary reading, open coding, followed by the in-depth development of codes and a reiterative process of sifting and sorting. I tried to follow this pattern, "reading these documents one line or sentence at a time, and trying to concentrate on what was going on step by step" (ibid, p.134) before developing and mapping set of codes using Dedoose coding software. But I did not get far with this line-by-line approach. Perhaps based on my eagerness not to miss anything, I felt I was over-coding and over-interpreting individual phrases and moments, rather than following stories and sketching out relations and interactions.

I therefore took a step back and approached my material through its stories: I marked out particular activities, events, constructions or anecdotes that described key aspects of the projects' alternativity. Within these stories I then identified relevant themes of experimentality which I traced through other parts of my material. Although some of these themes were inspired by theory, they mostly emerged from the material, as is frequently the case in such intensive work (see Ryan and Bernard 2003). I then summarised them in theme sheets for each case, as well as collecting them in mind maps in the free Xmind software. I initially saw this as just an organisational tool it but quickly became a very useful base for thinking and writing through my materials, and I found mindmaps an excellent tool for working relationally. I first divided the mind maps by sites to collect 'stories' and ideas (for an example, see Appendix 3). I then traced certain themes across the three projects to see the conceptual linkages, giving rise to individual mappings of 'frames' (the social structures, institutions, imaginations and patterns that define the projects – although the title is perhaps somewhat misleading), 'embodiment' (the bodily dimension of the projects and particular practices), 'materiality' (everything relating to the material and non-human dimension of the projects), and 'creativity/learning' (the patterns and experiences related to problem-solving, surprises and personal learning). I made an attempt at structuring my chapters along those themes, but again hit a dead-end, at which
point I returned to a case-based structure which allowed me to outline the individual assemblages while tracing my themes across chapters. In many ways, therefore, my analysis took place through an extensive and iterative process of writing and re-writing, of following surprising directions and lines of thought, and discarding others. As Crang and Cook (2007, p.132) describe, “the 'analysis' of this informally constructed 'data' is likely to be via an informal process of piecing things together, figuring things out, gaining focus and direction as the research unfolds”, underlining that “analysis is a creative, active, making process”. This emphasises the active role of writing, and “the creativity of writing” (Law 2004, p.12, original emphasis) in academic contexts.

The splintering mirrors of research

This chapter has outlined how I translated my research interest and its conceptual dimensions into an empirical study of how experimentation emerges in lived urban alternatives. It is a process of many insecurities, involving my steps as a researcher, the messiness of ethnographic work, and the underlying uncertainty of a world understood in relational and fragmented terms. Often these threads stood at odds with each other, posing challenges and leaving gaps with room for improvement. But at other times they aligned themselves in moments of learning. My experience reflects a little anecdote about research told by Duke from Christiania’s information office:

There was this guy – I think he even came from a university in California or something. He didn't really know what Christiania was and he wanted to research everything... And he was very confused. And he came back after like three weeks and said yeah but if I should research this place I should move in, and if I move in I'm part of the experiment... And then I got this idea about the broken mirror. That you have to actually look very close at this fragment to get any meaning from it. Otherwise it will just be flashing mirrors. And if you only look at one mirror, you seem to forget all the other mirrors. So maybe it's right to just let it sink in, because research, what is research? Research is something you DO [emphasised]. (Duke, Christiania 19 March 2012)

Importantly, this learning is not only about a phenomenon of interest in the world, it invariably affects the researcher herself. As Bennett and Shurmer-Smith (2001, p.260) observe in their beautiful 'writing conversation': “[e]thnographic research should transform the researcher and it certainly is not for people who are unwilling to take risks with their selves”. The outcome of these multiple lines of learning is what I will present in the following three chapters.
Balancing alternative trajectories:
The Freetown of Christiania

The first urban alternative experiment I will explore here is the Freetown of Christiania in Copenhagen, Denmark. With a forty year history of resistance, independent governance and unique aesthetics, it is one of Europe’s best-known autonomous spaces, which has also been marked out as a social experiment. My discussion proceeds by introducing Christiania as a complex alternative and experimental space. My key stories come from three residents and their self-built homes, each showing overlapping aspects of the daily practice of alternative life. I then use these stories to trace the processes through which the experimentality of this alternative town is assembled and balanced. What emerges is an urban community experiment that does not follow a single purpose, that lives through its complexity and which allows diverse patterns to emerge that would not be tolerated elsewhere in the city.

An alternative playground

I am unsure what to expect when I arrive at Christianshavn metrostation, a couple of blocks away from Christiania, the largest autonomous area in a European capital city. Less than a kilometre straight down from the Danish Royal Palace, it is a 49 hectare well-known example and symbol of autonomy and radical politics (see Figure 4.1). It is also Copenhagen’s second-biggest tourist attraction, as well as the permanent home of around 800 people (Christiania 2005). Whatever they were, my expectations certainly did not involve this: I am picked up by Lars, the coordinator of the researcher in residence programme, who invites me to climb into the front of his blue 3–wheeled Christiania transport bike, and gives me a ride. It is both strange and exhilarating, like much else in the Freetown. Lars takes me through one of the main entrances, down the world famous Pusher Street where the hash stalls are just being set up for the day, pointing out various Christiania institutions along the way – the post office, the grocery store, the bath house. As we pass the playground and kiosk, the area becomes quieter, more village-like, with the tarmac road turning into gravel paths. We stop in the Mælkebøtten (Dandelion) area, one of the residential parts next to the old ramparts, made up of a group of old military barracks and a few self-built houses. The researcher house is one of those DIY cabins: originally a trailer parked on the steep rampart walls, it has over the years been
extended to include a kitchen, extra sleeping area and a sheltered porch. This will be my base for three weeks.

What strikes me when I start to explore the Freetown is how different it feels compared to the city just outside. I notice the lack of traffic noise in this car free zone, and the smells of openly available hash and wood-fired stoves, the main source of heating in many houses. At night, the unmarked gravel roads and paths are pitch-black, an experience I find disorienting. I am being invited into homes and have casual conversations on benches almost every day. This sensory expression of being alternative marks the boundaries of the Freetown as clearly as the big entrance gates proclaiming Christiania’s non-EU status. At the same time, I struggle to make sense of the area. As much as it appears separate from the outside, it is not one thing. The dynamics and patterns, and the people I observe seem to be in constant contradiction, as I note in my research diary and as illustrated by Figure 4.2:

First impression from my walk today is a real split. Down here [near my house] it is absolutely lovely and peaceful, few people (except for the occasional tourist group), and I can smell wood burning. If you go towards the centre, complete opposite. Pusher types, teenagers hanging out, lots of people... There is also a kind of mixed area along the water with a children’s area, which had a bit of both and seemed very interesting. The space near the kiosk, too: playground, benches occupied by drinkers, mums with prams and musicians. (research diary, 12 March 2012)
This first glimpse of Christiania as a space of contrasts stayed with me during my work in the Freetown – and it prefigures some of the key experimental dimensions of this urban alternative.

The contradictions are also well recognised among the residents. The most common observation is that the Freetown cannot be reduced to one idea – “Christiania means very different things to very different people” (Duke), it “is what you think it is” (Hermann), “a manifold thing” (Ulla). This diversity goes back to the very beginning of the occupation of the old military grounds in Christianshavn in the autumn of 1971, during which local activists began to squat the unused spaces, calling for the creation of a Freetown. Within a few months, and with little initial reaction from the government, the population of Christiania rose to around 300, attracting people from all walks of life:

When [the squatters] came here, I mean, there was a housing problem in ’71 in Copenhagen. And they really just wanted a place to live, and a place for the kids in Christianshavn to play. And there was this huge area, so why not just use it. From then on - the drug addicts just wanted a place to shoot in peace, the pushers just wanted a place to sell their hash. And the activists and the dreamers wanted to build up their utopia, you know simple living, and green ways of living. (Luise, CA2).

This diversity is a key to understand the richness and complexity of Christiania, as well as its alternative and experimental dimension. It is the broken mirror that I described in the methods chapter; a multitude of flashing pieces that somehow fit together but which also interfere with each other and compete for attention. The idea of Christiania is assembled from a multitude of
visions and their materialisations, from the diverse practices of a complex micro-society. What cut across the different groups from the beginning, and still comes through in many discussions within Christiania today, is a clear commitment towards personal freedom within a self-determined community. This was the initial cornerstone of the development of the autonomous area as outlined in its first aspirations document and subsequent development plans (see Lund Hansen 2011):

The first thing that was said here is that we should create a self-sustained alternative society, where all people equally can develop themselves under the responsibilities for the community. (Monika, CA1 tour)

Christiania is founded on the tension between personal freedom and communal life, which is reflected in both the richness and the conflicts of daily life, and which has crucial consequences for the alternatives that are created within.

A further foundation of the autonomous town is an intriguing mixture of resistance and play. Christiania’s existence has been framed as a site of political resistance in the face of neoliberal urbanism and the dominance of market forces, ongoing gentrification processes and repression of communal ideas (Lund Hansen 2011). Through the original occupation, Christiania has extracted itself from the dynamics in the wider city, working towards a notion self-determination and autonomy that is built on a system of common property and consensus democracy. This vision of alternative urbanism has been under constant dispute from the city and the state, with a large number of laws, legal battles and bouts of state repression reflecting varying political and public trends (for details, see Karpantschof 2011; Miles 2008; Törn 2011). The Freetown has therefore become “an excellent example of a struggle by marginalised social groups to claim the right to the city” (Lund Hansen 2011, p.307). This struggle is ongoing. In 2004, Christiania saw the reversal of the Christiania Act of 1989, which had legalised the squat and gave residents the right to collective use. This resulted in plans to normalise the area into the mainstream system of private property rights and building registration. Having lost a Supreme court case against these plans, Christiania accepted a deal to buy some of the land and building from the city and rent others in the summer of 2012, after my stay, yet the implementation and consequences of this agreement remains contested (see Amouroux 2011).

Alongside this resistance, the town is based on a particular understanding of playful creativity and culture, which is also grounded in its very beginning. The occupation of 1971 started when “local inhabitants tore down a fence to establish a playground in a newly abandoned military
area” (Karpantschof 2011, p.39), an effort supported by the local working class neighbourhood. The demands for a children’s playground in Christianshavn were eventually fulfilled, but there were other consequences, as local artist and long-term resident Ulla (CA4) jokingly describes: “They got their playground, and we got our big playground. These are my words. A cultural playground.” The Freetown became a cultural centre, a village for artists and musicians, but more importantly, it also became a space for anyone who chose or was forced to live their life on their own terms. There is a strong appreciation of the everyday resourcefulness of the residents. Ulla continues: “So you know, they are very innovative, the Christianites. And they have so many talents, you know. Which is important out here. Any kind of artistic and professional talents.” This playfulness is also materialised in the environment. Houses and structures are bright and colourful, humorous graffiti adorns the walls of old military barracks, and there are swings maintained by individual residents, for no other reason than that they are a nice thing to have (see Figure 4.3). Tree decorations are popular, too:

There are things in trees and bushes everywhere. Someone stuck a beer can on a bush near the lake like a decoration. Coconut shell bird feeders. A stone swing. Lots ofarty decoration things, oversized baubles. Something that looks like (and on closer inspection turned out to be) thermometers. (research diary, 28 March 2012)

In both its vision and material existence, Christiania is one of the most influential attempts to create an alternative and self-determined life in the middle of, but independent from, mainstream society (Törn et al. 2011), underpinned not only by a sense of political resistance but also by this playful, resourceful atmosphere.
The 'original' social experiment

Both the alternative self-determination and this sense of mundane creativity are reflected in a label which has come to define the discourses around Christiania. In 1973, the Danish state gave Christiania the status of a “social experiment” (Arbejds- og Socialministeriet 1973, cited in Törn et al. 2011, p.9). This was primarily a political move, an expression of the political uncertainty of those years and of the wider Danish consensus culture (Törn 2011). Crucially, it granted Christiania temporary autonomy in the early years: as an experiment, it could exist as an anomaly within the wider system, without any immediate need for the state to take a decision on its future. Christianite residents initially did not acknowledge this status but “were willing to accept any outside definition that made it possible to continue what they were doing without too much interference” (Törn et al. 2011, p.9). The status had a further consequence: it positioned the Freetown on the radar of the research community as “an opportunity to explore possible alternatives to the capitalist economy and/or the social institutions and urban planning of the Danish welfare state” (ibid). Christiania became known as an experiment.

Although legally the experiment label was dismissed in 1978 (Hellström Reimer 2012), it is a term that has stuck. Over the years it remained in use as a reference point in parliamentary debates and media discussion, judged to be a success or failure mostly depending on political leanings (see Törn 2011), and interpreted in variously “socialist / anarchist / liberalist” guises (Lund Hansen 2011, p.304). The term still informs current description and framings of Christiania, and it is echoed in the town's self-understanding. It features extensively in the Christiania guide, where it encapsulates the Freetown's self-determination and autonomous governance:

Christiania’s self-government represents a valuable social experiment, because we, over the decades, have contributed useful experiences benefiting a further development and renewal of the democratic process in Danish society. (Christiania 2005, p.21)

This testing of an alternative democracy is ongoing and remains a key claim for Christiania’s autonomy, as Duke (CA5) indicates:

I think it is a pretty good description. Make 650 people rule themselves without a mayor or a general, that is an experiment... When Christiania was questioned during these discussions with the state in 2003, I really started to think yeah ok, but what is the purpose of all this. Denmark have tolerated Christiania for many years, because something happened in another way. And it is part of democracy that you let people do stuff in another way. It's freedom. Maybe the experiment fails, maybe they are wrong.
This discourse frames Christiania as an experiment of alternative governance and society, where mechanisms of consensus democracy and self-determination are tested. There is another dimension here, which is also hinted at in the guidebook: visitors to the Freetown can “learn about the different workshops, businesses, kinds of dwellings and on-going experiments” (Christiania 2005, p.16). As a direct consequence of the self-governance structures and the commitment to personal freedom, Christiania is made up of many individual, small-scale efforts of alternative living. Different choices, directions and ideas co-exist, and come to be expressed and materialised in the everyday spaces of the Freetown: in homes, open spaces, businesses and infrastructures. They incorporate topics as diverse as alternative aesthetics (Hellström Reimer 2012), queer spaces (Wasshede 2011) and unusual configurations of home and family life (Jarvis 2011), reflecting Christiania as a “space for alternatives” (Törn et al. 2011) as well as one alternative space. These effort are exploratory and contingent, and their diverse material, social and cultural dynamics contribute to a wider sense of experimentation.

The remainder of this chapter explores these dynamics of experimentality through one of these alternative directions: Christiania's self-built homes. These buildings are immediately recognisable; their colourfulness, striking materials and unique architecture is an intrinsic expression of Christiania's spirit and many of them feature on postcards and photographs. They are also one of the main Christiania 'inventions', as resident Dietmar (CA9) states: “The beautiful houses, beautiful architecture, that is one thing Christiania has invented.” They reflect the diversity of the autonomous town: they are personal, lived alternatives with their own unique trajectories, yet they express related ideas about making alternative urban life possible. It is in this interplay of tendencies that Christiania’s experimentality is rooted. My discussion focuses on three homes (see Figure 4.4): Arne's house and its incremental, recycled building history; Eddie’s current building project which traces the ongoing possibilities and complications of life in Christiania; and Hermann’s home with its unusual infrastructures. All three contribute to an insight on the experimental practices of Christiania, by opening up the individual sociomaterial assemblages of building and living in the Freetown.
Family and materials in small steps: the story of Arne’s house

When I explain my interest in the self-built houses to the people I meet in Christiania, one name keeps coming up: Arne, who has built his home in the outlying, village-like Børneengen (Children’s Meadow), which also houses the kindergarten and a pony farm. I arrange to meet Arne at his house one day. The dwelling looks like an assembly of different bits of house stacked next to and on top of each other along the old ramparts, making it feel both small and sprawling at the same time. Dark wood panels surround white-framed windows on the outside, and the roof slopes into different angles, creating little balconies and openings at various levels (see Figure 4.5). Arne comes down from the ramparts just behind the house, where he has been planting flowers, and we sit and chat on the outdoor bench, before he invites me in for a tea in his open-plan kitchen. It is an airy yet cosy space full of light, with light wood shaping the rooms in unusual angles. Beyond the kitchen, the house extends upwards to another floor and several mezzanines connected by wooden stairs and ladders. Like my own researcher
residence, Arne's family home is the outcome of a process of evolution and creation that started with a simple trailer 20 years ago. It is also an example for a personal alternative that has grown within and alongside Christiania's wider experiment in self-determination.

The story of Arne's house emerges from an entanglement of other stories: that of his family and of the materials he used, set against the wider structures and developments of Christiania. It is the result of a complex and long-running set of interactions and relations around the family's lived practices. And the house itself, the kitchen we are sitting in, can tell these stories if you know how to read them. There are shapes that do not quite seem to fit together, unusual angles, little quirks that make the house look unconventional. Pointing to a part of the living room / kitchen wall with a sloped roof and a distinctive change in styles, Arne says:

This is actually the house wagon, it stopped here. And then you can see the beams here – that is the old house. Actually I made tricks with it, so it looks different than it used to. And you can see the roof there... The solution in the roof is not very logical, you will never draw a house like this when you start it. (Arne, CA12)

When I ask him about the process of building his home, Arne's explanation does not start with any plans or design. Instead, it becomes a complex story of his family in relation to their
dwelling, starting with his move to Christiania in 1990: “it was the love that dragged me here, my wife used to live in this house wagon”. But this quickly turned out to be too small for two people, so they bought up an old wooden house to extend the trailer from 16 to 30 square metres. Another extension followed – a room slightly below the level of the rest, which is still visibly separated today: “And then, my wife got pregnant. Of course that was also the idea of the extension, the need of space for being a family.” A couple of years later, the growing family as well as the development of Christiania’s infrastructure brought a further addition to the house: after the area was connected to the sewer system, and his wife became pregnant with twins, Arne built a bathroom and toilet. Finally, with the three children growing up, he added the second floor and mezzanine levels to make space for their growing requirements as a family, resulting in the home that I got to see.

The uniqueness of Arne’s family home is an outcome of its material story, too. Arne explains:

And of course, most of the constructions I made have been with recycled materials. So I’ve been going and picking up materials around and this is a cheap way to do it.

Recycled building is a common practice of building in the Freetown, and Arne got some of his materials from the Green Hall, the Christiania business specialising in the trade of recycled material. But mostly he did the salvaging himself, by talking to people, finding out where constructions are being torn down and enlisting the help of friends in dismantling them. This adds its own dynamic to the building process, as he explains for his second floor extension he built for this growing family:

Arne: And then I spent some months collecting material. Actually I was very lucky. I found a big house that should be torn down, and I said I can take it all, and they said like – ok (laughs). So I ended up with this huge pile of material, really huge [emphasised] pile. It was just incredible, because I had to do it fast. So I took it all apart and stacked it here. We spent like a month dragging nails out, and making lists of how much material there is, which kind, which size. And then when we had like an idea of what we got, and then I started to make drawings of how it could it be, with these materials that we got.

Int: So it very much was determined by the things that you actually had?

Arne: Yeah. What happened, how it ended up.

Int: You didn't have a complete vision of it before?

Arne: No, never. It has always been like this.
This being a retrospective of a building project that took place over ten years ago, perhaps the easy flow that Arne outlines here is a little overly positive. But it emphasises the active role of materials. The extension was not fully planned; instead, it responded to material as well as social circumstances. Arne hints at the role of both patience and serendipity: projects like this are only possible when materials are available, but when an opportunity arises, things can develop at short notice. He later adds that he had one personal concern – to get light into the house, to make it open and bright for the long winters. But most of the process is a joint social and material effort.

This open and responsive building practice is an example of what Arne calls 'small-step architecture'. The construction is an ongoing, incremental process without an overall plans, a process that develops and changes in response to the builder, occupants and material (see Figure 4.6). This allowed Arne to create a dwelling he could have never designed and implemented in one go, and it also corresponded to his own understanding of independence:

If you start with a small basic house and then slowly increase and extend the house, then it gives you much more possibilities to change your life. If something happens, whatever it can be, it doesn't mean that your life is suddenly ruined. You can stay in your basic house or how far you've been reaching in the process. Because you can have ideas of how should things develop but you know that you have the idea but it often never ended up...
because the situation changed and habits changed.

One aspect of this is the possibility to learn and change throughout the building process:

Because it is small steps, there are things that show how can we solve [a] problem. And there are different opportunities so it’s just to make the right choice. That’s my angle of architecture [laughs].

Although a traditionally-trained thatcher, Arne had to learn the skills and approaches to build his own house, which he did through literature and the help of the wider community, but which he also needed to develop through practice. For example, he slowly realised that he was not putting enough insulation in his early rooms, and increased it as he went on: his first extension is still noticeably colder. He also emphasises the financial independence this method of building allowed him:

The nice thing is about building houses in small steps is that also you have the chance to – you don’t have to go to the bank and get a loan. You can do it in small terms. And for me it has always been important, the freedom in life is that you don’t have too many costs every month. It actually gives you the possibility to change your life if you want to.

This emphasises his building practice as more than a functional requirement of housing – it is an expression of particular priorities and approaches of this family's life.

Arne's family home is unique in its aesthetics, its arrangement of floors and rooms, and in the way it has come together, but it does not rely on particular experimental features. Although he developed a sandfilter system to clean the greywater from his bath and sink, Arne is not seeking to experiment with radical ideas:

*Int:* Are you looking to implement something really experimental or unusual at some point?

*Arne:* No, not really. Because I'm not a scientist like that. For me, so many fantastic things have been developed. And I might as well use the best. Of course I read a lot about these things, I like to know what is the good thing to do, and then develop it like that.

To Arne, the key concern is simply to “have a plot of land where you can do things”, the freedom to work without long-term commitments or debt, and to use his hands: “I like to work with the soil and use my hands”. This is what Christiania enabled him to do, by providing the necessary pockets of freedom. He also appreciates the communal dimension, from which he benefitted in many ways during building:
It is suitable for me to be in a community like this, because I like getting involved with other people and doing projects together... The important thing of having people coming help is that you have to remember that when they call you and say oh, please come and help me, then you have to do it, you have to go. Because they helped you.

Arne's house is an expression of a personal choice of how to live, reflecting values of independence, community and adaptation. These notions are ingrained in the trajectory of the building, and they provide an interesting insight into the dynamics of DIY architecture and its emergent and surprising outcomes. It is an intertwining of different stories: of Arne's family, materials and the communal dynamics of Christiania. The house is unique not because of particular radical solutions, but because of its particular assemblage that makes it one personal experiment within Christiania. At the same time, the house is an outcome of decades of hard work: in its retrospective, it takes on a distinctly positive turn. This does not always reflect the difficult, strenuous and often insecure steps that are involved in the actual practice of recycled building and alternative low-resource living, as the next section will make clear.

It's hard work but at least it's your own: the story of Eddie's house

I learn much about these difficulties and the affective dimensions of building one's own life in Christiania during my time with Eddie, who I am introduced to by former resident Luise on a joint walk around the lake. A quiet and friendly young man of mixed Greenlandic heritage, Eddie is working on the base construction of one half of a building in the quiet Nord-Dyssen area across the lake. He is happy for me to visit him during his work, so I sit and talk while he measures beams, varnishes wooden fixtures or mixes concrete. His job is ambitious: a year ago Eddie took over an old, slightly ramshackle wooden house that had not been kept well by previous occupants, so he decided to renew most of it. He is now working on one half while living in the other, sealed off with large tarpaulins. On the construction side, only the roof remained from the old structure (see Figure 4.7). It is still usable and it helps to cover his activities: the negotiations about Christiania's normalisation came with a ban on all building activity, with a constant threat of police intervention. Like the previous example, Eddie's house is a personal project, a construction very much tied to his life and priorities. But it also illustrates some of the ongoing dynamics of construction and building in Christiania that are less obvious from Arne's account.
Eddie's building project is a material response to his personal situation. He very openly tells me about his difficult journey: because of his mixed heritage he feels like an outsider in both Denmark and Greenland. The place he would most call home is Kastrup, the area of Copenhagen where he grew up – “and that's an airport”. Christiania with its underlying ethic of acceptance, he says, is “the only place where I sort of fit in, where I can be myself”. He had been coming to the Freetown for several years, to play music, work in a café and hang out. After a difficult time in the previous year, he then decided to take on this old house when it became available, “to have a project and to make some roots”. He is still coming to terms with this: sometimes, he says, he just wants to “scream and run away, because I feel so lucky with the house”. But now he has plans: completely renew it, with three balconies, a terrace and a rainwater harvesting system. He also wants to make a garden in which to cultivate rare wild species from Christiania – he has an impressive botanical knowledge and works with the local nature group. None of this, he says, would have been possible elsewhere.

For the moment, Eddie’s focus still lies on the basic building questions. During my visits, he is working on the foundations of the building, and the basic timber frame construction that will outline the rooms. Like Arne's house, his construction is fundamentally grounded in a practice of recycling. Eddie (CA11) claims to have spent almost no money at all so far:
I have a friend who has his own carpenter firm, and he bought a small wooden cottage, in a suburban farming areas. And I helped him tear everything down, standing there for two weeks, taking out the nails of all this wood. Around 700 Danish Kroners for new screws, that’s all I actually brought to the budget.

This echoes Arne’s description of his recycling successes, the serendipity and the work and time investment required. But as an ongoing project, Eddie's wider experience of recycling gives a clearer picture of the effort involved. The practice dictates much of his daily routine: most mornings he visits the recycling area of Christiania to check what he can find. You have to go early to get good items, he explains and then jokes that “it almost becomes addictive to go and check”. Christiania’s recycling area is a yard which, like much else in the Freetown, looks messy and uncared for at a first glance, but after a while reveals its organisation. Different materials are separated out, and complete items like stoves or washing machines line the sides. It is the busiest and best recycling spot in Copenhagen, as Eddie’s says: it is open 24 hours so people come from all over the city. Sometimes he and his friends also make trips to other recycling points, but this has to be done at night as it was recently made illegal to take materials from government recycling spots, “so you buy more”, as Eddie’s friend and building partner Dean complains (notes 29 March 2012). The material then needs to be shifted, which they tend to do exclusively with transport bikes, as Dean explains further, including the big 1.5 x 2.5 metre plaster boards and heavy beams I see around.

Eddie proudly shows me his recycling achievements, a big pile of materials and things next to his building site. Some of the items he collected are the pipes, windows and beams one would expect for a building project, but other things are more curious. There is a children's toilet and a basketball hoop. These items suggest that salvaging and recycling is a practice that goes beyond the acquisition of materials for a particular job. He collected the toilet for the future, he laughs – he has a baby son who could use it in a few years, “or I might sell it”. The basketball hoop is a reminder of his past: his dad, who used to be a blacksmith had promised to make him one when he was younger but it never happened. Now he can sand this one down, repaint it and make his own. This is an interesting dimension of this pile of things: it is not just construction material, it is a repository of items with their own history and potential. And they do not just make up a side-story; the items and materials also feature directly in the planning and progress of the construction. Eddie had recently picked up a big pile of different sized windows from Christiania's recycling point, which needed some re-sealing but were otherwise perfectly usable. His plan was to “make some drawings to see where they can go”. Often, he says, he is “just collecting things” even if he does not have an immediate use for them, and
during the construction “you need to follow the material”. You also pick things “that would be
cool or whatever” (notes 31 March), as his building partner Dean adds, and you can always try
and sell things you don’t need. For Eddie, this recycling is an important part of his life
philosophy: “I have no money, but I have the gift of seeing value in everything”. This gives a
very direct and lived insight into Christiania’s recycled building, its values and processes, as
illustrated in Figure 4.8.

The complexity and diversity of the material makes Eddie’s building project unique and
unpredictable. His relationship to these materials is never static, as he adapts, tests and learns
through his project. He brings the basic skills with him for his building project: skills he learnt
from his blacksmith father and some temporary carpentry training. But much of his
competency is acquired as he goes along. He takes constant input from friends and
acquaintances. His friend Dean is one of them, an Irish engineer who dips in and out of
different projects in Christiania and frequently helps by giving advice and joining in. There is
also Ole, Eddie’s future house mate, with whom Eddie has what he describes as “a working
partnership: he points and I do it”. Eddie has also established a much wider network of
contacts to other squats in the area. Some of them hold workshops in self-building, and he says
he has learnt a lot of building specifics there: for example that a roof should reach over a wall
by at least 70cm to avoid creating a cold link. Other moments of learning are more accidental.
One day when Eddie is working on a set of wooden beams, an acquaintance passes by, giving
him advice on how to mix a good indoor wood varnish:

Figure 4.8: The process of building: collecting materials, sketching ideas, assembling structures
Steve, the American guy who stopped by, also appeared to be engaged in some building project. He was very interested in the tar that [Eddie] used to varnish the lower beams, and then he told him how to make a mix for in-door beams (1/3 tar, 1/3 turpentine and 1/3 something else that I now can't recall). Eddie grabbed a pencil and wrote the 'recipe' on one of his new wooden beams. That is how knowledge sharing works, apparently. You sit and talk. Everyone has an opinion, and a look, too. (research diary, 17 March 2012)

And perhaps it also requires a wooden beam and a pencil, material objects that facilitate this exchange. Other moments of learning are more difficult and require effort. After not visiting the building site for a few days I am surprised by Eddie’s progress: he suddenly has a foundation for his house. But he says this is the second time he did it – the first time he fixed the beams they turned out to be 1cm too high so he had to take it all out again. But “now it’s perfect”. He is calm in his reflection on this kind of learning: “these things just happen when you build it yourself, I’m learning”. He also says that he doesn’t really see it as work: “Well, ok, it is work but it is my work, so it is different”.

This last statement nicely summarises Eddie’s perspective on his home building project. It is a hard and at times risky task. A few months earlier he sustained a concussion when a beam fell on his head, and he has been struggling with headaches ever since. It is also strenuous physical work, and as much as I am impressed with his progress, I am aware that this hides many days of frustration. At the same time, it is his work – a project that is part of his life and which corresponds to his wider views and values. He says “I don’t like doing things for money” – he prefers to trade things or help people. Christiania provides the possibility for him to practice this approach. Eddie’s building project is a rich social and material journey into alternative home-making, which illustrates the efforts and struggles that underpin the exciting and quirky experimental structures in Christiania. It also singles out the deep integration of alternative ideas and everyday life. Like Arne’s house, both Eddie’s process of building and its emerging outcome is a reflection of personal views and approaches. The example also points to the wider social and political landscape in which such an alternative operates in Christiania. Experimentation, Eddie’s home suggests, emerges at the intersection of these dynamics.

**Building connections to nature: the story of Hermann’s house**

My final example of a Christiania alternative is Hermann's house, another DIY construction with a unique material history, which illustrates the self-built homes not only as alternatives of construction but also lived daily practice. Hermann’s house lies a little further along from
Arne’s home, in the area known as Blå Karamel (Blue Caramel), where the town becomes a thin strip of land between the inner and the outer lake. Few tourists or visitors make their way down here, it feels rural and quiet. I meet Hermann by chance when I wander down from the ramparts towards the little wooden cottages and small pond. He is sitting outside his home, on a little sheltered porch, pouring himself a coffee. We start chatting about the nice spring weather, then he invites me to stay and talk. Like Arne, Hermann built his house over decades. It started with a trailer one can still recognise in its outline, but it is now a small wooden cottage with colourful frames and window sills. The small porch borders an outdoor kitchen with a sink connected to a rainwater harvest system, and a pipe going directly to the root zone treatment in the pond (see Figure 4.9 for a view of the house and pond). Set aside, there is a well-kept shed, an outdoor shower in a wooden shack, and a latrine. Apart from the incremental, recycled building, Hermann’s home also emphasises the possibility of small-sale experimentation with different infrastructures and ways of living as part of the diversity of alternatives in Christiania.

As with Arne’s and Eddie’s houses, the story of Hermann’s home is also the story of his life: he describes himself as “a hippie” who worked in the Christiania health house when he moved his trailer to this spot near the pond. He then got married and consequently added another trailer, “but not on the side, I put it on top”, creating a second floor, which now contains a bed and a small study area. The two levels are connected by a steep, well-crafted wooden ladder with an
old shipping rope on the side, which he found in the harbour. He then added the outside kitchen, and integrated the water systems. All of these jobs are his personal efforts: “The house is full of examples [of things I have made]. I had 30 years to do everything and my hands are everywhere.” Building his own living space also meant finding solutions for the lack of infrastructure in this outlying area:

When I came here 30 years ago, there was nothing here, except for the forest. So we had candles, went into Christiania to get some water, and a stove and a bed and that was it... We made our own light. We made our own toilets. (Hermann, CA14)

Many parts of Christiania, particularly outside of the central barracks, lacked a functioning infrastructure of electricity, water supply, and sewer connections when it was occupied. This added an additional challenge for the home-builders, and many, like Hermann, addressed them with their own, at time adventurous solutions:

I started up with a bicycle wheel... In some bicycles you have the dynamo in the middle, so you put [some blades] and in the wind it turns around. The dynamo makes electricity, and then you have the lamp and you get electricity this way.

As with Arne and Eddie's efforts, these solutions relied on help from neighbours and friends. But this communal approach contains its own dangers:

Then I got a connection with a guy living over [on the other side of the lake]. And he is kind of – what do you call it, a blacksmith. He can weld. So he imported some dynamos from China. That is 20 years ago now. And then he made some wings and put them on the dynamo, making it go round. And then they fell off when there was a storm and we had a lot of problems. Going up there, to 7 metres, to catch them. A lot of fun. But it was also a little dangerous.

These stories illustrate some of the fundamental experiences of the Christiania home-builders: occupying the old military presented a unique opportunity for personal life choices but it meant dealing with at times very adverse and challenging conditions, which had to be worked out through personal efforts and ingenuity.

Over the years, Christiania’s internal building office has extended the basic infrastructures from the central part to the outlying areas, making such solutions redundant in most cases. Blå Karamel is an exception here: although it now has electricity and water, it is one of only two areas not connected to a modern sewage system. The houses therefore still rely on compost
toilets and greywater root zone treatment systems. But Hermann also has not given up his other experiments. He still runs solar cells and a small wind turbine, complete with an arrangement of mirrors so he can check from the house that it is not falling apart, which produce around a third of his electricity, he estimates. More recently, he also installed a solar-heated rainwater shower for the summer, with a black hose pipe heating the rain water on top of a wooden shed. The existence of these alternatives goes beyond the ingenuity of their material creation to include specific everyday practices that facilitate their functioning. After showing me his outdoor latrine, a wooden shack with a seat behind a curtain, Hermann explains its use:

I am very concerned about my health so I always look at my shit. In a water closet you cannot do that. So two times a month I go there [points to the trees], dig a small hole and put some earth on it. And then I take a long stick, and after a year I go back to it to spread it. And it is not disturbing [anyone], I am very conscious about it.

The explanation of his latrine includes as much description of his routines and the tasks required for using it as references to the materials involved in the construction. He talks at length about the temperatures needed for the waste to compost, the depth you should dig holes to, and the problems that can arise with smell. At other times, he needs to make use of alternative arrangements. When it is too cold to use his solar shower, he goes to the Christiania bath house: “It’s a natural thing for me.” With no running hot water, an outdoor kitchen and compost latrine his home lacks many comforts that people would expect. Hermann’s home therefore functions as an ecologically aware alternative, but it could also be described as basic.

These infrastructural projects reflect two distinct aspects of Christiania’s experimentality. They are responses to unique material and environmental challenges and a fundamental requirement of everyday life in the Freetown. But they also express a particular set of personal choices that is somewhat independent of these direct needs, and which is cultivated voluntarily. The sometimes hard or uncomfortable practices connect to personal values and views, and a fundamental understanding of the body in relation to its environment. Hermann is aware that his life would not suit everybody, but it fits into his wider world view:

I am an old man and I come from another time. When I was a child it was fucking cold all the time. And you just had to stand it... Today [people] have a very low frustration limit. They easily get frustrated. 'Oh, not the bath house, the water is not good.' For me it is not what life is about. There are more important things.
This suggests that his intriguing solutions are tightly entwined with a wider approach to life. Hermann's experiments shifted from a basic infrastructural necessity to a subtle material and embodied expression of environmental values and personal alternatives. This is how he himself conceptualises his efforts:

*Int:* What kind of things have you tried to make like a life that you are happy with?

*Hermann:* Maybe, for me, it is very important to have a connection with the earth. To be, to have an authentic life. Because I think if I lose this connection I go crazy.

He calls it “a kind of consciousness” to create one’s own energy: even if this is not a complete solution, it is a way “to know the energy situation... and to make a connection”: to relate to wider resource and environmental issues in a direct way, as illustrated in Figure 4.10. He describes this as a way of coping:

It is coping with my abilities... Many people say 'Oh I cannot draw'. But everyone can make a drawing. Maybe you cannot make an exhibition, but you can make a drawing... I didn’t know at the time, I just did some things. But after reading more, I understood that what I am doing [is] this idea of coping.

He has taken the term coping from work in psychology, where it refers to a person's response to changing value systems. This neatly encapsulates a key approach of Christiania's home-builders, as they respond to the demands of their challenging environment on their own terms.

*Figure 4.10: Making connections: outdoor kitchen with rainwater harvesting and drainage into the root zone system*
Hermann’s house is a response to particular directions and ideas in his life. Starting from a necessity, Hermann’s experimental solutions have become manifestations of deeper views and approaches, of his need to be connected to earth and resources, his understanding of coping, his focus on bigger ideas. The implementation of his ideas emphasises the role of materials in this story, but it also brings out a further dimension: the importance of the body, and the embodied routines that surround any solutions. These are part of the house's lived and practised alternativeness, of a personal set of values materialised within the wider social and infrastructural development of the Freetown.

A town of experimental everydayness

Hermann, Arne and Eddie's homes stand as examples for the many personal choices and alternative that are built, painted, crafted and collected in Christiania. There are many others: Rolf's 12-sided house that is inspired by positive cosmic energies, Jochen's house and gallery that is built according to zero-carbon standards, the travelling carpenters' Banana house which snakes around the corner of the ramparts and has a swing integrated in its central room. Each of the stories I presented sheds light on the emergence of these dwellings as the results of an assemblage of what Jacobs (2006, p.11) calls “there-ness”, which includes “the process of construction and use of the building, the various modes of authorship and ownership, the day-to-day complexities of maintenance and servicing”. They showed significant similarities in their use of recycled materials, their small-step approach and their entanglement with the personal life of their builders. But they are also unique experiments in the way they materialise fundamental values and concerns. The Freetown is made up of these individual building and life-stories that touch and intersect, weaving together a recognisable spirit of difference without being reducible to one common goal or path. The question that arises, then, is how the wider experimental alternative of Christiania arises from the relations and patterns that connect these unique homes.

A slogan I heard frequently in Christiania is “Live life artistically!”, the notion of making the most of one’s limited resources and expressing creativity not only in traditional fields but within daily life. The manifesto of the Cultural Association of Christiania (Kulturforening) explains the idea behind it:

Live life artistically! Those words speak for the Free state. Because Christiania is an artist town. Not only for 'real artists', artists in the common understanding, but for people expressing themselves artistically in everyday
life – in small and big things, and in ordinary things. If you see a hole in the asphalt on the road, maybe next day it will be filled with marble mosaic pieces or glazed tiles. (Cultural manifesto, own files)

There is a widespread sentiment of resourcefulness: of making do and responding to adverse conditions for a greater good, but also of the ingenuity that comes through in the accounts of Arne, Eddie, Hermann and other Christiania residents. This approach applies to Arne's small-step architecture, his slow process of building a family home over decades. It is reflected in Eddie's appreciation of recycled materials, his spending time and inventive effort rather than money on his building site and dealing with the frustrations and physical limitations of this work. It also underlies Hermann's resource experiments, his trials with the wind turbine that helped him respond to the difficult conditions of the early years, and his new solar shower that captures his fundamental values. Hermann described it as a way of coping, of adjusting to changing circumstances. It is an attitude that runs through Christiania and which becomes visible in the many unusual solutions and strange combinations of items that are present – a bench propped up with beer crates, some stairs extended with planks of wood, a door fixed with old signs. They are what artist and former Christiania Researcher in Residence Kristina Müntzing (2011) calls “instant solutions” or “immediate architecture”: quick fixes to infrastructural problems that use surprising materials or ingenious ways of combining them (see examples in Figure 4.11). Describing the way of thinking behind such solutions, Duke (CA5) gives an analogy:

Once there was a big pile of garbage out there. We could have used endless meetings to find out who put it there, whose responsibility it is. It's your job, why don't you do it. Yeah but I had a day off... Instead, it turned into an art project. You see the way we are trying to solve problems?

This is of course a short-hand that underplays the complexity of many challenges in the Freetown, but it hints at an underlying thinking that informs its efforts. The everyday artfulness and inventiveness express a vernacular notion of creativity (Edensor et al. 2010) that seeks out creativity in mundane moments. Rather than associating creativity with the uniquely gifted artist and with traditional creative occupations, vernacular creativity can be found in mundane contexts and marginal sites, in the subtle adaptations of daily life that allow people to deal with life in a hopeful way. These may look interesting but are often distinctly unglamorous, like Hermann's outdoor shower or Eddie's floor construction, and they arise from people's mundane concerns and struggles.
Vernacular creativity is a celebrated tendency within Christiania, and it informs how the Freetown deals with its unique challenges. It also underlies its experimental dimension. Creative shifts in thinking, local resourcefulness and the resulting 'immediate solutions' should not only be seen as a response to existing problems. Vernacular creativity, Edensor et al. (2010, p.10) write, “possesses power to transform space and the everyday lives of ordinary people to reveal and illuminate the mundane as a site of assurance, resistance, affect and potentialities”. It provides openings and possibilities, potential starting points for a wider rethinking of how to live – in short, it is also utopian and experimental. This potential is not immediate or self-evident; it requires the appropriate conditions and a lot of effort. Dietmar (CA9) expresses it like this:

The artists – they have the freedom, because they know how to live their life artistically. But a lot of persons who are not artists, they do not know how to [do that]. So that’s really one thing we have to learn. Because I think we have to change our system, we have to get rid of the consumption society, and then we’ll have another emptiness in our lives.

For Dietmar, this 'artistic' life of everyday creativity and the ability to pursue own ideals and choices freely are the foundation of a more conscious and sustainable life. He argues that moving away from the dominance of consumption and accumulation of money requires other values and directions “to fill the gap” – the kind of values expressed by the everyday artists of Christiania. But this creativity is a skill that needs to be learnt, and he describes Christiania as a potential learning space for this kind of change.

In parts, Dietmar's assessment of the actual state of Christiania's learning offers is rather negative – too many people, he argues, are not willing or able to engage in real learning – there
are many ways to fill absences, and Christiania has its own share of problems around addiction and mental health. But there are many possibilities around which such learning can be built in Christiania – as I showed in the three examples of the self-built houses. Arne, Eddie and Hermann are engaged in constant processes of learning through their material practices, their small-step architecture or the casual exchanges with friends and acquaintances. This includes what I earlier outlined as first order or lower level learning (see Brown et al. 2003): technical learning or finding solutions, such as Eddie learning a new mixture for wood varnish or asking Dean for help with the floor construction. As Duke somewhat jokingly summarises from his own experience: “No I didn’t know how to [make a roof], but I learnt. You know, you have to ask three different professionals. If two of them agree, you can go ahead”. But the home-building projects also relate to higher order learning, in which rules and frames come to be redefined in uncertain and ambiguous contexts (Fiol and Lyles 1985), such as Arne’s changing family, Hermann’s expression of his environmental values, or Eddie’s dealing with his own precarious life situation. These refractions are not divorced from their normal life and concerns. Experimental learning of artistic life plays out in the mundane, where different personal choices are expressed, materialised and practised, making Christiania a site of “experimental everydayness” (Hellström Reimer 2011, p.151). This forms one of the fundamental patterns that construct the experimental assemblage: the openings and possibilities are created through an ongoing recursion of activity and evaluation, of observing and responding, not according to any formal criteria but to the demands and needs of everyday life.

Assembling and balancing the ‘sociological garden’

This creative approach and ongoing learning within the everyday is a key feature, but Christiania is more than an agglomeration of individual life projects and experiments. It is very much a communal alternative, which thrives on but also needs to manage its diversity. From an experimental perspective, this raises the question how the wider experiment comes to be negotiated among a diverse collective of individuals – how the assemblage continues to be formed and maintained (see Murray Li 2007). I introduced Christiania as a complex space with a rich social diversity, a legacy of the initial occupation that attracted hippies, artists and homeless squatters to the military grounds. These groups are now the experimenters who need to navigate their roles within the complexities of everyday life. They also need to do so without any explicit leadership: the hallmark of Christiania’s democracy is that “there are no leaders” (Ulla); decisions are taken by consensus and everyone has the right to be involved.
This comes on the basis of a deep commitment to personal independence. As Arne puts it: “Coming here for me is an idea of freedom”. The acceptance of these paths creates a complex tangle of individual views, values and situations, which are the source of Christiania’s vivid mix but which also jar and come into conflict: “next to the guy who is very green and building a passive house there is another one”, as Luise says. At the centre here stands the observation that Christiania is not a community of activists who are creating their own bubble of utopia. Christiania is real life:

The thing about Christiania is that it is not an activist place. You don’t have to be active to be here. You have all kinds of people... And that is the healthy part about Christiania, it’s for real. It’s not some serious, extreme dreamers, building a bubble of anarchy around them. No, it’s reality, all the time. We deal with real trouble. ... Christiania is not at all utopia, not even close. Christiania is just reality. Christiania is just people living here. Arseholes, like any other arseholes. (Duke, CA5)

Like the playground I described in the beginning, which mixes tourists and drinkers, children and urinals (see Figure 4.12), Christiania is an unlikely, and often unwieldy combination of elements – the splinters of a mirror. Like other autonomous spaces, it constantly struggles with the dichotomy of individual and collective autonomy (see Pickerill and Chatterton 2006). Many residents therefore consider it the main achievement of Christiania for this diverse group of people to balance their life together. This provides great opportunities for following and testing different paths, but it comes with tensions that have to be negotiated.
In many ways, the diverse community provides a rich set of experimental possibilities: it allows people like Eddie or Hermann, who would perhaps be cast as outsiders in mainstream society, to be active in an experiment on urban futures, with their skills and views given room and taken seriously. This commitment to individual freedom is more than rhetorical, it is practised on the ground through a strong ethic of communal support. The three home-builders all talked about the help and advice they got from others in the community, and the ethics of exchange that allowed people to get materials cheap. Dietmar (CA9), a former resident, summarises this nicely:

When I moved to Christiania it was cheap and because you don’t have all these regulations, you know, if you don’t pay your rent at the time, it doesn’t have any consequence. In that way, you have a lot of economic freedom. That’s my experience. ... You have to do the things by yourself, to build your own house, so it’s more about time than money. And you can do something and you don’t need a lot of money. You can get a lot of your needs met in the community.

Photographer Luise (CA2), who spent several years documenting life in Christiania, makes a similar point:

Like, all kinds of people can just come here, and look around and do a project, whatever. It’s much easier to do little projects, and fulfil your dream here. Because you are not far from getting your hands on whatever you need in terms of help or whatever, or a room, or a big square, or money. You go to Woodstock, the bar, to the meeting Thursday morning and you say I have this circus dream, I would really like to do a circus for a day. Can you all chip in? And they would give whatever.

This support gives a practical and material dimension to the idea of freedom. It enables people to engage in projects that would be far beyond their means in terms of skill or finance otherwise, echoing the central role of mutual assistance in alternative spaces (see for example Pickerill and Maxey 2009b), and the effort of making different relations cohere in heterogeneous assemblages. The culture of support does this by anchoring these diverse personal alternatives within the wider thinking of the Freetown, allowing a joint spirit of altertiveness to emerge.

At the same time, the diversity of stories, views and idea requires careful negotiation: it means balancing “the sociological garden”, as Tore calls it, putting in the labour that is necessary to assemble “practices that are diffuse, tangled and contingent” (Anderson and McFarlane 2011, p.125). This is essential for the survival of the Freetown as a space of difference in the city, and
it simultaneously guides its experimental dimension, as this negotiation sets up a framework for the possibilities of learning and doing. Much of the day-to-day work of the Freetown involves dealing with its diverse directions. While the community supports personal ideas, it also demands compromises, which affects the building projects I have described. As Arne (CA12) summarises:

Of course it is important that you concern about other people because you have to live among them. And there have to be limits of how you can develop yourself into the community.

The Freetown has developed structures to facilitate this accommodation. Most important here are the area meetings (område møde). Christiania is split up into 14 areas, ranging between 10 and 80 inhabitants, which handle most of their own affairs, including building proposals, dispute resolutions and sanctioning new inhabitants under a system of consensus decision-making (Christiania 2005). They also stand in a close relationship with the Christiania-wide community meeting that deals with wider issues of Christiania’s development (for a wider discussion of these structures, see Jarvis 2011; Starecheski 2011). The area meetings are the forum where any construction projects are discussed before they can be implemented, and where ongoing questions are addressed.

From his own experience, Arne (CA12) describes how this tends to happen:

And then we go to talk with the neighbours, this is the idea, and they have like different opinions of the size and concerns about the details, and you listen to them. And then you go to the area meeting... and you make some small drawings or a model or whatever you want ... and you tell them that this is how we plan to extend the house, and the neighbours they agree, and then the area will say that is a good idea and you should do it.

What is important for the experimental discussion here is that the formal structures of the meetings are supplemented by the materiality of the everyday. Luise (CA2) makes a similar point about the conflicts:

There is no real boundary or border between you and your neighbours. So the flipside [of common ownership] is that you just move your flower pots a little bit every day.

Negotiation, then, is an ongoing socio-material processes embedded in the everyday. This is not always as innocuous as moving some flowers. Luise points out that the conflicts can be very serious and lead to real problems between residents, and I came across many stories
involving disagreements about the use of gardens, or the creation of new structures. At times, people directly enrol the materials in their cause: Jochen (CA10) describes how it can be a good approach to “do it first, then see what happens”, as things are much more likely to be accepted if they already exist. At times, disagreements over the space also congeal into larger conflicts which stop new ideas – a shared heating system in one of the areas was never implemented because of individual resistance. This speaks to the lack of final coherence in the assemblage of the Freetown, emphasising the continuously emerging “gaps, fissures and fractures that accompany processes of gathering and dispersing” (Anderson and McFarlane 2011, p.125).

From an experimental perspective, these are the limitations of the experiment as negotiated by the experimental collective. It is not a frame imposed from the outside but worked out through ongoing, day-to-day practice. These processes speak to the self-experimentation of society discussed by Latour (2001) and they reflect the observation-intervention dynamics of collective experiments (Gross 2010a), providing opportunities for social learning, such as alternative problem definitions and the refinement of common approaches (see Brown et al. 2003). Christiania as a wider experiment therefore rests on this balancing and contingent gathering of relations.

The negotiation of the social dynamics that underpins the alternative life of Christiania, and which helps to create a frame of experimentation, depends on both formalised structures and a wider everyday material performance. This includes a particular set of alternative institutions. Institutions have been identified as important anchor points for alternative efforts. As Longhurst (2013, p.2108) argues for alternative milieus, there is a “range of locally embedded countercultural institutions… [that] play an important role in maintaining the ongoing visibility and vibrancy of the alternative milieu”. These institutions take diverse forms, as businesses, groups, networks and even temporary events, and they interrelate to form a wider local place, cluster or atmosphere. In the case of Christiania, certain institutions have developed over 40 years: the building office, the machine hall, the New Forum information office. These institutions are essential in the development of the personal projects, supporting the everyday work and resource practices of the residents and therefore the overall experimentality of the Freetown. One example here is the building office, which takes care of Christiania's infrastructure and provides affordable support for home builders: Hermann’s root zone area was installed by the building office, Arne's house was connected to the sewer system, and Eddie had his water supply fixed and tested. I also indicated the builders’ relationship with the Green Hall, the local second hand trading centre located in a former horse training hall that is now a listed building. It is a wide hall with goods spread over two floors:
various kinds of building materials, furniture and equipment, some new items but mostly recycled (see Figure 4.13). It is a cooperative business with a history that goes back to the very beginnings of Christiania, and which reflects the material practices of the occupied area:

[W]hen Christiania was occupied, [the Green Hall] started by being a place where they collected for recycling – papers, bottles, irons... And then, little by little, they found out ok we could need this and this. There was in this time in Copenhagen a lot of demolition of old houses and they needed a lot of things to rebuild Christiania, like windows, doors, electricity, glass, whatever – really a lot... So a group started picking up demolition things, bring it here and sell it. And this is how it grew. (Ida, CA6)

From the beginning, the Green Hall underpinned the recycling ethic of Christiania, and its existence as a thriving business emphasises the ongoing importance of this practice. It also very concretely features in the constructions of the home builders. Arne and Hermann used it as a source of materials, while Eddie sells some of his own salvaging exploits to them – he still considers it too expensive. Like the building office, the Green Hall supports the materialisation of individual alternatives, and becomes part of Christiania's wider experimental frame.

The visibility of wonky angles

Importantly, many of these institutions are not only inward-looking: as well as supporting local practices, they also allow very unique and specific ways of engaging others in the lived realities and underlying ideas of the Freetown. This directs attention towards the more public-facing elements of Christiania. Longhurst (2013) pointed to the institutions' role in the 'visibility' and
'vibrancy' of alternative milieus, which is reminiscent of the 'visible' and 'useful' urban labs discussed by Evans and Karvonen (2010). While these institutions are primarily a response to the unique pressures faced by alternative sites, they have the potential to reach beyond their boundaries. For Christiania, this is particularly evident for the Green Hall, which has become a wider symbol its values and approaches. Ida, one of the cooperative workers, explains their relationship to the city:

> When we started it was only like strange people or people in Christiania that would do [recycling]. And now it becomes more and more popular... We reacted in that we opened up for Copenhagen. Before it was only for people living here. Then we started advertising, locally. Because we are very special. You can't find a similar shop like this in whole Copenhagen. So we got a lot of new customers from the outside. (Ida, CA6)

The institution of the Green Hall is a key part of Christiania as an alternative space, as it responds to and supports its alternative building practices. At the same it has become a visible and appreciated feature in the wider city of Copenhagen, taking up some of the local alternative dynamics and opening them up to a wider audience. This connects the Freetown's everydayness to a visible public relevance, combining two of the key elements of urban labs and emphasising Christiania's experimentality as well as its alternativeness.

Another institution with a similar dual role is the bath house. Hermann's experimental practices around resources and infrastructures rely on the presence of structures within Christiania that mitigate some of the absences in his own home. His rainwater-fed and solar-powered hose pipe shower, for example, is a workable solution only because he can make use of the bath house during the cold Danish winter. Christiania's bathhouse is one of only two remaining public bath houses in Copenhagen. It is cheap to use at 20 Kronor, and it provides showers and a sauna room. “It is very comfortable”, Hermann says. It attracts a diverse crowd of people: apart from Christianites whose homes lack sanitary facilities, there are other residents and notably many guests from other part of Copenhagen. Some of them at one point lived in Christiania and see the bathhouse as a little reminder of this time. But others come for its unique experience – it is the only mixed bathhouse in Copenhagen, and probably the only one in Europe that allows smoking, and as much as it is a site for health and well-being it is also a social meeting place. Guests spend a long time there, happily chatting or at times fiercely debating in the sauna room. When I visit the sauna myself, people discuss the politics of Christiania's normalisation, Fairtrade products and The Rolling Stones. They quickly include me to talk about my research, English football and German philosophers. The diversity is a micro-reflection of Christiania, but in its openness to the outside, the bathhouse becomes a place of
sharing, of introducing people to some of these unique social dynamics of the Freetown. This differs from other public offers such as the official tours with their well-rehearsed anecdotes, and it perhaps requires a little adventurous spirit. But as much as supporting alternative choices like those of Hermann, it makes these ideas tangible for a wider audience.

This wider visibility and the potential for people outside of Christiania to engage with some of its fundamental ideas is crucial for its role as a wider urban experiment. Christiania is aware of its unique position as a potential learning space that has emerged on a separate trajectory from that of the mainstream city. Underlying its diverse personal experiments and its alternative modes of governance and living is a disavowal of the traditional rules of the city that is grounded in its history of as an occupied space. The initial occupation of the military barracks served an immediate purpose of creating living space, but as a radical act it also extracted Christiania from the legal and regulatory framework of Copenhagen. This opened up possibilities: without the need for permissions, people could start building with recycled materials, conduct experiments with dynamos and wind turbines, and follow their own life choices, like Arne, Eddie and Hermann have done. Alongside the attempts to build a functioning community within this framework, Christiania has also always seen a need to share its experiences. Since the first years of the occupation, the Freetown has been running tours as a way to “show what we were doing” (notes Monika, tour) – to break down prejudices and win wider support. The tours are still available now to be booked, and tourists groups frequently passed the path behind my researcher house during my stay. Led by long term residents, the take in the story of Christiania, guided by many of the self-built structures.

The Freetown also maintains other ways of public sharing: the New Forum information office acts as a point of call for students or journalists, and the Researcher in Residence programme allows artists or researchers like myself to spend up to four weeks in the autonomous town, with support from local coordinator Lars and little amenities like a bicycle. Although the programme is contested within the town, mostly because the cabin takes up valuable living space, many of the more publicly minded Christianites see it as an important way of sharing the way of life in the town, as well as allowing other people to come and bring new ideas and evaluations to the experiment. There is a commitment also to be part of a wider culture of autonomy. This is evidenced by Christiania’s membership in the eco village network even though on first sight Christiania is not a typical eco village:

A lot of the members of the Danish Eco Village network would say this is not an eco village. You have some dimensions which are eco village dimensions.
But it is also a way to say we feel we belong to this family, eco village family, we are kind of committed. (Dietmar, CA9)

Through institutions like the Cultural Association or the Eco Village network, the Freetown maintains exchanges with other sites, such as the artist communities of Ruigoord or Doel, and other eco villages, with regular visits for events (for example, the 2009 Climate Bottom meeting, see Christianias Kulturforening 2010) and shared online activity and promotion. This also occurs on a more personal level. Arne’s house featured in different blogs and publications (Daniels 2012; Keiding 2004), and he himself has worked on projects in eco villages in Sweden, sharing his small-step architecture and his skills in traditional roof construction. Much of Eddie's learning came from workshops in other squats, and his building partner Dean spends his time helping different groups with informal building projects. As Rolf (CA13), another builder comments about the many students that come to talk to him:

I think I would do the same, if I come to a place and there are interesting buildings and some other things, you ask people. You want to find out. And I hope I can give some people some ideas, that would be nice.

This illustrates learning as an explicit part of Christiania's approach, not only practising but actively seeking to develop and share its creative everydayness.

In some ways, Christiania emerges as an urban laboratory here. It is a visible alternative that stands out from the rest of Copenhagen. The buildings, like the homes I described, in their individual aesthetic together combine to a recognisable 'Christiania' style. They are a particular summer cabin architecture with a quirky Christiania angle as Uwe (CA8) from the building office notes:

The wooden houses are typically Danish allotment architecture. Summer houses and so on. But here in Christiania it has gone in a particular direction, with wonky angles and colours and all. That would not be accepted at all in an allotment area. Because they all have their rules.

The Freetown’s boundaries are clearly marked: by the remaining landscape features of the old military area, such as the moats and ramparts, the big entrance gates proclaiming Christiania to lie outside of the EU, or the red barriers to stop cars from entering along some of the small roads. I also described how my own sensory experience set Christiania apart from the rest of Copenhagen, and this is reiterated by visitors and residents. Entering Christiania can give “this moment of -ffff (breathing out)” (visitor, notes 21 March 2012). This suggests Christiania as a city within a city (Iveson 2013), an alternative with its own character. Its autonomy set
Christiania on an alternative trajectory of urban development – with the result of an urban space of wonky angles and bright colours that now appears alternative (see Figure 4.14). But it is not independent of the city – as the normalisation plan, the constant political debates and periodic police interventions show, the Freetown stands in constant relation with the Copenhagen authorities, the Danish government and urban forces of capital and market economy, as well as being linked through a myriad of personal everyday connections, from shopping to work. This makes it a space from which learning appears possible, a truth-spot for alternative living that is a field as much as a lab as it grounds its experimentality in the ever-changing dynamics of its constituent elements (Gieryn 2002).

Figure 4.14: Wonky angles and striking colours

A political experiment in adaptive learning

Christiania stands in a complicated position both within and outside of the mainstream city. This partial separation allows the creation of locally distinct experiments, like the homes and infrastructures, within an atmosphere of experimental everydayness. This makes it a unique space of learning on an individual level, in processes of incremental socio-material building and living. But Christiania is more than a collection of individual efforts, it is assembled as a wider urban experiment through a complex set of social dynamics and institutions which allow, support and at times restrict the diverse trajectories. This opens up wider possibilities of learning and knowledge-making in a political context. What is crucial here is to understand the Freetown not as a deliberately designed experiment: it is continually (re-)assembled through decades of contested practices. Although there is a public dimension and an active visibility, its
experimentality rests on it being a lived and evolving grassroots alternative. This emergent formation results in a distinctive political angle. Christiania has always existed under conditions of high uncertainty. Although now in existence for over 40 years, its future was never guaranteed, as the ongoing court battles, the periods of police raids and the recently imposed building stop show. Yet Christiania’s residents have always created their joint and separate visions despite these threats of eviction and repercussion. Its colourful materiality is shaped by its politics. As Arne (CA12) explains this for his second floor extension:

You also have to see the political aspect of where Christiania was according to the state. You have to consider that it is still occupied area. And at that time, we had made an agreement with the state, and in this area where we live they have accepted that we have the possibility to extend the houses. It is very different where you are.

Other home-builders are less fortunate, as Eddie’s clandestine building under the roof makes clear. When he moves on to the more exposed side of the building, he will try and do as much work as possible from the inside, “prefabricating” the walls so the obvious building phase would be quick and “then no one would notice”.

These precarious and contentious situations are dealt with through action. To stop making new things would be “effectively, suicide” according to Jochen, as it would take away Christiania’s reason for existence—the ability to create something without outside help, on its own terms. Active, and therefore political intervention, are part of its experiment. This is demonstrated by the well-know cases of instant rebuilding of structures torn down by the police: most famously, the Cigar Box house in Midtdyssen (Lund Hansen 2011), and an extension to what is known as the Youth House (Vadestedet). A big sign on the house explains what happened (see Figure 4.15). Dean is now working on the second attempt at this extension, describing the instant response as an example of “Christiania spirit”: by lunchtime after the demolition, the group and various neighbours were working on it again: “It is part of the game, to show the police they cannot just come in and do anything. It is to show the spirit.” (notes Dean 29 March 2012). This reflects one of the fundamental dynamics of experimental knowledge-making, the constitutive role of intervention in real-world, uncertain experiments that is both part of their knowledge creation and their political relevance. In these moments, the complex assemblage of the Freetown stabilises into one communal idea. It reflects observations from other autonomous sites and movements that are based on “heterogeneous affinity” which create “a collectivity, based upon the processing of differences, through symbolic and direct action” (Routledge 1996, p. 404). These stories also speak to Holston’s (1998) notion of insurgent
citizenship, which here is created through an adherence to different rules, a different system of
governance and a different flag, as well as different kinds of action. This creates a resilience
that allows the Freetown to deal with the precarities of its alternativity as well as being an
active site of learning in the city.

Christiania is an alternative of experimental everydayness: an experiment that is grounded in
the everyday practices of a diverse group of people. It is continually assembled from individual
stories that interweave, overlap and often come into conflict. What they have in common is a
dedication to personal freedom in the form of vernacular creativity and resourcefulness that
gives rise to the astonishing self-built homes I described. This is embedded in a complex set of
institutions, values, social structures and practices of negotiation that in various combinations
support and balance the ‘sociological garden’, but which never reduce to a fully coherent unit
with a common goal. This gives rise to exciting experimental possibilities. As Luise (CA2) puts it:
[The Christianites] are just trying to survive... But then again, there are so many charming things growing out of that madness. There is such a bunch of weird things and people here, all kind of wonderful things grow out of it.

These charming emergences are not hidden. Christiania is also public facing, through direct exchange and more subtle offers of sharing its culture. As such, it stands as a learning site, an urban laboratory in the city, one that visibly presents its approach and ideas, including its commitment to action in adverse circumstances. Painter Tore (CA3) summarises it like this:

If we need new ideas to come, if we need new creativity to arise, we need to have pockets of chaos... We do not need insurance everywhere. We have so much afraidness. But if we are giving a free area, we shall not be afraid... Christiania has extremely low afraidness.

Christiania is such a pocket of chaos, willing to take risks and becoming political through its action. It is a space of autonomy; one which provides “freedom with connection – confrontation with proposition” (Pickerill and Chatterton 2006, p.735). Its purpose cannot be reduced to its experimentality, yet in its everyday existence, it emerges as a lived alternative laboratory.
5 Integrating alternative practices: 
The Eco-squat of Can Masdeu

In the previous Chapter, I outlined Christiania as an almost accidental experiment. The Freetown gains its experimentality from the diverse everyday alternatives created by its residents, which are balanced within wider communal structures but which are not deliberately created as experimental efforts. Combined, these alternative aesthetics and practices set it apart from the rest of the city, echoing notions of an urban laboratory. Yet its public dimension is largely demonstrative, presenting its alternative urban model as a challenge or question rather than a suggested path. My second case shows a lot of similar dynamics, but it develops its experimental role more purposefully. The project is the eco-squat of Can Masdeu, an intentional community based in an abandoned hospital on the outskirts of Barcelona. Its efforts of creating a communal vision of resource-conscious, low-impact life has over the years given rise to highly complex and shared practices of living that are recognised and shared as experimental. I introduce this community and its commitment to testing before outlining two of its patterns of practice in greater detail: food-making and the construction of DIY infrastructure solutions. Using these examples, I trace and analyse the processes of integration through which its alternative life is assembled, focusing on its human ecology and its socio-material collectives. This presents the squat as a unique rural-urban site of learning, in which experimental openings are both practised and actively shared.

A group with energy

I arrive at the compound of Can Masdeu on a sunny Saturday lunchtime in March with all the excitement and uncertainty of starting at my first field work site. It is a 15 minute climb up a gravel road from the metro station to the former hospital, situated in the Nou Barris neighbourhood within the Collserola National Park on the outskirts of Barcelona (see Figure 5.1). I am an invited guest, at the eco-squat but I first need to find a way in: there is no response to my knocks in the sprawling compound. After looking around for a while, I find what later turns out to be the bakery kitchen, where three people are busy baking cakes and preparing ingredients for a curry. Kim, an energetic, slight woman with an Essex twang in her English, gives me a warm welcome, and shows me around the house. After the introduction, I
am left alone to figure out what to do next. Because they are the only people I have met so far, I go back to the bakery to join the cooking team:

I spent a short time sorting out my bed, and then went to join people who were preparing the food for the Rurbar [the weekly open day] tomorrow... I figured I needed some way to get to know the place and the people, which is not going to be easy given the general number of visitors they receive, the size of the house and the fact that there are just quite a lot of people here going about their daily business. It was quite good, because they were cooking big things I could actually help out with (although probably was also in the way quite a bit). (research diary, 03 March 2012)

Within an hour of my arrival, I am therefore chopping apples and I get my first introduction to the people and activities in the squat. I work with Mia, a travelling carpenter and long-term guest. Our job is for the Rurbar, she explains, the weekly Sunday open day during which the house welcomes visitors, runs a tour, offers workshops, and serves lunch for up to 150 people. We prepare a vegan meal, and we bake cakes with apples from a local organic orchard to be sold in the bar, with an old radio playing in the background. Joining in with their tasks gives me something concrete to hold on to in an unfamiliar place, and a way to relax into these new surroundings. It is an easy job and a sociable one, and we get used to each others' presence while talking about measurements, bowls and recipes. After I settle in, it also gives me a chance to explore the kitchen and its routines. I begin to notice the rough tiles on the floor, the scarred wooden surfaces of the rebuilt bakery, the wood that is stored outside, and make mental notes of these things. And I pick up scraps of information on how the food works in Can Masdeu – the joint meals, the purchasing, the finance.
What I got to know in these first few hours was an embodied and tactile insight into a set of practices that mark out Can Masdeu as a unique, thriving and internationally known eco squat. Its history began in 2001, when a group of activists occupied the former leper hospital of Can Masdeu to provide space for a meeting for the ‘Rising Tide for Climate Justice’ campaign. At this point, the building had been abandoned for 60 years, with no plans for use by the owners, the Sant Pau hospital Trust Fund. The initial occupation “transformed a derelict space, abandoned for over 50 years, into a rudimentary but functioning social centre” (Cordingley 2004, p.56), hosting over 300 people from various parts of the world for several weeks. Inspired by the first basic repairs and the atmosphere of the building in its tranquil valley location overlooking the city (see Figure 5.2), a number of squatters then started to focus on a longer-term occupation with emphasis on alternative, low-intensity living at the site: “[a]lthough most of our work was focused on the structure of the house, we were already dreaming and conspiring about the potential of the space” (ibid, p.55). This happened in the face of constant threats of eviction, which culminated in a pivotal stand-off between squatters and police in May 2002. Residents countered an attempted forceful eviction by means of passive resistance, using death planks and climbing gear to secure themselves on the walls and roof of the building. Their actions attracted attention, drawing support from around 200 local people and members of the wider squatting scene, as well as the local media (for a captivating description of this incident, see Cattaneo 2008). The eviction failed, largely due to the widespread support for the house, and a subsequent court case in 2005 was not attended by the landowners. Can Masdeu remains in legal limbo, yet the absence of further challenges has given the house some stability and time for consolidation.

Figure 5.2: View of the Can Masdeu compound
Can Masdeu is now home to 25 adult residents and five children, and it considers itself an intentional community – a group of people that have “chosen to live (and sometimes work) together for some common purpose” (Sargisson and Sargent 2004, p.6). It is a varied mix of people: some were students when they joined the squat, others climate activists, others again were looking for a place to live more or less self-sufficiently. This group has been surprisingly stable: eight of the current residents have been there since the beginning and the turnover of people is rather low. It is also a group with a particular dynamic, which has become more prominent over time:

I think as a group, it’s always been a group with energy. Yeah, in the beginning, there was a couple of people living in the house who didn’t have that energy. They smoked spliffs and were sitting around, playing the guitar. And they realised that ok, maybe this house isn’t the best place for us. We’ve realised that we’re different... And those of us that are left tend to be the more active ones. (Kim, CMD4)

My own, immediate involvement with a job is an expression of this active approach – like the residents, any guests and visitors are encouraged to become involved, whether in the housekeeping routines, the gardening or just by washing one’s own dishes during the Sunday open days. The squat is based on a sense of activity that shapes its atmosphere and wider outlook.

**Imagining and testing a different life**

Beyond this ethos of active doing, there are several themes that guide the house and its activities towards a common purpose. At the centre here stands its particular approach towards resources, energy and alternative living, and its self-understanding as an experiment for these things. Resident Laura (CMD1 tour) puts it like this:

The goal [of Can Masdeu] is to think or imagine how our lives could be if we didn’t have such an easy access to energetic resources, like using a car and just going the gas station, or turning on the light. This space is like a laboratory to experiment how things could be done differently.

As a community, Can Masdeu is committed to principles of degrowth, of good living with lower material consumption as a critique of the current economic system. This means combining “collective practices of alternative lifestyles, political motivation and social activism” (Cattaneo and Gavalda 2010, p.582), all of which shape the daily life and physical structures of the squat. This shaping is experimental. On their website, the squatters write about their project:
Experiments abound. Some have set and are part of our daily lives, others still need to be polished. All are inspired by the desire to develop tools and processes that are easy to repair, low in power, and based on cheap recycled consumer components... [But] maybe the tech that really drives us is not tangible, and it is actually a functioning community itself. The collectivisation of resources allows us to optimise and get more performance for less effort. (Can Masdeu 2014)

With these efforts, Can Masdeu understands itself as part of a “rurbano revolution” (Cordingley 2004), the term rurban(o) referring “to the presence of rural features within an urban context, such as agricultural infrastructure at the verge of a city” (Cattaneo and Gavalda 2010, p.582). It is both part of the city and slightly beyond it, creating a complex relationship to urbanity.

This interest in communal (r)urban experimentation is reflected in the key elements of Can Masdeu as a project. The community plays a central role here, as Kim explains when I ask her about the most important aspect of Can Masdeu: “It’s the way of living. For me, living in a community is the best thing.” There is a strong sense of “we” that comes through in all of my conversations and the public tour: the group presents itself as a collectivity when talking about their life choices and practices. At the same time, they emphasise that the communal living is only one part of the wider Can Masdeu project, alongside other efforts that reach beyond the confines of the house and tap into its relations with the city of Barcelona, creating the lively intersections illustrated in Figure 5.3. As the website explains:

Is Can Masdeu a community? Not exactly. Community life in Can Masdeu is only one of the 5 projects that give life to the valley. The others are the assembly of community gardens, the Point Interaction Collserola (PIC), agro-
These projects connect the common concerns of the community, the degrowth and resources-conscious living, to the neighbourhood and city. The community gardens bring together a group of mostly elderly local residents who tend small allotments next to the house gardens. The PIC is the local social centre, based in the public part of the house. It is a focal point for the Sunday open days, with workshops and discussions regarding issues of urban development and the future of the valley of Saint Genis. Finally, different residents are active as environmental educators in schools, and tied into networks of urban gardening and agricultural practises. Together with its international reputation and connection, this makes Can Masdeu an experiment with a relevance beyond its immediate group of residents.

For the purpose of this chapter, my attention will stay largely with the residential community of Can Masdeu, as much of the wider dimensions are grounded in the daily rhythms and concerns of the people that live there. This gives an insight into the formation and emergence of the squat's experimentality and its establishment as “a laboratory of social transformation in which a better life for all is tested” (Can Masdeu information leaflet, own files). My discussion draws inspiration from my immediate involvement in cooking that touched on so many dimensions of communal life. The first example, therefore, are the everyday routines of joint food preparation, a mundane practice that reflects particular resource relationships, communal structures and the intricate integration of different patterns and flows. The second example takes a more material starting point by looking at the creation of sanitary facilities, in particular, one of the compost toilets, taking up the discussion of building practices outlined in the previous chapter. Can Masdeu's experimentality, as I will show, lies in its spatial and social integration of rhythms, routines and practices (see Figure 5.4), which are aligned towards a communal goal of resource-conscious living.
Moving from garden to kitchen to garden: practices of food making

After my initial acquaintance with the bakery kitchen, and the preparations for the Rurbar open day, food remained an important issue throughout my stay in Can Masdeu – perhaps because it is a central concern for the house, too. The following day I returned to the kitchen to help the group in their final preparations, this time chopping an enormous quantity of apples for a salad. Despite a tight schedule and lots to do, the cooks remained relaxed and joyful: “We had the music playing again. Kim and Mia are both excellent singers, and sometimes they would stop their jobs, drumming rhythms with spoons and hands, dancing around the kitchen.” (research diary, 04 March 2012). We then served our veggie-coconut curry to the 120 guests that came for the day, to join the tour or one of several workshops. Visitors and residents mingled, sitting on tables and stone steps, and we just about managed to feed everyone.

The Rurbar lunch is not the only public meal that requires managing in Can Masdeu. Normal lunch and dinner are prepared for the rest of the house by one or two residents at a time, and this is organised through a schedule in the kitchen that puts everyone on duty about twice a month. This is a core institution of Can Masdeu’s communal life, and as Laura jokes, “[i]t’s great
because they ring a bell when it's ready and you don't have to think every day what you're going to eat.” Ingredients are bought in bulk from organic suppliers and local farms, and most vegetables are grown in the extensive gardens in the grounds – except for onions and potatoes, which take too much space. Guests are encouraged to help out with the communal food preparation, and after hanging around in the kitchen one evening, I join Jamie in his cooking duties:

We went down to the garden to get vegetables for dinner. So this is one way how resources work here – Jamie said he had no idea what to cook, then said let's collect things from the garden so we did and we came back with this big bag full of leaves, and some cauliflower heads. I guess at some point in the process he must have decided to cook a stir fry... He then went to toss out the compost in the middle of cooking – which really means tossing. They have a gap in the fence on the upper terrace, and below, maybe 3 metres down, is the compost – and you just pour it down. (research diary, 05 March 2012)

Although we have a little disagreement about the recipe, we make a decent stir-fry, and sit with the other residents for an enjoyable dinner.

This example brings together many of the unique routines and unusual structures of Can Masdeu, which mark out the hidden dimensions of experimentation in the everyday life of the house. 'Cooking' is more than just cooking, as Laura (CMD1 tour) explains:

Cooking is also work. You have to go down to the garden, pick what you need, come back up and cook. They are very basic dishes: rice, cereals, greens, salads, sometimes there's also soup. The person who cooks has to clean up, the pots and pans, and the kitchen, sweeping and mopping.

The dishes might be basic, but they are creative: we have sushi, pasta and lentil soup, pickled olives and artichokes, and there is always fresh bread and local olive oil – although people joke that cooking skills clearly vary between residents. The joint meals are the outcome of a wider set of practices that diverges from what food-making looks like in a mainstream setting. It is an assemblage of specific social structures and rules, the infrastructural set-up of the house and the embodied enactment of various patterns. This creates an alternative practice of cooking, which is aligned with the resource-consciousness and communal focus of the squat. While in some ways mundane and unremarkable, it also becomes part of the experimental dimensions that are tested and trialled.

The communal cooking practice is a result of the joint vision that informs life in Can Masdeu, of a focus on both community and resources efficiency. Jamie (CMD2) gives his perspective on
Big companies are trying to cultivate individuality to make us buy more. Communal living is much more efficient – it just makes sense to share resources and tasks, and you save time.

But how this vision is realised, how shared cooking is arranged between 25 residents, is another question. Can Masdeu’s food-making routine and its organisational schedule developed alongside other social structures over the ten years of its existence. As Laura (CMD1 tour) describes:

During all those years we have been experimenting, we tried to make the work as equal as possible. To organise things equally and distribute the work, we have tools. One of them is the calendar in the kitchen, where we have how many people are in the house, if there are guests … and who works in the kitchen.

Things did not always go smoothly in the beginning – cooking was often done by the same people, and it took a long time to get into a routine of ordering ingredients, as Laura and Kim tell me. Now, however, it is a central part of the communal life with weekly deliveries of staples from an organic wholesale distributor in a nearby district. Additional ingredients need to be added to the list the week before. The money for the common purchases comes from the monthly contribution of the residents and guests: residents pay 50 Euro per month – although this contribution can be negotiated if someone struggles. Lunch is often a quick affair in the kitchen with left-overs from the previous night, but for the dinner, the residents and guests sit together in the central room, chat about their days as well as catching up with issues in the house.

Cooking in Can Masdeu is not only unusual as one needs to prepare 20 plus meals with pre-ordered ingredients. It also involves a unique combination of spaces and infrastructures (see Figures 5.5, 5.6 and 5.7). Besides the kitchen, which is a spacious bright room in the house, a key element here is the extensive garden that lies beneath the main house. It is the source of most of the house’s fresh vegetables. During my visit in March, the seasonal produce included cabbages, cauliflower, Asian salad leaves and Swiss chard. Generally the availability of vegetables in the garden determines what there will be for dinner, with a board listing what can be harvested. It is also the destination of any waste products – there is no bin in the kitchen, scraps and peels are collected in a bucket and thrown straight down a gap in the fence. The history of the gardens goes back long before the start of the occupation. The original
hospital used to have its own gardens, but these were overgrown when the squatters occupied the compound: “None of the gardens were there. The land was there but it was all completely covered in brambles. So we went about opening it up bit by bit.” (Kim, CMD4). Now, a significant amount of the communal work goes into maintaining them: every Thursday is a garden working day, which is a compulsory part of communal life for Can Masdeu. It is a public day too, visitors are invited to help and share lunch, and many of the local community gardeners tend their own allotments at the same time. The invitation for others to help is a response to Can Masdeu's desire to share its ideas and practices, to give people an experience of this way of living, but also, quite pragmatically, to get help for the never-ending gardening tasks, as Juan puts it.

Figure 5.5: Spaces of food making I: the gardens

Figure 5.6: Spaces of food making II: the kitchen

Figure 5.7: Spaces of food making III: the compost area
During one of the gardening days, I help Theo shift the compost – an elaborate routine that includes mixing the newest compost waste with an older pile, adding horse manure and straw in layers before watering it. I am reminded of my earlier cooking experience: at one point, one resident empties the kitchen compost bucket – this time I am on the receiving end, the wind blows onion peels at my face and I experience the cycle of resources in a rather direct way. While we work, Theo (CMD5) explains that the compost system is Can Masdeu's solution to its specific requirements:

It is also adapted. In most books they explain how to make a good compost heap. When you have all the materials and then you do a compost heap, and then you move it a couple of times but you don't add more material. But we are producing so much kitchen waste, we cannot start a new compost heap every week. We let it continue. We mix the old with the new. And it works.

The adapted compost here becomes part of the cooking practices in the house: it is not an isolated feature of the garden, nor is it an experiment for its own sake. It fits with the wider pattern of practice, aimed towards the careful use of energy and resources, in which each step is connected and performed by residents in a shared way.

These social and spatial dimensions of Can Masdeu’s joint food routine – the organisational tools and rules, shared labour and the spaces of kitchen and garden, are linked by a distinctive embodied performance. They all rely on a physicality that is unusual and often underestimated, as Theo (CMD5) describes:

You know, also one thing here and in other projects is that we tend to underestimate the physical aspects. We are not used to doing physical jobs, and we don't do it every day. But then there is like one day in the week and we are like, ah yeah, and then ouch, lots of cramps and stuff. Like with other activities people take it seriously, like when they want to climb or whatever, they will train every day. But with gardening, we all think we can do it. And not only gardening. Here we have to carry 25kg bags of flour or wood, big pots, things like that.

Performing these routines is not a seamless outcome of rules and values, it requires an adaptation also of the body, both in terms of building up strength and skills. As a newcomer, I am poignantly aware of this: I offer to help unload the van one evening after new ingredients are purchased, and I struggle with a 20kg bag of rice, which Jamie almost casually lifts on his back. Another such occasion is the bread-making: once a week, a group bakes bread to supply the house as well as a local bakery. I join Leandro in making 38 loaves over half a day, a physically demanding task that requires strength and skill as well as being embedded in wider routines:
First mixing the dough, 2 bowls, over 18 kg each. It was seriously hard work but also something very calming and enjoyable, sticking your hands into a soft warm sticky dough. I don't think I quite had the technique, mine didn't rise that much in the end... [For the fire] we went out to get wood (the wood that Jamie and I had brought up a few days ago – nice to see its use as well). You have to heat the oven, then the coals get taken out and the bread bakes on its own. Again it is hard work, in the smoke and heat, with an intense smell of pinewood and dirt on our faces. (research diary, 09 March 2012)

Figure 5.8 shows a glimpse of these embodied efforts as an integral part of food making routines. Like social rules and spaces, it too requires development and adaptation, becoming part of the experimental assemblage of Can Masdeu's unique practices.

Figure 5.8: Heat, smoke and bread

At first glance, the example of food preparation seems mundane – an activity that features in every home in different ways. But it is because of its everdayness that the unique practices of Can Masdeu stand out here. Preparing dinner is a practice that is tied into the particular social and work arrangements of the community, it responds to the infrastructural set-ups and spaces, and it requires an adapted and skilled body. These diverse elements are connected and directed by the communal values and patterns of the squat. They are a closely entangled assemblage of elements that work together, affect each other, and ultimately, they produce a tasty stir-fry as well as a communal routine. Without being explicit, its experimentality emerges from this interplay of dynamics.
'Squat tech' and colourful DIY: constructing a compost toilet

Practices of cooking and baking in Can Masdeu spread across spaces, times and people as integrated communal efforts. They also rely on a number of material set-ups and infrastructures rebuilt by the squatters. While we make the bread, Leandro (CMD7) explains this for the bakery:

A friend of ours came here early on. This [bakery] was without the roof, without the windows, weeds all around. He just – wah, he knocked everything down. And he made the base [of the oven], and supported it with two woods. This stopped it from falling down. And then he started building, recycling the bricks.

Much of the house was in a similar state of disrepair and dilapidation, as Kim (CMD4) recalls from her first visits:

Yeah, my first memory was dust. Dust and rubble. And I'm really sensitive to dust so I was just sneezing the whole time... You know, the roof was in a really bad state. We had to re-roof a lot of the parts of the house. And we've torn down walls and built others. The bakery for example, that was just a ruin, we completely had to build that up from nothing.

The early years were characterised by extensive building efforts, and the urgent need to make the house liveable gave rise to a number of unusual and creative solutions that still define the house. These need to be considered as part of the existing practices.

One issue that required immediate attention was the water supply and sanitation. These infrastructures had once been present, as “[e]vidence of an ancient dilapidated irrigation system was all over the land and the building was full of tubes and pipes, even a broken toilet” (Cordingley 2004, p.55). The task for the initial squatters was to re-instate these facilities, in particular reconnecting a water mine 100m above the house. Cordingley (ibid, p.56) describes this effort as an example of “squat tech”:

A great aspect of squatting old buildings is the mixture of archaeology and innovation needed to make a space usable. Somewhere between low tech and no tech is squat tech. Squat tech is assessing available resources, appreciating that most of them are broken or in disrepair, and dismantling existing items in order to use their parts for more urgent functions. In this case, through an interesting process of old community knowledge, archaeology, and squat tech innovation, we managed to get one of the water mines to feed into a spring in the gardens near the house.
This effort still forms part of the current water supply, now supplemented with a well, and a pool to collect winter rainfall for irrigation (see Cattaneo 2008). An early installation was the beautiful outdoor shower with DIY thermal solar panels made from old radiators, which provides the most spectacular view down the valley of Saint Genis towards Barcelona (see Figure 5.9). A second, in-door shower works with a hot water boiler which is fired up every 3 to 4 days, and the kitchen taps are served by solar panels on the roof. The house is not, however, connected to any sewer system. Grey water is led out onto the shrub-covered hillslope, and from the first year of the occupation, the house made use of dry toilets. Now, there are three separate compost toilets plus a squat urinal in the compound. The DIY aesthetic of many of these structures contributes to Can Masdeu’s charming style, but their presence also points to a deeper integration of infrastructure and alternative living.

Yet getting the story of these constructions, and understanding how the material development of the compound ties into the emergence of specific infrastructural practices, can be difficult. Once structures have been built and entered into general use, it becomes hard to trace their creation. I am lucky during my stay: Mia, who I first meet baking apple cake, was the project leader for one of the compost toilets, and she is happy to tell me about its construction. It is a colourful feature in the upper, public part of the Can Masdeu compound, a small wooden construction which seems at once shambolic and carefully crafted, with a mix of natural wood colours and bright wall parts that upon closer inspection turn out to be old doors. On the side,
a set of beautiful steps complete with a railing lead up to the door, with a ceramic sink integrated alongside. A hand-drawn sign on the roof identifies the structure as a ‘letrina seca’ (dry toilet, see Figure 5.10). The interior is made of wooden beams and joints, with a heart-shaped lid covering the chamber that is not currently in use – a reference to the ubiquitous heart symbol on old-fashioned toilets. A window with curtains overlooks a hillslope, and the walls are decorated with dried flowers. Several hand-drawn sketches explain how to use the toilet, especially the need for the saw dust, and how the composting process works. Like many of the other alternative infrastructures – the irrigation pool, the now defunct bicycle washing machine, and the solar cooker, the toilet features on the open day tour. But more than an exhibit, it is also an everyday aspect of Can Masdeu’s life, and in daily use by residents and visitors.

Figure 5.10: Letrina Seca

Mia's description of the building process brings out the toilet as an example of ‘squat tech’, the mix of improvised community knowledge and recycled materials that helps squatters to create urgently needed solutions. It also shows construction as a communal practice similar to that of cooking, emphasising the integrated nature of Can Masdeu’s communal life. Mia’s letrina seca
was built in response to a lack of facilities in the public part of the house, which only had one old pit latrine for up to 200 visitors. A trained carpenter, she was asked to take on the project during a visit to Can Masdeu, on the basis of her connections:

This one [the toilet lower down] was created by two travelling carpenters... And with those two I had built a compost toilet in the Pyrenees. And then when I came here to visit we had a chat and... 'Oh yeah, cool, those people, and you already built a compost toilet, oh yeah, well we'd need a compost toilet up there.' And then I thought ok, then I'll come back in the winter. (Mia, CMD6)

One distinctive dimension of squat tech building is the mix of a diverse set of knowledges and expertise. For the constructions, Mia assembled a team consisting of two of her friends, a guest to the house, and a permanent resident, who brought their individual skills: two were carpenters, one had experience with glass and window work, and all had been involved in various squat and DIY building projects. The existing toilets served as models for their construction, with added ideas from Mia's extensive experience: she copied the brick base from a previous effort in Germany, and adapted the external air pipes from the construction in the Pyrenees. The other squat tech aspect concerns the materials, which were all recycled or salvaged in some form, starting with what could be found in Can Masdeu's own storage area. This produced the various boards and planks, but also more unusual items like the coloured doors, old signs and windows, which all became part of the outer walls. Other materials, such as the steel core boards that form the basic shell, and the bricks for the foundation, were picked up from construction site dumps. The steps leading up to the toilet were made of local wood, and the railing came from a children's climbing frame. Much of the project then involved bringing these diverse elements of know-how and material into interaction.

Mia's description gives an indication of how this alignment of materials and skills emerged from the group's communal effort:

_int:_ Do you enjoy working in a team with five people like this? You say it can be pretty stressful?

_Mia:_ Yeah it can be stressful. I think it depends on the day, what you have to do at the time. There are days when you just have to prise apart some boards, and then you can take turns, that's the good thing. But you always have to clean everything up to protect your tools. That's something you also need to get into everyone's head, that you can't just go over a concrete-covered vertical board with a hand chain saw, because then the blade gets messed up and you have to buy a new blade, which costs money and really isn't cheap. It would then probably be cheaper to buy new wood, or ready-made wood. You
always have to organise yourself, which is the problem when working in groups. Especially when half of the people don’t yet know how it works. That’s why we turned some parts into a workshop, like how to make the wood joints. Three of us prepared it, and then did the workshop and others joined in.

Her description touches on many aspects of the construction process, and it indicates the close interaction of materials and builders. In some ways the group dynamics helped the construction progress: the group was able to mitigate some of the peculiarities of the recycled material by sharing work. Pointing to one part of the wall construction, Mia says:

These are scaffolding boards that we took apart. That was a totally shit task, because we needed a different measurement and they were three times as wide. But there were five of us, so we decided we can also make it look nice.

This required a negotiation of practices, approaches and knowledges. The materials played an active role here: boards covered in concrete demand a response from builders, but they also allow a materially grounded negotiation of work practices to take place. In other cases, they drive the construction and offer opportunities for learning:

To recycle [nails and screws] can be the most annoying thing that can happen to you. In the lower part we screwed everything in, and you really have to switch the drill head every five minutes because you have a different kind of screw. So you’re sitting in front of this box of recycled screws, and that’s great, we did also use a lot of them, but at some point like – pfft! So here we used timber joints, classical timber joints.

But since not everyone had the skills to make them, the builders turned this part into a workshop, with Mia teaching the team three different types of timber joint (see Figure 5.11 for one elaborate version), all of which found use in the toilet. The group dynamic helped mitigate the problems of recycled screws, but it also fostered the possibility of joint learning.

Figure 5.11: Material intervention: heart-shaped timber joint made during workshop
This communal squat tech building routine expands the idea of small-step architecture which I discussed for Christiania, by suggesting a more explicit focus on shared efforts and learning in conjunction with materials. It also reaches beyond the immediate building site. The workshop on timber joints was not only a step in the construction – it became an open workshop for one of the public Sundays, with visitors joining in. Sourcing materials was also a shared task. When I ask how they got the materials from the construction site dump, Mia says: “I wasn’t part of that. A group from the house did that. They also have contacts to garbage dumps.” Resident Pedro later explains how the house follows up tip-offs from other communities, and a couple of people tend to scout for usable things during street collection days, sometimes for a specific purpose, at other times for future use of the community. The group then transports the material, either by bike or using the shared van. Like cooking or gardening, recycling thereby becomes part of the communal work flow. There is also a sense of appreciation of the building work that pervades the wider community. Everyone seemed pleased with the toilet, Mia recounts, and the community celebrated its development and completion:

We had a roofing ceremony when the construction was up... We taught everyone a German song, and people were singing it and someone played the trumpet. And on the day we finished, we also had a bonfire here.

People from the house would come and congratulate the group on the progress in the evenings, and some took a deep interest in the specifics of the construction, asking about the airflow process and materials.

Although successful in its construction, the structure did not immediately become a solution to Can Masdeu’s particular sanitation requirements. For that, it needed to become immersed in a wider set of use practices, which differ from the routines generally associated with a toilet. Unlike a water closet, a compost toilet needs emptying, which can be an unpleasant task as Mia describes, especially if the composting process did not fully complete. Her construction has not been emptied yet, but one chamber is already full and currently being left to compost. It also requires care with cleaning: “[Normal toilets] are cleaned with disinfectants. Obviously you can’t do that here. We clean with vinegar sometimes if it is necessary. But it’s not that good for the compost.” But most importantly, it requires an understanding of how it works, and an adjustment of practices in response. I note that people use chamber pots for the night, which initially strikes me as odd but makes sense given the pitch black path to the toilet at night. I also found myself rather confused by the presence of the sieve above a funnel that turned out to be the urine separator. This is a general problem, Mia complains:
It’s a shame that people [on the open days] do not know how to use it. Even though we put so many pictures in there, the people still throw lots of wood shavings into the sieve of the urine separator. Or toilet paper. And every time I use the toilet here on a Sunday I clean it and I think how can you be so stupid to miss that? There are such clear pictures in there now that, in my opinion, you really can’t use it wrongly.

Underlying the use of the toilet, including the instructions in Figure 5.12, is a shift in understanding of human waste and general body practices. The residents are very open and matter of fact in this regard, not unlike Hermann’s detailed descriptions in Christiania, but this is not always shared by visitors, as Laura indicates: “When we have the environmental education visits, especially with the high schools, they are nauseated. We have a trauma with faeces and that kind of thing.” This goes further towards putting behaviours into the wider context of ecological processes and resource use. The material from the toilet could be used as compost, but only if it contains no medicines or drugs, which cannot be guaranteed here. Can Masdeu therefore does not use the compost in the garden, but in theory, the toilet could be added to the landscape of practices I started to trace with the cooking. This taps into underlying values of systems thinking in the squat, which are not only talked about by residents in local schools, but which are directly practised.

Figure 5.12: Instructions for using the toilet
The letrina seca is an example of the unusual infrastructural solutions in Can Masdeu that feature on its tours as well as daily life. It is a case of squat tech – of low resource, low technology construction that uses recycled materials and a mix of improvisation and community knowledge to address urgent needs of living. What stood out in its construction process is the strong integration of each step into the communal ideas and efforts of the house, and the appreciation of materials that echoed the recycled building in Christiania. In its use, the compost toilet also expresses some of the fundamental values of the squat, bringing together social and material dimensions towards an integrated set of experimental practices and outcomes.

**A creative experiment in human ecology**

Cooking joint dinners and constructing DIY infrastructure are two examples of the practices that cast the Can Masdeu community as a testbed of alternative living. These activities are mundane aspects of daily life that facilitate the existence of the squat – they deal with basic infrastructural issues and social needs in the unique context of the old occupied hospital, making it a permanent residence and home rather than a temporary meeting place. But they also offer a relevant alternative approach to resource-conscious, sustainable living – an example of what has been called “actually existing sustainabilities” (Krueger and Agyeman 2005), actual local practices that offer exciting and challenging ideas independent of formal sustainability initiatives or agendas. What makes these practices interesting for the current discussion, and what links them to Can Masdeu’s self-understanding as a laboratory for low-impact living is that they are unique, emergent and contingent responses to these existing demands – not deliberately designed or imposed interventions and solutions. Both the cooking and building stories show the complexity and integration of elements at work here: the different spaces, people, materials and skills that need to come together to practice urban life differently. Food-making does not just take place in the kitchen, it enrolls the garden, the compost, wider efforts of planning and placing orders in an integrated pattern, which all require their own sets of routines and abilities. Mia’s compost toilet similarly combined the use of stubborn materials with a diverse set of expertise, highlighting the slow process of skill development involved in the squat’s creative responses. As before, the question then becomes how Can Masdeu assembles these experimental practices with relevance beyond this tight community.

Similar to Christiania, Can Masdeu can be understood as an example of 'experimental
everydayness', with experimentation rooted in mundane, lived practices. Can Masdeu as a project, a home and ultimately, an experimental space, is a creative response to specific needs, drawing on the resourcefulness of vernacular creativity (see Edensor et al. 2010). Kim (CMD4) sees creativity as a key aspect of their life:

With the building jobs around the house, there is always a certain element of creativity there. For example, the new bathroom, you know it's got the beautiful mosaic and the nice painting. The practical jobs can always be done in a creative way as well.

Can Masdeu leaves wide openings for personal creativity in its communal projects, where fixing the bathroom also invites a painting and where the compost toilet builders show their craft through wooden decorations. Creativity also underlies the practical jobs themselves in what I described as 'squat tech' – ingenious solutions to fundamental infrastructural and material problems using recycled materials, local knowledge and DIY tinkering. This extends to its social dimensions, as long-term resident Juan (CMD5) explains:

All the things that we do here, you need to be creative. With everything. You know, most things were – when we started the house was abandoned. And we had to make things again, and also new things. And also as a group, when we have a conflict we have to be creative to resolve it.

This description calls up a fundamental creativity of daily life that is reminiscent of the 'coping' and living life 'artistically' of Christiania, as both alternatives need to navigate individual and communal freedoms (see Pickerill and Chatterton 2006). The residents of Can Masdeu see their choice of living in a communal squat community as an expression of their own freedom and self-determination. As Jamie puts it: “[y]ou can be much more of an individual in a community like this. In normal life, individuality is always defined through clothes, or possessions or whatever”. But as a project of much smaller size and with a greater emphasis on a shared purpose, this everyday creativity manifests itself differently in Can Masdeu, through the integration of values and patterns that includes human and non-human elements. The squat is neither a social, nor an environmental alternative alone, but a human ecology, as Leandro observes: “[w]e all live together as a sustainability project, but from the point of view of the human ecology. It is a human ecological project.” The ecology metaphor highlights the intertwining of more-than-human relations as illustrated in Figure 5.13, the emergence of which is a fundamental dynamic of Can Masdeu's experimental assemblage.
One of the defining conditions of Can Masdeu’s experimental practices of living is the rejection, or disavowal, of official rules and regulations that results from its status as a squat outside of codified regulation. As Leandro (CMD7) suggests:

Maybe this is relevant for the creativity or something like this. [In a squat] you just need a bit of time to start something. Because it's unofficial, you don't need any – you don’t need any finance or permissions. Just – boom. [moves his hands to show explosion].

The absence of regulation matters for how daily life is practised: there are no hygiene inspections and no permissions for selling food and drink. The toilet is not tested to any industry standards, the house takes some of its electricity from a DIY hook-up to the main line, and the safety measures for a roof tiling job I helped out with during my stay simply consisted of the warning “Don’t walk on the edge!”. Like in Christiania, this sets the squat on an
alternative trajectory. During a chat while cleaning the bakery, my cleaning partner Theo (CMD3) expressed a similar view, stating that “autonomy is the key to creative sustainability”: doing something really novel works by “not paying taxes” and “not following rules”. This can be understood as the possibility of breaking established frames and testing different configurations in real life that could only be set up in highly managed test settings elsewhere, such as the fully functional but sealed replica houses used to examine energy saving technology (Evans forthcoming). But as well as an outright rejection of, and resistance to, established rules, this autonomy can also be understood as an emergent adjustment of a particular living assemblage. A lot of things need to happen within that ‘boom’ that Leandro so vividly expresses: new ideas and patterns do not simply appear, they need to be formed and established. They are not ahistorical or disconnected from other developments – the practices of the squatters emerge from existing relations, including infrastructures, skills and social networks. The previous discussion of food making and compost toilet construction outlined some of these connections: the slow reclaiming of the old gardens, the reconstruction of the previous bakery, the established networks of material exchange and recycling for building jobs. This casts autonomy not as one side of a dichotomy but as one of many unstable relations in an assemblage, one that introduces productive gaps and fissures (Anderson and McFarlane 2011).

Creating a partly self-sufficient community home on squat tech infrastructure is not just a matter of absent rules; it requires the presence and evolution of an alternative set of relations and engagements to add to existing ones. It is on this integration that Can Masdeu’s experimentality rests.

After talking about the rejection of rules as a key point of experimentation, Theo immediately qualifies his own assessment by pointing to the things needed to replace them. A lack of formal rules requires a much greater emphasis on personal and collective responsibility, and it calls for hard work and a willingness to learn. There has to exist an intrinsic motivation among the community to take up the challenges and demands of autonomous, low-resource living:

A problem is finding motivation. People are so used to being given marks or money for what they do. Here, people need to be willing to get things done and learn things on their own. (Theo CMD3)

This motivation derives from varied personal sources for the residents: individual activist commitments and desires for a simpler life, past experiences of communal living and the hope to make the world a better place. But it is not an exclusively social issue; it includes a particular understanding of the non-human world. One of the shared orientations that underpins the
efforts of the squat is a dedication to recycling, as Kim (CMD4) describes:

Some things just go without saying. You know, some things are just really obvious like we try and use organic things and local materials when we can. We try and promote them and show new uses for them. And yeah, the whole reuse, recycle sort of things – they form a part of everybody's philosophy.

Recycling already emerged as a key dynamic of the individual projects of Christiania, but whereas it was one choice amongst many in the Freetown, it forms a central common understanding in Can Masdeu. It is internalised in many small daily actions: inspecting empty jam jars for future use as a cup, saving chai spices for a second brew or fixing a broken cake mixer with a twig from outside. But it is also integral to the creation of remarkable structures and architectures like the compost toilet. Similar to home-builder Eddie's comment of 'seeing value in things', this recycling philosophy is an expression of a particular relation to the non-human world. This is more than an extension of care towards the material environment as anthropocentric environmental ethics suggest (see for example Norton 1984). The non-human world forms an integral part of Can Masdeu's lived practices as part of hybrid relations, directing efforts as much as being directed to a particular end. This speaks to the enchanted materialism developed by Jane Bennett (2001, 2010) as a view of the world in which material objects are not inert but have their own life force, thing-power or material vitality. Writing of debris she accidentally found in a storm drain, Bennett (2010, p.4) talks of a glove, a bottle cap and a dead rat as “stuff that commanded attention in its own right, as existents in excess of their association with human meanings”. This suggests the possibility of such objects being affective agents and it demands a recognition of a vibrant material world. Ethical relations, Bennett (2001, p.162) argues, “can be enhanced by an onto-picture of a vibrant, quirky, and overflowing material world”. Such an appreciation underpins and motivates the complex practices of the squat, the harvesting and composting in the garden as well as Mia’s engagement with the wooden boards of her construction.

Such socio-material relations that (re-)assemble life in the old hospital do not form suddenly. They are based on what Watson and Shove (2008) describe as the formation of competence, referring to “the skills implied in the use, integration and desiring of items required for the effective accomplishment and performance of daily life” (ibid, p.71). It is a concept arising from the notions of practice theory that has been applied most frequently to construction and craft projects, but which also pertains to a wider notion of 'doing' daily life. The key idea is that the practitioner should not be seen as the privileged agent within complex practices and their creativity. Competence “is perhaps better understood as something that is in effect distributed
between practitioners and the tools and materials they use” (ibid, p.77), a reciprocal engagement with materials and tasks that takes place through the body and a sensory, experiential relation to the world (see Ingold 2006b; Sennett 2008). This is evident from Mia’s description of the distributed process of toilet building, where builders slowly responded to the demands of materials and tools, jointly shaping the structure in the process. It also sets the cooks and the bakers into a wider assemblage of elements involving bowls and pans, vegetable harvest and bodily strength, which together form a reliable, skilful practice over time. This formation of competence therefore extends beyond particular projects or skill accomplishments, towards the wider integration of social and material patterns in the squat, echoing the emergence of the alternative experiment as a changing assemblage.

Such formations of competence (such as the roof tiling shown in Figure 5.14) are precarious and fragile within the assemblage of alternative living, as they are subject to the pressures of strenuous work, urgent needs and the threat of eviction that can easily disrupt or overwhelm them. As Pickerill and Maxey (2009b, p.1534) observe for low impact developments:

LID can be very hard work, living off little money, in an increasingly challenging climate. Without care, people burn-out and struggle, but the tasks are eased through communal infrastructure and shared responsibility.
Navigating these challenges requires some careful ongoing work. Over the past ten years, the community has developed a surprisingly well-organised schedule of work days and rules to deal with the mundane tasks of repair and maintenance, of cleaning and gardening. The “MLO” (“Mantenimiento, limpiar y ordenar” – maintenance, cleaning and tidying) house working day on Tuesdays covers the general house keeping, like cleaning kitchens and common rooms, preparing wood for the bakery oven, or doing minor repairs. Thursdays are gardening days, and every week a different team prepares food and runs the Rurbar for the Sunday open day. There are rules in place to manage the presence of guests, the finance and the use of the shared van. Underlying all of this is the bi-weekly asamblea (assembly), in which decisions regarding the community are taken. These structures support the demanding practices like food-making and building. But they too are the outcome of slow processes of trying and adapting, an integration with the social and material demands that are not static but evolving, as Kim (CMD4) describes:

In the beginning, in my memory [the work] was kind of constant. There were always things to be done... And then I remember the meeting when somebody suggested – why don't we do one day a week and we call it work day. And we – huh, one day? And then, well let's try it. That's the attitude generally taken in the house. When there is something proposed that we are not quite sure about, then we say let's give it a try. And then we have a period – it can be a month, 3 months, 6 months, you know, trial period. And this, for the work day, it worked fantastically. It was a big hit, success.

The social structures, therefore, appear contingent and responsive to changing demands.

The importance of an adaptive and reflexive framework becomes clear when these rules are set into the wider context of ongoing projects and constantly changing pressures and requirements. The structures help create a sense of appreciation and mutual support among the group that makes the demanding practices of low-resource living possible. Leandro (CMD7) gives an example, referring to the work on an extension of the house that was under way during my stay:

It is not really a problem if you skip one day of work, but if you are not compensating for it, then... There is not something like that you have less rights because you didn’t come so many days. It’s like a common understanding... [Writing down people’s names] is kind of a deterrent for people to not come... But people then can also say I can’t come that many days, please understand me, and try to compensate. Pedro for example is working a lot on that roof. It is a house project so... It takes him so long to do that, so it doesn’t really matter if he is not down in the garden on Thursdays.

This negotiation is based on a particular outlook on work Leandro calls “creative leisure time”:
the joining of productive and leisure time by investing one’s energies creatively, not by taking a job but by working directly with resources to satisfy one’s needs. The development and application of what might be called the social rules of the squat are therefore fundamentally tied to the material practices – the building projects, but also the different responsibilities residents take for jobs such as gardening, repair work or bicycle maintenance. In turn, this allows the slow formation of more-than-human competencies, of the relations that underlie the integrated alternative, experimental practices. Importantly, these efforts also have an emotional dimension:

What we’ve realised after a few years of living together and working together was that, we’re dedicating all this time to working but actually the communication side, the emotional side and the playfulness we’re actually neglecting a little bit. (Kim, CMD4)

An outcome of this realisation is an internal event called “Va por nosotros”, during which the house comes together for three days each year to check-in with each other, review its internal responsibilities, make plans but also celebrate and play, in isolation from visitors or guests. Several residents describe this as an essential part of the house and the communal, human-ecological dimension. It reflects the complex emotional demands of alternative or activist living (Brown and Pickerill 2009), but also the more conceptual recognition of emotions as related to affective engagements with a more-than-human world (Pile 2010).

These social patterns are not fixed structures that frame the squat in a static way. They are part of the ongoing assembling of Can Masdeu, subject to continuous adjustment and change. But they help create a sense of responsibility, one of the cornerstones of autonomy as Theo suggested. If something happened to either the residents or the guests, for example during the bread making or the social centre dinners, he points out, it would be really problematic as there is no licence or insurance. These issues need to be actively addressed. The house seeks help with risky projects or questions about the safety of the buildings as Laura describes: “When the first squatters moved in they talked to the people from Architects Without Borders; the structure was fine, though in the process of deterioration.” Local crafts people, such as a retired builder from the community garden group, come and help: he assessed the extension and the roof we were tiling during my stay. To some extent, doing such checks is simple pragmatism. Building mistakes are costly in terms of time and resources and can be hard to correct. But it also expresses a wider approach of taking responsibility for what happens in the project. The squatters took their own precautions to test the water after their squat tech reopening of the water mine:
The water for drinking, for the showers and for washing comes from the mine. It’s not chlorinated, so it’s not supposed to be safe for drinking, but it comes from the mountain. We tested it for heavy metals, but there are none. (Laura, CMD1 tour)

This rejects external codification in favour of a direct, grounded exploration of the relationship between people and materials in very specific circumstances, facilitated by the shared material ethic among the squatters. In Christiania, I described the process of experimental assembling as a balancing of different trajectories. Here, it is more an integration that extends some of the individual efforts of the Freetown into a shared set of alternative practices.

**Experimental openings**

This alignment of materials, principles and structures through the slow formation of competence operates as a subtle protocol of experimentation (Latour 2001), a situated negotiation of different actors and their trajectories. Their assemblage facilitates the emergence of the complex, integrated practices such as food preparation and squat tech building that make Can Masdeu an alternative experiment. Not all of these involve the whole community: there are personal projects such as the mud and straw hut that is now a living quarter, or efforts based on particular interests, such as the “herbolatory” in the former chapel which is used to prepare medicinal plants. The dynamics of the community allow and support these efforts, integrating them into the wider shared work patterns, but also restricting them when necessary. Over the years, the squat had to give up activities like beer brewing and bee keeping for a lack of time and capacity. Kim (CMD4) describes this for the case of the chickens:

> We had chickens for eight years, and there came a point when a few people moved out of the house, so we were less people but with the same amount of work. And with the chickens you need a person to really take care, and we don't have this person. This is not a priority right now. We loved the chickens but we needed to cut back on things.

This does not devalue the attempts as such, but the failure of integration marks them as unsuccessful efforts for the circumstances of the squat. Such real-life 'evaluations' include both human and non-human elements. Laura tells me about the stove that was built in the common room, which was a design worked out by a resident. While fully functional, it turned out to be inappropriate for the Barcelona climate: “It's a thing that worked but not for our house. It only gives off heat after five hours, and then stays hot for ages”. At other times, the development of
new projects is a matter of emotional energy, as Theo (CMD5) outlines:

_Theo:_ You know, there comes like a threshold, with the energy or the input or whatever. Some things start to really work. But if you never reach that threshold, it's all wasted. And with the chickens that kind of happened... There are lots of traumas. Because people say _[makes a funny voice]_ 'oh we already tried having chickens, and it didn't work and it is a pain in the ass', and blablabla. In a sense, quite a lot can never be regained.

_Int:_ Right, so that is the downside of –

_Theo:_ _[interrupts]_ One condition for creativity and playfulness is to be innocent. To be innocent and to be optimistic.

This honest assessment indicates the difficulties of these experimental processes and the ever-present possibility of failure. It also introduces some of the wider cognitive frames that are needed to weave alternative practices into innovative everyday living. These are reminiscent of the positive, appreciative attitude towards the world required for a cultivation of enchantment (Bennett 2001) and the mental energies that are a prerequisite for hopeful critical utopias (Brown and Pickerill 2009; Sargisson 2000).

Importantly, these experimental efforts are rarely radical inventions or novelties. Individual aspects of the practices I described are in many ways quite unassuming, like the gardening, meal planning, or skill-sharing workshops. Quirky solutions do exist but they rarely shape the everyday life of the house: the residents are very open about the fact that they do not really use the solar cooker or the bicycle washing machine, although they feature on the public tour. Instead, most of the notable alternative efforts are subtle, blended adaptations. What Can Masdeu does best, Theo (CMD5) explains, is taking existing solutions and adapting them for its particular needs:

_Int:_ Is there anything in the house that is completely new, that you invented?

_Theo:_ No I don’t think so but that’s ok. We just give things a little time, and it is also a collective process. For example, the crop rotation system that we use, I mean we read books and stuff but we adapted it.... It is not like we are trying everything new, because already from the 70s and 60s and with internet, everywhere there are pictures and books of compost toilets, rocket stove, chicken house.

Theo questions the importance of invention and novelty per se in favour of a pragmatic merging of existing ideas. Can Masdeu's everyday experimentation is a work of tinkering, tweaking and joining. I described earlier how the composting method responds to the
requirements of cooking and gardening, adapted to cope with the ongoing addition of fresh material from the kitchen. Mia similarly describes her compost toilet as an adaptation, as "essentially a modified copy of the one [in the lower part of the house]", with some added tinkering of the air pipes and urine separator to better suit the local climatic conditions and the user practices. Their values lies in these adjustments, not in a claim to novelty.

Getting to a workable and useful set of adaptations is another slow, collective process of competence formation, one that shows the dynamics of experimental learning in the squat leading beyond the immediate site. Theo (CMD5) gives an interesting summary of Can Masdeu as a space of learning:

In the beginning it was a university, in the way that it was a school for learning things. It went into many directions. People from the city, from other parts, they came here just to give us a hand, to share the experience, to show us, to teach us something. There were people coming from Germany, you know, the travelling carpenters, they were coming a lot, like Mia now. They knew more about wood and things and they came to help us. That was really really big, you know.

This description of the 'university' is interesting, as it suggests more than a transfer or import of discrete ideas and skills from elsewhere. Reflecting the notion of knowledge as a practice-based concept of "knowing" (Ibert 2007), and learning as an assemblage (McFarlane 2011a), it casts the development of projects and solutions as a process of adaptation. Ideas and skills are not simply stored or collected but applied, integrated and adjusted according to local, situated requirements. Juan explains how he learnt to work with the electricity in the squat, something he had no previous training in: “There were some people who... knew about electricity, they knew how to do things. So we did a workshop and I was learning from people who knew.” Like Mia’s workshop during the compost toilet building, this was not a formal learning occasion. It took place in response to a particular problem – in Juan’s case, the need to hook the house up to the main electricity line and to renew the wiring within the building. Similarly, looking for a way to deal with the social and emotional demands, the residents looked for inspiration elsewhere, as Kim (CMD4) explains for the Va Por Nosotros internal meetings:

It’s something I assume we have copied from another community. Because we've had quite a few visits you know from people in other communities, communities that have been there for 30 or 50 years, and obviously we share those little gems of ideas.

Can Masdeu makes use of these extended networks and sets them into new relations with its
existing needs and patterns. Learning, as a personal moment of skill development or a communal effort, becomes a recursive process of adapting existing set-ups in response to new observations and pressures with unique but not necessarily novel experimental outcomes. The underlying result is the ability of the squat to deal with conditions of uncertainty. The integrated, adapted practices help to make the community resilient through their ongoing adjustment and new formation of relations and competences. Linking this back to the discussion on responsibility and motivation, Kim (CMD4) observes a general willingness to do and to act, despite not knowing how long their efforts will last:

I love the rhythm we have, particularly because it is a squat and you could say, well, we might get kicked out soon, so we might as well not bother. But we've never been like that. We've always been, well, we're gonna do it. You know, we're gonna make it beautiful. We're going to spend time and money and energy, and if we get kicked out next year, well, that's what will happen.

In a similar spirit, Mia built the compost toilet without any long-term plan in mind: “I am really happy that it is still here. When you build things for occupied buildings, you never know how long they will last.” The learning that came with it, both for herself and others, was enough to make it worth it, as she says. This emphasises the role of action in experimental learning, which allows “acting in the face of (well defined) ignorance and outlining social and ecological capacities to cope with surprising events” (Gross 2010b, p.4).

Sharing alternative life

The outcomes of these new competences, practices and constructions have the capacities to form their own relations. I indicated in the beginning that the communal living is only one of the five pillars of the wider Can Masdeu project, alongside the social centre, environmental education programmes, the community gardens and other permaculture projects in Barcelona. All of these are directed towards exchange, sharing and learning, either on-site or through the involvement of residents elsewhere. This goes beyond the networks of exchange and mutual help that have been widely identified for alternative and activist efforts (Lacey 2005; Sen 2010). There are distinctive efforts that make the communal life of the squat itself more public, which brings the discussion back to the visibility of experimentation. Can Masdeu runs a tour of its grounds every Sunday. Lasting almost two hours, visitors are introduced to the history of the occupation, but the focus lies on what is happening here and now: when I take part, we spend a long time in the garden, meeting some of the community gardeners and learning about crop rotation; we get an introduction to the many unique infrastructural solutions including Mia’s
compost toilet; and our guide explains the routines and patterns of communal life. The tour is followed by a joint lunch (see Figure 5.15) – the meal we prepared for on my arrival, and during the afternoon the social centre offers workshops, hosts discussion groups and sells cake and drinks. Similarly, during the community gardening days on Thursdays visitors are invited to help out with the many gardening tasks, before also sharing lunch with the residents and elderly community gardeners. The squat also invites people to stay for a longer period as invited guests, bringing researchers, activists and other interested people from all over the world to the valley.

These public efforts have a clear aim of not only showing off the squat's achievements for its own sake, but to show possibilities, inspire others and perhaps give some practical ideas. As Theo expresses it, he does not just want people looking at the squat and praising it – people need to “experience how it works”. The open days are therefore built around practical activities: during one of the gardening days I work with a Scottish student who is travelling to different autonomous communities to “to feel what it is like” – which in this case meant renewing the coffee bag path around the garden that kept the weeds at bay. Visitors are asked to clean their own dishes in the outdoor sinks, and a polite and colourful notice in the guest room encourages longer-term guests like myself to help with the joint routines of cooking and cleaning. At the same time, Theo also describes these public days as a kind of reality check, as a way for people to learn that “this kind of living is hard work”. But he sees many possibilities of
taking up some of the squat’s ideas: not everyone has to build a compost toilet, or repair a
building, you can “start living in shared houses, or grow some food together”, or even just learn
to share a Wifi network with neighbours, as Jamie says. But the inspiration can go further, as
Kim (CMD4) describes:

[We] have a little sister squat as well... It’s a house called Campinella, and they
are a group of people in their 20s, there is 11 of them, who were hugely taken
by Can Masdeu and decided – let’s do that. And so they’ve taken everything
that we do here, and they do it there... And that’s really lovely to see, because
that’s our dream. When we do this, when we show people around and talk
about the place and invite them to stay, what we’re really saying is – go and do
it. We’re saying this is how to do it, go and set it up somewhere. And this is
what these guys have done. And they’ve done it well, really really well.

Alongside Can Masdeu’s practised alternativeness, there is a commitment towards
demonstrating and sharing, suggesting it to be a visible as well as useful effort that draws on its
peculiar situation as an urban-rural project. This visibility is subtly different from that of
Christiania: the Freetown prominently celebrated its alternativity in the city, but it did so
mostly as a challenge or provocation that raised questions without offering more specific
pathways of change. Active learning happened mostly on a personal level. In Can Masdeu, the
public dimension contains a more purposeful element of sharing, a commitment towards
inspiration and encouragement. This does not imply a replication or diffusion of solutions, but
a gentle push towards trying alternative ideas.

Yet this openness comes with its own problems and tensions in such a closely lived community.
Mia tells me of the “invasion de los abuelos”, the invasion of grandfathers that sometimes
takes place in the house, with the older community gardeners coming to talk and share a cup
of tea, “not always invited, sometimes they are just in the room when people are having
breakfast”. This has become part of their particular relations and exchange, but at other points
the tensions between private and publicness are more problematic:

If we did respond to as many interviews as we are asked for, we wouldn’t have
time to run the actual project. We would be simply talking about a thing that
we are not actively... that we wouldn’t have time to do. And that's something,
that's why we are quite strict about our opening times. The Sunday is when we
demonstrate and talk what we do and we are open to anybody to come and
visit. But then we are strict about other days. Because we’ve realised that it is
very important to have boundaries and to be able to close the door on the
world and say ok, this is our life, this is where we are living. (Kim, CMD4)

Or as Leandro phrased it: “You do not live for the outside”. This is a direct consequence of the
lived dimension of this experiment, one that requires negotiation as well as a personal willingness to be part of an alternative in these terms. It suggests lived grassroots experiments as a notion with inherent tensions and contradictions, reflecting at times contrasting requirements of testing and everyday life (see Kelly 2012).

A 'rurban' promise of low carbon living

Can Masdeu is an intriguing example of a local and communal alternative focused on resource-conscious, low-impact and partially self-sufficient living, which emerges as an experiment from its integration of practices and its willingness to share them. Not unlike Christiania, it is an experiment of the everyday, of mundane routines and responses. But where the Freetown's experimentality arose almost accidentally from the difficult balancing of diverse trajectories, it is the more purposive fusion of social and material efforts towards a shared goal that marks out the experimental assemblage of the squat. I traced some of these processes of integration through the formation of more-than-human competence, the reflexive emergence of structures and the evolution of relations that productively work with the autonomy of the house. Underlying these efforts is an appreciation of the material world, which holds the promise of enchantment – of being “struck and shaken by the extraordinary that lives amid the familiar and the everyday” (Bennett 2001, p.4). This offers experimental openings and possibilities for the creation of new knowledge, through adaptation and ongoing intervention that responds to the squat's uncertainties. All of these developments take place within a partial and somewhat contested, but also immediate and experiential public context. As such, Can Masdeu can be seen as a post-carbon experiment, an initiative which translates “low-impact urban living from an idea to a reality” (Chatterton 2013, p.1659) by changing the role of carbon, its values, economies and technologies, and which makes these issues public and political.

In the context of a wider post-carbon urbanism, this potential is augmented by Can Masdeu's ambiguous relationship with the rest of Barcelona. Like Christiania, the squat is somewhat removed from the city, not through any particular boundary markings or entrance gates, but by virtue of being situated in a more rural landscape while only being ten minutes from the nearest metro stop. This detachment allows the emergence of different practices as outlined above, but the aim is not a complete separation or back-to-the-land migration (see Halfacree 2007). Can Masdeu defines itself as a 'rurban' project, where rural features intersect with an urban context, as illustrated by the view in Figure 5.16. The house considers itself urban in its
thinking and outlook, with residents taking an active part in life in the city, but it is also affected by the wider dynamics of Barcelona. Fluctuations in the property market are visible in varying pressures on the squat – as several residents point out, without the financial crisis, they would have probably been evicted already. Issues of urban sprawl and suburbanisation matter too (see Busquets 2005; Catalán et al. 2008), with the squat implicated in the “16 Doors” development project that proposes the creation of urban corridors into the Collserola Park (Ajuntament de Barcelona 2014). Yet many of its alternative practices are shaped by rural features, as my discussion of cooking, gardening and sanitation has shown: even the partial self-sufficiency of the squat requires a significant amount of agricultural land and work, and Mia’s compost toilet relies on a sheltered area for drainage and further composting. A rurban space therefore acts as a unique point of intersection between these two dimensions, as Cattaneo and Gavalda (2010, p.582) argue:

Such characteristics allow a closer link between urban lifestyles, often unaware of farm-like environments, with rural characteristics, often isolated from the majority of population. A rurban context is the connecting point between the centre (a city) and the periphery (a farm or a village).

Figure 5.16: Rurban revolution: view from the compound to the city
This relationship makes the squat a particularly well-suited location for urban experimentation. It marks it out as a unique kind of learning site or truth-spot (Gieryn 2002) that rejects simplistic spatial categories of rural/urban in favour of a more relational understanding of place as the intersection of diverse trajectories (see Massey 2005). As Pickerill and Maxey (2009b, p.1534) observe for the case of Low Impact Developments, which are often situated outside of the city, such alternative efforts should not be seen “as a one-off rural project”. Many of the ideas are equally relevant for the city, where a “more widespread requirement to derive some of our own needs from the land” could “begin to engender greater responsibility for our environment”. This carries significant potential, and it is from this grounded but ambiguous position that Can Masdeu emerges as both an everyday alternative and a valuable grassroots experiment.
The discussions of Christiania and Can Masdeu suggest two different assemblages of urban experimentation. Both can be understood as everyday experiments in which alternative ideas emerge from specific needs and localised responses, based on the formation of socio-material competences – the hallmarks of grassroots experimentation. They also both stand in an ambiguous relation to the wider city as neither fully integrated nor totally separate places. But their experimentality is assembled and expressed in different ways. Christiania is grounded in the balancing of its diversity, creating an urban site of questions, with different experimental strands coming together almost incidentally. Can Masdeu on the other hand purposefully pursues a common goal of low impact living through an ongoing integration of practices, with a clear recognition of public sharing as part of its experimentality. My final case study of the Prinzessinnengarten in Berlin, Germany takes up and extends this spectrum of experimentation. It has a different set-up from the previous two: rather than a site for living, it is a gardening initiative that intervenes in a public space. While it shares many practical dynamics with the other two, it is explicitly public in its approach, and deliberately geared towards asking questions and testing ideas. Here, I introduce this unusual garden before describing three of its projects in greater detail: the creation of a DIY irrigation system, a medicinal plant corner and a clay oven. From these examples, I sketch out how the Prinzessinnengarten cultivates its possibilities of learning and engagement, and its dual role as an open public space and urban laboratory.

A strange garden

The Prinzessinnengarten is an odd space to get to know. Depending on when and how you approach it, it becomes very different things. Fundamentally, it is an urban garden, or more specifically a Nutzgarten, producing fruit, vegetables and herbs in the middle of Berlin. But at lunch time during summer, what is far more obvious is its café, tucked into the shade of a group of black locust trees. At other times, one might find the space bustling with a flea market. From the back gate, the first thing you see is a spray painted shipping container surrounded by bike frames and wheels, where a group of people work on strange-looking
bicycle constructions. And sometimes one can just wander in and stroll among the colourful plastic boxes that make up the majority of the plant beds, enjoying an island of stillness and bird song next to the busy Moritzplatz traffic roundabout. When I arrive, volunteer Paula gives me an extensive and surprising tour: beyond the huge diversity of plant species, there are far more corners, activities and 'things' here than I would have expected. Over the next few days I start to find my way around, helping out with my first public garden work days and getting an introduction to the shop container, where the garden sells young plants, soil, planting containers and books. On my first weekend I already feature on a TV news report: there is a huge media interest, and almost every day someone is being interviewed or photographed.

The story of this surprising space starts in 2009, when the initiators Anton and Nils first leased the 6,000 square metre site from the city of Berlin, after the plot had been empty for over 60 years, with only a sporadic use for a car dealership or second-hand market (Nomadisch Grün 2012). Their idea: bringing a version of Cuba's 'agricultura urbana' movement into the German context. Anton had gotten to know the urban farms of Havana while living there, and he was interested in translating their work for the needs of the trendy but poor Berlin neighbourhood of Kreuzberg (see Figure 6.1). While the original gardens sought to counter a lack of fresh vegetables available for personal consumption, the needs in Berlin were different: “We replaced the food production with education here. Learning about food. Because that's something that's actually needed” (Anton, PG1 tour). As well as education, this included a focus on local community building and an economic dimension – the garden should be a space
from and for the neighbourhood, and it should be sustainable as a project, not dependent on external funding. At the same time, the practical dimension of these ideas was rather undefined. Camilla (PG15), who helped to start the project, describes the difficulty of presenting the project on its first public day, where local people were invited to clear the site at the Moritzplatz of rubbish and discuss its future:

[This] was the first time, I think, when I really had the feeling – ehhh what are we actually doing here? [laughs]... And I think it was the same for all three of us. I think [Nils and Anton] didn’t have more of a clue what they wanted to do. No one wanted to do the info table because no one really knew. It was a bit about health, and healthy food, and young people, and integration.

The rhetoric has become more confident over the years: the most common description of the garden now is as a “social, mobile, urban agriculture” (Nils, PG2 tour), a garden that works with people as much as plants and that sees itself as an integral but not fixed part of the urban landscape. Yet in many other ways, the looseness of the project, the oscillation between structures and free space, and the openness towards ideas and surprises continues to shape the Prinzessinnengarten as an alternative space in the city.

The most immediately visible expression of the Prinzessinnengarten's different approach as a social and mobile urban garden is its unusual aesthetics, as many visitors and commentators note:

By its looks, Prinzessinnengarten is certainly strange; there is an enormous amount of formal aesthetic innovation in this ‘urban garden’ which combines an economic pragmatism with a rampant grow in any way and every way you can approach: white vinyl bags strewn around with vegetables growing out, herbs popping out of tetrapacks, stackable red plastic containers, a ‘grow or be damned’ attitude. The colours [sic] combinations aren’t too bad either, red, white, then the clean minimal lines of the café and kitchen in shipping containers. (Izhar 2010, original emphasis)

The plastic boxes in particular, brightly coloured and neatly stacked into rows of plant beds, have come to symbolise the garden, making their way onto postcards, into the garden book, and onto all the offshoot sites that have been supported by the Prinzessinnengarten. They are donations or bulk purchases from food production and distribution businesses; the food grade material ensures that no softeners and other chemicals can enter the plants. The boxes also act as material manifestation of doing things slightly differently. As experienced gardener Tamara (PG12) says about her first encounter with the boxes:
The way of growing things like this, I had never seen this before. And in the beginning I thought, oh, the poor plants. They don’t have a real plant bed. So that was totally new to me, that you grow things in bags and boxes.

They are an expression of an agriculture that is diverse, mobile and urban; a response to the unsuitability of the city soil for any kind of food gardening, and the outcome of a specific situation of the project:

A compost bed would rather be without boxes, just as a pile, without this separating layer with those holes.... That's just because we have to, and also want to, stay mobile. (Nils, PG2 tour)

This mobility is a consequence of the lease, which stipulates that no fixed structures may be put on the site. It has since become a defining feature of the garden, setting it apart not only from the roads just outside the fence but also from other community gardening efforts in Berlin (see Figure 6.2).

The garden also fulfils an important and unique role as a public space. It differs from parks and other green spaces in the city, as it is run by a private group of social entrepreneurs and its public access is not unrestricted: there are a fence, a locked door and opening hours. Yet it fulfils many dimensions of an urban green public space. It works as a kind of oasis, an “island” as gardener Eva describes it, speaking to people's needs to de-stress (Paula PG3 and Tamara PG12), reconnect with nature (Eva PG5) and to take a slower approach to life (Susan PG6).
Anyone can stop by, there is no requirement to be a member or buy anything from the café; instead, people can ‘just be’:

Sometimes people come to the garden with everything that is currently on their mind, and they have the feeling that they can let it all out... It is [a place] with people who in a first instance don't want anything from you, who are just open. And where you can just be yourself. (Tamara, PG12)

It allows and fosters social interaction – and it goes further by offering, and at times requiring, visitors to become active. If they order a fresh mint or sage tea at the café, guests are given a knife and sent to cut their own herbs, relying on smell, taste and the occasional help from the volunteers to figure out if they found what they wanted. Harvesting works in a similar way; pointed in the right direction by volunteers, people dig out, cut off or pluck their produce. There are no signs in the garden to prevent people from touching the plants, and although many are hesitant, some visitor make use of this as they wander along the rows of beds, tasting a herb or leaf here and there. Twice a week, on Thursday afternoons and Saturday lunchtimes, people are invited to come to the public work day, joining in with whatever task needs to be done. These possibilities of doing and being mark the garden out as an alternative public space.

An experimental showroom

The Prinzessinngarten is an unusual urban garden in its aesthetics and atmosphere, and its existence as a public space. Its alternativity is expressed also in the number and diversity of activities and projects that have passed through or continue to take place there, many of which are not the traditional elements of an urban community garden. From the first few plant beds, the planted area has now grown to cover almost half of the site with hundreds of varieties of vegetables and herbs – by 2012, the garden had accumulated the seeds for 34 different varieties of tomato alone (tomato seed list, own files). In 2010, a small bar opened which is now a busy restaurant and café serving lunch and dinner pizza, which helps to fund the garden as an integrated part of the social enterprise structure. Other projects and specialised areas joined: the perennial plant nursery, the bicycle workshop, the bees, a Japanese garden. Many others have been and gone, with the gardeners at time struggling to keep track (for a snapshot, see Table 6.1). The garden also expanded beyond its borders, setting up mini-gardens in schools, institutions and at festivals, and consulting other urban garden projects. This casts it as more than a place to grow food in the city. Asked about what the garden is, Anton (PG13) describes it like this:
It is for sure not primarily a garden. It is primarily an open space, but one that follows particular rules. And that includes the garden in the same way as gastronomy, the production of food stuff, the children’s area, the educational part, the community part. So the garden does not even play the main role for me. It is what has most presence here, and it is the hook.

This emphasises the Prinzessinnengarten as a multi-dimensional alternative space in the city.

**Table 6.1: Projects in the Prinzessinnengarten: (incomplete) list compiled by volunteers during a discussion 26 June 2012**

<table>
<thead>
<tr>
<th>Work Compost boxes</th>
<th>Aquaponics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bee keeping</td>
<td>Bokashi compost</td>
</tr>
<tr>
<td>Clay Oven</td>
<td>Environmental Education modules</td>
</tr>
<tr>
<td>Sewing</td>
<td>Screen Printing</td>
</tr>
<tr>
<td>The Order of Potato Project</td>
<td>Open Workshop</td>
</tr>
<tr>
<td>Bike Container</td>
<td>Postcard design</td>
</tr>
<tr>
<td>Irrigation System</td>
<td>Medicinal Plants</td>
</tr>
<tr>
<td>Dye Plants</td>
<td>Garden Dinners</td>
</tr>
<tr>
<td>Pale Blue Door Theatre</td>
<td>Making syrups</td>
</tr>
<tr>
<td>Garden Consultancy</td>
<td></td>
</tr>
</tbody>
</table>

It also opens up claims of the garden as being specifically experimental. Through its varied activities and projects, it “gives neighbors, school kids, visitors, students and researchers the chance to create and experiment with local answers to global challenges like climate change, loss of biodiversity, food sovereignty, environmental justice” (Clausen 2013, p.1). Many of the individual projects within the garden are experiments and tests – the garden is “a bit of a lab”, as volunteer Lily describes. There are comparative tests with different composting methods and intriguing prototype constructions like the aquaponics tank (see Figure 6.3). An ongoing potato art project (“The Order of Potato”) explores different potato varieties and seeks to cross its own successful hybrids. Around these specific projects there is an underlying commitment to alternative education: in their book, the gardeners describe the garden itself as “an educator” and “a special kind of learning space” (Nomadisch Grün 2012,p.33) in which learning takes place as a communal experience in the absence of expert knowledge. This forces people “to cooperate, to improvise, to ask for help and to not be scared of making mistakes here and there”. This learning extends far beyond the immediate site. Nils describes the garden as a “showroom for questions”, a space that condenses and crystallises global issues, making them
tangible and knowable through local activities and materials. This includes active intervention: in one discussion, Paula describes the garden as “a space in the city where you can transform your environment together with other people” – where actual difference can be created.

Continuing with grounding my discussion in the stories of particular structures and practices, this chapter explores the Prinzessinnengarten’s experimental role through three specific projects. The first example is the internal project of the DIY irrigation system which, echoing constructions in Christiania and Can Masdeu, brings out the garden’s specific socio-material dynamics and different modes of learning. The second is the creation of a medicinal plant corner by a group of interested visitors, which sheds lights on the notion of free spaces and the open possibilities in the garden. Finally, I explore the clay oven which offers an emphasis on the playful experiences in the garden. These examples, which are marked on the map in Figure 6.4, outline the Prinzessinnengarten as another grounded experiment, but one which explicitly develops its experimental potential through its public dimensions.
One intriguing project that developed during my stay in the Prinzessinnengarten is the irrigation system: a DIY construction of connected tanks and hose pipes drip feeding the box beds. Placed at the end of a row of plant beds, the tanks are connected to each other and can be filled from one tap. By the time I leave, the system is semi-completed; the basic idea has been worked out and some of the tanks and hose pipes are connected. But they are not yet in use, watering is still done by hand as the gardeners have yet to work out a system: when should the tanks be opened, and who fills them? The project was led by intern Julia, an energetic young woman with building experience, and garden founder Anton, who was excited to have a tinkering project going on alongside his normal gardening and outreach duties. With the help of other volunteers, they spend much of the summer months building, testing and adapting. This process gives an interesting insight into the socio-material dimensions of experimentation in the garden.
Asked about where the idea for this irrigation system and its particular arrangement of tanks and hoses (see Figure 6.5) had come from, Anton describes it “as a constructive chain of coincidence” of materials and ideas. First and foremost, it was a response to the ongoing issue of watering – the box beds dry out quickly in the sun but need to be watered slowly as to not drain out the soil, so the task is extremely time-consuming. The first idea was that of a simple drip irrigation system using perforated hose pipes that would be connected to different taps. Anton then discovered old flour tanks being sold cheaply, 7€ each, on a website for second-hand goods, and he suggested to add the tanks as water storage containers. The tanks were placed along the box bed rows – and immediately became talking and discussion points. Dirty-white with signs sprayed on them, they attracted questions from visitors about their function as well as being a point of contention among the volunteers: “I think no one else had such ugly water tanks” (Paula) – “You can have an argument about the tanks, I think they are awesome and beautiful” (Anton). After the tanks, other materials came together, which enabled the team to really start working on the project: Euro pallets from the garden storage, boxes to prop up the tanks, old hoses from a closed-down gardener’s business. Anton summarises this process: “you have some things, then new things come and suddenly you can do something”.

Figure 6.5: The Irrigation System (mid-way stage)
Reaching the stage of a functioning irrigation system, however, required more than the presence of materials and good ideas – it also required months of work during which Anton and Julia developed, tested and adapted the system. To fill up several tanks from one tap, the initial idea was to connect them with a hose running above the tanks. This was not completely successful, as Julia (PG17) explains:

We got a bit stuck with this idea that it has to be this hose pipe... The problem with that was mainly that the pressure gets pretty high, and that pressure then means that water is coming out of every little crack that isn't 100 percent sealed. And then we unfortunately spend a lot (emphasised) of time trying to seal everything.

After spending weeks to find a way of connecting the tanks, they found a possible solution. However, a test run showed that although the theory worked, it would not go well with the wider practices in the garden:

And then we also tried to put bike valves into the lids, and that actually worked, the air really comes out... [But] it means you'd have to screw them all shut individually on top. We also tried that, but that's not really that ideal.

Eventually they came up with direct pipe connections between the tanks, using cheap drain pipes from a building store. Rather than dismantling the old system, they simply moved on to another row of tanks to test this new idea:

So we moved away from these ones [the ones behind the bar] and just left them, and we tried to make connection between the ones back there [in front of the containers] with these pipes, just to test it.

Julia was pleased with outcome: “Now the system is pretty easy, but it just took time to get there.” But to arrive at this final, simpler solution, they had to get through more convoluted process of “thinking and doing stuff”.

The process of working out this system involved a lot of direct, experiential learning from the builders. As shown in her detailed descriptions, Julia spent many hours “thinking about”, and then “tinkering with” and “trying” solutions to individual problems. At times she resorted to unusual approaches of figuring out what was happening, for example when one of the tanks burst:

I had a friend visiting who used to live with a physics student... So we just gave him a call and asked him why the pressure is so high, why the water doesn't just flow into the next one when one is full. And then he explained an experiment with water glasses and straws, which we also tried out. And that
was really strange, none of us could really follow it, it was totally weird... You see all these things and then you think well, why is that happening right now.

Other volunteers had their own moments of learning. Erik had to get acquainted with the intricacies of making drip holes when he fixed the hose pipes:

Of course you know the idea. You take a hose pipe and make small holes into it. But then to see and do this directly, that’s something else. In the detail, you then get 1000 little problems. You can’t read that in a book... Like the size and the distance of the holes, and how to actually do it. (Erik, PG10)

This slow embodied learning of the task is important, as Julia emphasises:

[Y]ou are either in the task or not. One time I got someone else to do the holes, and then she came back after 5 minutes and said she did them quickly because she had to go – it doesn’t work like that. You always have to check if the water comes, and if not make it bigger, if it is too big put something into it.

This reflects the personal effort and work needed to respond to the materials available, and it suggests the incremental and embodied moments of learning that are needed (see Figure 6.6).

The outcome is a system that is easily replicable, with widely available parts and simple technology. It is also affordable – Julia estimates that the total cost was about 300€, given that most materials were either recycled or readily available in the garden. A new, professionally installed system would have been perhaps 10,000€. What it did require, however, was a big investment of time and energy. Julia understands this as part of how the garden works: “Yeah but there’s a different relationship here with time. Time we tend to have enough, and my internship time now is also free time for the garden”. There are also the learning benefits, independent of the outcome. For her, it was not only understanding the physics of water pressure but experiencing a particular process of problem-solving: the need to explore different channels with some dead ends, while recognising when to move on and perhaps start again from scratch. While a final practice-based evaluation of the irrigation system as a workable addition to the garden was still missing by the end, the development stage indicates the garden’s approach to problem-solving, and its use of existing material and spatial affordances.
Finding free spaces: the medicinal plants

Not all developments and ideas are driven by the long-term participants of the garden, the Prinzessinnengarten also attracts people and ideas from outside. This is how the medicinal plants came to the garden, a separate plot of eight beds near the entrance, with bright orange boxes on the top, and a hand-drawn sign identifying them as “Heilkraeuter” (medicinal herbs). Each box contained a different herb with a little sign for explanation: dandelion, yarrow, foalfoot, calendula, ribwort. These are local plants that are ubiquitous but rarely acknowledged in the city, and which can be used to treat a host of different illnesses and problems. The beds were built, planted and curated by a trio of locals led by Susan, an educator with training in herbal and alternative medicine. I first meet Susan during one of my first garden group meetings, the weekly meetings in which volunteers, interns and the project founders come together to discuss day-to-day issues of the garden. Susan introduces her idea, and several people in the group are immediately excited about this – visitors frequently ask about medicinal herbs, and several of the garden volunteers are interested themselves. So after a short discussion, the group agrees to cooperate: the women would organise and carry out their project, the garden would contribute space, material and helping hands. Over next few weeks, the beds emerge, and when they are finished, Susan returns to the garden meeting to hand over the project: it is no longer an individual effort but part of the garden, set apart only by the colour of the boxes and the slight separation to the other beds (see Figure 6.7). Still the women
continue to be involved, running different tours and workshops on the uses of calendula, dandelion or stingy nettle.

At the start of the project stood Susan's and her collaborators' personal motivation, and their search for a space to fulfil their needs in the city. Susan (PG6) had always been working with medicinal plants but was struggling to give her interest the necessary space:

I always have been collecting [medicinal herbs] around the city, and I satisfied my needs a bit in our yard and on my balcony. And this year this wasn't possible because there is a scaffolding. So even this small possibility of working with the plants for myself wasn't an option.

Collaborator Christina expresses her main interest in more tactile terms: “For me it is more this motivation just to rummage around in the soil. Just to have something where you can dig around a bit, where that's also accepted.” This search for a space then met an invitation from the garden. Remembering the Prinzessinnengarten from previous social visits, the team decided to come to one of the bi-weekly open working days to see if the ideas could be taken further. By chance they found themselves talking to Anton, who liked the idea and invited them to the meeting to present their plans. The openness and enthusiasm from the garden provided the trigger, and things started to fall into place:

My personal need to do this plus the great interest from [the garden] in the

![Image of medicinal plant corner](image-url)
end was the point where I said, well I could really give this more space here... And then it went like this [snaps her fingers], within a week essentially... It was really easy, really easy to get in. (Susan, PG6)

This easy entry, Susan explains further, shaped her outlook on the garden, but also on her own ability to complete the project.

The invitation took a more concrete form in the public gardening days, during which Susan and Christina built their plant corner. Sourcing materials from the garden with some private additions, and getting help from resident gardener Karl, they made half of the box beds during their first session. It was a busy public work day, and with this many hands, soil and cardboard were easily prepared. There was almost too much help available, as I observed:

We piled a lot boxes up in preparation, going out to look for more, getting people's opinions about how they fit together, how much compost to put. Some people went out to get more cardboard [to stop the soil from falling out]... With all those people we started to get in each others' way a bit. A wheelbarrow would be in the way of the next one but the person who brought it was talking. It became as much a social meeting space as a work site. (research diary, 10 May 2012)

In our chat later, Christina (PG6) is still very enthusiastic about this day:

A crazy number of people were immediately involved, we were so positively surprised and felt so positive after we put up those beds, found the space. It all happened so easily and with so much help. And I had the feeling you could get help from anywhere. Everyone immediately made an effort to send us on, or to send us to the right container and so on.

Running counter to her prior expectations, this support became an important motivation for their work on the project.

The progress during the work day also depended on materials (as indicated by Figure 6.8). One of the biggest challenges was finding the boxes to make the plant beds. When I joined the group, an intensive discussion was taking place: the builders needed 16 boxes that fit on top of each other and which ideally should be of the same colour. This turned out to be difficult, as I later note:

The boxes always seem to be in unlimited supply, and Anton would say just go and pick them – put that's not quite true. They are all different, and it is actually a massive puzzle to find ones that fit together. In addition, there is an aesthetic element to all this – that the beds that are together have the same
colour. It is not a rule as such but it's just something that feels right to do and is the case in most corners. Also, in this particular case the women wanted the medical plant bed to be a bit separate, or to be visible as one thing. (research diary, 10 May 2012)

After lots of trying and discussion, we found a compromise: only the upper, more visible layer will be orange, the lower level is a mix. And there were other aspects to note, too, as Christina (PG6) describes:

And when we put up the boxes, it was said, watch out that the adverts do not show directly. I didn’t even immediately get the connection. I did it and then I noticed that this is so nice. That's why the space feels like that, free of advertisement. For me this is an aspect of freedom here.

This puts into perspective the easy aesthetic of the garden I described earlier. In practice, the aesthetic juxtapositions and idiosyncrasies are not all accidental but the outcome of some work, of specific material decisions which are linked to the demands of the plants, and the availability of materials and underlying ideas such as a deliberate rejection of branding.

Figure 6.8: Volunteers and boxes

Susan and Christina emphasise that the project was not about showing off their work and expertise. They enjoyed the process, investing time and energy for a wider outcome: “It’s not because in the end we have ‘our’ medicinal plant bed there – it’s exactly not our bed, our product. It is something that is here for everyone.” They understand it as part of a larger
exchange of knowledge and learning. Susan continues:

So I hope that many people take something from the many signs that we made. In turn, I have – Karl was there twice, and I learnt about root systems, coconut bricks and this fertiliser that you chuck in there. I didn't know any of these things and now I do, and can take it with me and can apply it at home and can tell the neighbours. That's just fantastic.

As an extension of this idea of exchange, the women subsequently offered workshops on different herbs – focused on the potential of everyday plants that “you can get for free, and prepare for yourself, without a lab and huge efforts” (Susan). But the learning also continued in material terms. Although they finished the initial phase, there were things to be considered for the longer term: “We still need to do some material tests – do these signs last for more than a month, or does the colour fade completely in the sun?” The medicinal plant project illustrates the open invitation for such learning and doing in the Prinzessinnengarten. It also highlights the subtle role of aesthetics and material choices in the formation of a particular atmosphere. It is projects like this that bring together the unique material and social dynamics of this garden.

**Playing in urban grounds: The clay oven**

A final example illustrates the playful possibilities of the garden, which contribute to its alternativity as a public space in the city. During one hot weekend in June, a small group of volunteers and friends build a small clay oven in the slightly less used area between the big project table and the perennial plant nursery. The idea for this had been floating around for a while: several people had expressed an interest in making a clay oven the year before but not much had happened, as Martina (PG16) explains:

It was a bit like all the processes here. It's not like – I have an idea. It was more – I thought it was great, then someone else said, well let's do it some time. Then a few people put their name down but no one really felt responsible... and it all became dormant.

Part of this was a sceptical attitude by some gardeners, who questioned the use of a clay oven. Things changed when Martina took part in a clay oven workshop elsewhere and decided to re-start the process. She assembled a group of four garden volunteers, who met a few times and then set a date for the building. I had not been part of those meetings, but I too joined for the construction alongside some of their friends.

Although very enthusiastic, no one in the group knew exactly how this oven should be built.
Using a mix of Martina’s and another helper’s workshop knowledge, and the instructions from an Einfälle statt Abfälle (ideas not waste) manual (the same publication that used by Mia for her compost toilet), they decided on a basic structure, negotiating with the garden for materials: a wooden pallet as the foundation, with a layer of bricks and insulation pellets to keep the heat in, covered in a mix of clay and sand. On top, the oven needed to be formed with clay balls placed around a pile of newspaper-covered sand, before being finished with a smooth coat of clay mixed with grass cuttings. Most of the materials were available, only the pellets were bought with support from the garden. But much of the difficulty of building came not from the general steps, which we mostly understood and which were nicely sketched out by Erik, but from detailed questions about process and textures: how much sand needs to be in the clay? How wet should it be? How exactly do you add the clay balls to the wall? The only way to solve this was to explore the properties of the mixture by touching it, forming it, throwing it around. The building process therefore became “a constant testing, touching, someone giving an opinion, then changing their minds again” (research diary, 22 June 2012) – a tactile experiment in building a clay oven, and in learning how to do it (see Figure 6.9).

The whole process became rather playful: the builders chased each other with dirty hands, sprayed water around and marked each others’ faces with clay. This got some attention from children in the garden who came to see what we were doing. But they were rather shy in touching the wet sticky mix and joining in, leading one of the adult-mud-players to remark how “this time it is the adults that play in the dirt, and the children are watching”. This play element did not occur in opposition to our stated building objective; it was an integral part of the process, of testing, of understanding the material, as I noted:

> It was a strange sensation standing in the mud tubs. The texture of the mix varied a lot – it was quite hard work when it was kind of dry, and it meant you didn’t sink to the bottom... Adding more water made it more like a mud bath, it reminded me of the beach where you play with water and sand. It also made the funniest squelching noise, and I discovered that you could make farting noises by moving your feet. But we also used our feet to judge the mix, asking for more water or sand to be added. (research diary, 22 June 2012)

The approach worked – although progress was slow in the beginning, as we had misjudged the time it would take to mix the ingredients, we finished the project in two days, ready for the oven to dry out. After about 10 days, again with lots of disagreement, Eva and Erik then removed the sand, and except for one crack it held together.
I missed the first bread-baking, but the oven has since become a staple part of the garden. The group fixed it up and later added a small chimney for better circulation, also adding a small roof which then slowly got improved and extended to make room for a wood storage area. Every few weeks, a few people made bread, inviting the garden group to join. Eva also integrated it into her work with dye plants, using the oven to heat water for dye workshops. And there have since been discussions to build a new, bigger oven. As such, it has become one of the many examples of projects exhibited and used in the garden. It is a project that illustrates some interesting dynamics around making and learning, and it speaks to some of the different approaches and viewpoints that come together here. Anton's opinion for example remained ambivalent, even after the oven was built and functioning. His critique came from
the oven being, in his words “some kind of unique thing”: an experiment that is built once in
the particular setting of the garden, but which has little pragmatic use and lacks reproducibility.
But he acknowledged that such differences in interests happen: “I have to put up with it, that
the garden does things that I don't think are that great. That’s ok I just don’t want to have too
much to do with it”.

But alongside the final product, it was the process itself that the builders saw as beneficial and
useful. As Martina (PG16) describes:

[T]he most important thing to learn is something like this here [points to the
clay oven]. I would have instantly invited an expert to run a workshop for us.
And here I learnt, ok, if you do it together, you can just start, implement, just
do. And being able to live with the fact that it might not work perfectly in the
beginning.

This very much fits in with the idea of the garden as a space of learning that is less concerned
with outcomes and more with the ways of getting there. It also emphasises the garden as an
alternative public space in the city: one that allows and actively invites active involvement. It
enables a tactile connection, through the soil or in this case the clay. As Erik (PG10) says about
his first experiences with the garden and his reasons for becoming involved:

Well really far in first place is that I can stick my hands into the soil. That I can
work with the soil, that I can feel the soil. That’s kind of cleansing and healing
for me.

This tactile dimension is reflected in the tasks he tended to choose, working with new plants
beds and the different soils required for them, as well as building the clay oven. He describes
this as a counter-point to his wider experience of the city:

Maybe it is this – my longing to feel the soil again. This is why I’m suffering in
the city. I can’t feel the soil in the city. The landscape, the soil, that’s all gone.

The clay oven therefore illustrates a particular tactile dimension of learning and doing in the
garden, which is promoted by the different projects and inscribed into the wider garden space.
It extends the different moments of learning of the previous examples, and it speaks to the
diversity of efforts and ideas that co-emerge.
Growing 'more than a garden'

The irrigation system, the medicinal plants and the clay oven are three of the many projects and activities that make up the Prinzessinnengarten. They are not separate from the everyday gardening activities – they respond directly to its daily needs (the irrigation system) and are part of its expanding efforts (the medicinal plants). At the same time, they make the garden more than a neighbourhood or community garden that is focused on specific aims of production or intercultural integration (see Meyer-Renschhausen 2012): having a flour-tank irrigation system and also making room for a clay oven indicates particular directions of thinking, approaches that suggest a more complex and less clearly defined category of place. The garden as an open space, as an invitation becomes a space of creation. Clay oven builder Martina (PG16) summarises this feeling:

After a while you understand that it is so much more [than a garden]. In a way, it is a platform to do things. You can come and just do a sewing workshop, or build a clay oven, or do a bit of gardening. But also, the more you understand this place, the more you see that you can implement all kinds of things here. That you can create things.

Reflecting on their experiences, the medicinal herb planters similarly develop the notion of the Prinzessinnengarten as a “free space”, a space of trust and few structural demands, with certain rules but no feeling of being told what to do:

[T]here are big spaces of freedom in which we can move here [and] a huge advance trust... There is a big relaxedness and a trust that this will take its course. (Susan, PG6)

For Christina, this free space manifests itself through tangibility: “There is something you can immediately grab hold of. You can start straight away, you don’t have to bring anything.” Not all of these efforts are big projects, the garden subtly changes all the time, as I observe in response to a new model of beer crate chair in the meeting corner: “There are things that just appear here, that weren’t there two days ago. And you don’t know how they got there or where they came from” (research diary, 6 June 2012). The Prinzessinnengarten becomes enacted through different practices as both a garden and an open space, reminiscent of what Law (2004, p.62) tentatively calls a fractional object “that was more than one and less than many”. He suggests that objects and things in the world relate to others through “inclusion, contradiction, and sometimes... cooperation” but they “never collapse into singularity” (ibid, p.65). These metaphors are useful for the multi-dimensional project of alternative urban gardening. As one gardener expresses it one time, when some of the more mundane tasks of
watering, weeding and soil preparation seemed to be ignored: “We need to become a bit less of a lab and more a garden again.” In transcending these dichotomies, the Prinzessinnengarten comes into view as an alternative urban experiment.

As before, a key element of this is the notion of vernacular creativity, which I already traced through the experimental everydayness of Christiania, and the squat tech structures of Can Masdeu. Being creative in mundane settings and ways has been identified as a key aspect of urban and community gardening (Crouch 2010; Milbourne 2010) – emergent from “its material soft collision” (Crouch 2010, p.135) and the ongoing performed dialogue and relations of people and plants (Hitchings 2003). This too is visible in the projects for the Prinzessinnengarten: the material tinkering of the irrigation system, the communal and aesthetically conscious creation of the medicinal plant beds and the playful, exploratory building of the clay oven. Lily (PG8) describes much of what happens as “the art of improvisation”. She also uses the German word ‘basteln’ – a child-like, playful tinkering and crafting, which implies a certain messiness as well as the use of perhaps strange or makeshift materials. What is notable about these patterns in the Prinzessinnengarten is the reflective and public approach to them: the efforts involved in creating the conditions for these performances to happen, and their sharing as part of a wider urban intervention. How projects and interesting ideas emerge is an important point of consideration and discussion among the gardeners, as they work out their own role in this complex space. One of the most interesting things, Paula says, is to work out “how open can it be, how regulated does it have to be”. These ‘regulations’ are not manifested in signs or membership – the gardeners agree that they do not want a “forest of 'don't do this' signs” (garden meeting 12 May 2012). Instead, there is an understanding of membership as participation: help out for at least half an hour, and you are a member for the day with a 50% discount on everything, and the garden meetings are open if people are interested and bring ideas.

The open membership stands as an invitation for people to become an active part of this public urban experiment. At the start, I indicated how visitors are encouraged to interact with the garden by smelling herbs, harvesting produce and contributing to the daily tasks. A key institution here is the twice-weekly public garden work day that has shaped the garden week since its first full season in 2010. It attracts over a thousand people over the year: students, families with children, older people. This open invitation is a central feature of the garden:

These two garden working days are totally sacred for the garden... It's really good that people can just come without having to ask and to call first, no
matter whether they know anything or not – a 'low threshold offer' you could say. (Paula, PG3)

It is in these offers of engagement that the garden emerges as an unusual public space and a site of learning and exploring. Some volunteers have specific gardening interests because of their studies or because they want to start their own; many others come to relax, to work outdoors or are simply looking for something different to do, and all of these feed into the diverse enactments of the garden's openness and vernacular creativity. In many of its socio-material practises and dynamics, the garden therefore reflects the grassroots experiments of Christiania and Can Masdeu, but it offers these as explicitly public invitations to experimental learning.

The 'place-means-principle' I: loose ends and traces

The idea of membership through participation suggests an interesting approach regarding the Prinzessinnengarten’s position as a public project: it does not categorise between 'internal' and 'external' efforts, between everyday work and public sharing, but connects the two through notions of practical doing. The three projects I outlined earlier demonstrate this – they were initiated by different constellations of people (garden founders, long term volunteers, interns, guests, new project makers), and as they went on they became integrated parts of the garden as well as public outcomes. Tracing the development of projects, therefore, gives an insight into how the experimental multiplicity of the Prinzessinnengarten arises. What strikes me during my work there is the fluid emergence of new ventures. Various ideas swirl around during the garden meetings or casual chats over a lemonade outside the shop container – and then things suddenly get under way, with at times little explicit planning. This observation is summarised by the gardeners themselves in their book:

The different topics and projects usually enter the garden spontaneously, attracted by the atmosphere of something unfinished and improvised. In spite of the strict order that is suggested by the rows of [standardised] and stacked containers, whoever enters the garden will notice that it is not the result of landscape architectural planning. (Nomadisch Grün 2012, p.40)

I have a long discussion with Anton about this 'atmosphere'. He suggests that one needs to understand the garden from a “sociological perspective” in terms of the variety of people it attracts: experienced gardeners, interested volunteers, project makers, the occasional new-age dreamer. He then takes his explanation further and coins an interesting phrase:
It's like some sort of place-means principle. Source things cheaply and in big quantities, and maybe something will come of it. Or, without things, provide the space, provide the idea, give a few guidelines and maybe someone will do something with it. And sometimes that works well, and at other times, not so well. (Anton, PG13)

This suggests a central role of the non-human world and the affordances of the site alongside the people. It takes up the earlier conversations around material agency in experiments, and the negotiation of a heterogeneous research collective, which works along distinct lines in the Prinzessinnengarten.

One of the elements Anton suggests in his place-means principle is the 'space' of the garden as a point of entry and possibility. Providing a space with only a few guidelines was one of the key starting points of the medicinal plants project as Susan and Christina explained, and it also allowed the clay oven to materialise. In the same way, the bicycle container found a space, as did the aquaponics tank. Bee keeper Martin (PG11), who has several hives in the garden and produces his urban honey as well as offering workshops, nicely summarises his arrival at the Prinzessinnengarten:

[In] 2009 I started looking around for a place in Berlin, because I was wondering whether it would be possible to keep bees here. Urban bees. I looked at different places, but they were all scared, scared to be stung. There was rejection everywhere. And then in August 2009 I came to the Prinzessinnengarten; at that point they had just started to do something with the site... And I just asked if I could add my bees. And they said no problem. This is a great openness that I really value.

The openness refers to the physical capacity of the site as well as a way of thinking – reflecting the notion of the community garden as both a material and metaphorical space (Crouch 2010). There is an indeterminacy of direction with an open invitation for people to bring ideas and become involved, which is intricately linked to the affordances of the site. Just as the conceptual starting points of the garden initiative were diffuse and hard to articulate, the space too seemed, in the words on one volunteer, “endless”. Anton (PG13) puts it like this:

In the beginning it was a derelict site, and there was only an intent that was stated. There was not a single box, not a single plant that wasn't growing wild. And nothing else.

In many ways, the site was what could be described as a “loose space” (Franck and Stevens 2007, p.2): a place in which “a fixed use no longer exists... or possibly never existed at all”, but which has potential to be recognised and taken up by people. Unlike the immediate
infrastructural needs and directions of Can Masdeu and Christiania that were set by both the material environment and the goals of their initial take-overs, there were few physical structures in this site to guide the early development. Instead, the gardeners took input from the site’s non-human inhabitants, in particular the Black Locust trees that cluster to a little forest in the centre. These trees are part of the pioneer vegetation that had colonised the brownfield site, but rather than cutting them down the gardeners enrolled them in their activities. They became a symbol of their approach, of working with whatever little resources are at hand: “Like the [pioneer vegetation] the Prinzessinnengarten uses gaps and brings to life what previously lay as waste” (Nomadisch Grün 2012, p.26). But more importantly, the trees themselves took up an active part in shaping the new garden assemblage. No longer a signal of decay and abandonment, they now provide shade for the café and a source of nectar for the bees. Through their open capacities for new connections, they become part of an ongoing process of place-making (Jones and Cloke 2008), guiding particular efforts and possibilities and giving rise to an experimental space of the garden.

Figure 6.10: Traces of previous projects – The Pale Blue Door shed and a recycled owl

This notion of material continuity in place-making, and the open-ended capacities of different entities to form new relations, is a fundamental aspect of how the diverse projects in the garden develop. There are traces of past experiments all over, such as a small wooden house
that had been part of a theatre project or a miniature Berlin TV tower made of recycled material. One gardener described them as an “accumulation without any purpose”, but others see them as “loose ends, something that is waiting to be taken up again.” (conversations, 21 May 2012 – for some of these traces, see Figure 6.10). These traces are public: the now-defunct aquaponics tank for example still features on the tour, with a detailed explanation and light-hearted invitation: “If anyone fancies it, you can continue with it”. Anton (PG13) echoes this notion of traces and the possibility for incremental development:

What you can say for sure is that if you build something, however small, something that is modular and that gives a signal, you can expect that building will continue on it.

This can lead to exciting new efforts, such as the dye-plant corner, which is run by dedicated regular gardener (and clay oven builder) Eva. When she came to the garden in 2011, there was already a small dye plant area on the “Dreckstreifen”, the dirt strip along the fence that cannot be used for vegetables because of its proximity to the road. She did not know much about what had happened with it before, other than “someone” had started it, but she took its presence as a cue for her own project:

This part was already here... And now [the project] just came from this basic thought that I don’t just want to show the plants here but we should do something with them. (Eva, PG5)

The next season she extended the area by half and added her own choice of plant, Japanese Indigo, a turquoise dye. This has now grown into a site for public workshops on how to extract colours and dye silk scarves. The clay oven similarly encouraged further efforts, with an increasingly elaborate roof and a wood storage area being added. Later a sign that suddenly appeared: none of the builders knew who made it. The existence of loose ends and certain project pathways hold the potential to trigger further efforts, deepening certain directions of experimentation, and it shows the emergent quality of the Prinzessinnengarten as a recognisable alternative place.

The 'place-means-principle' II: reproducible creativity and enchantment

The idea of loose ends and open capacities also applies to the second point of Anton's ‘place-means-principle’: the presence and availability of interesting materials – or what other people jokingly referred to as his “hoarder tendencies”. As I showed for the self-built homes and the composting toilet of Christiania and Can Masdeu, materials are key agents in the creation of
projects and the development of competencies. This is reflected in the projects here. The idea of the irrigation system formed through the discovery of the tanks, and periods of progress were determined by the availability of the garden hoses. The medicinal plants relied on the boxes and soil from the garden, which not only made it a feasible project but also integrated the new plant corner into the wider aesthetics of the garden. The clay oven idea too emerged because the volunteers were working with materials like sand and clay on a daily basis, and their ready availability meant an easy starting point. What is important here is that the garden explicitly cultivates such material possibilities. Like in Christiania and Can Masdeu, recycling and the associated tasks of sourcing, organising and adapting materials is an important element of the Prinzessinnengarten’s daily work and often take place on quite a large scale. The group picks items from closed down plant nurseries or takes large deliveries of unwanted items, such as 100 plastic boxes that then need to find a place to go. One time Anton made a deal to dismantle the set of an outdoor exhibition on the old Tempelhof airfield park. The full job turned out to require five people, two lorry loads and a whole day:

Julia set up the day. She warned me that [the pavilion] was big, and when we arrived on the airfield it wasn’t only big but massive – a mini-farm, as Damien pointed out. It was hard work... It involved climbing around the structure, unscrewing what felt like millions of screws, throwing down bits of roof, carrying incredibly heavy metal walls. (research diary, 29 June 2012)

The materials are kept in several storage spaces, near the workshop container and the compost, with sporadic days of tidying-up that pose their own challenges: “Lots of us willing to help but not enough people to say what to do and where things go.” (research diary, 9 May 2012). But these efforts means a presence of materials that goes beyond standard gardening items or whatever is immediately required, towards an active cultivation of broader possibilities.

I discussed the role of such possibilities in repurposed materials for both the Christiania homes and Mia’s compost toilet – the relational formation of competences and the “creative presence” (Whatmore 2007, p.35) of materials within the projects that drive their distinctive development. These patterns are repeated here, in Julia’s descriptions of her tactile explorations of different materials for the irrigation tanks, as well as many other examples: the drink container plant pots that turn old milk cartons into a vertical garden construction, or the toilet doors that are held shut by elaborately shaped pieces of hose pipe. These intriguing material practices of tinkering and improvisation are always distinctly public in the Prinzessinnengarten as the garden openly presents and draws attention to them. The milk
carton construction is one of the most photographed items of the garden, and it features on a post card with full how-to instructions. Materials are visible and present, and they are enrolled in public efforts, such as a challenge for design students to create vertical gardens with inspiration from the garden, as shown in Table 6.2. Sharing, proposing and encouraging such moments of everyday, immediate creativity is very much part of the garden routines, but it is more than a demonstration of practical or entertaining ideas. It inspires a mood of enchantment – “a cultivated form of perception, a discerning and meticulous attentiveness to the singular specificity of things” (Bennett 2001, p.37), and thus subtly fosters a more vibrant view of the world that may become a foundation of experimentation.

Table 6.2: Vertical garden models designed by students from the Academy of the Arts, with brief descriptions

<table>
<thead>
<tr>
<th>The bicycle model</th>
<th>Basic idea: mobile system to facilitate harvesting from a window – can be turned with a handle, and could be extended</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inspiration: the spare and old bike parts of the bike container in the garden</td>
</tr>
<tr>
<td></td>
<td>Material: recycled bicycle and skateboard parts, old food cans</td>
</tr>
<tr>
<td></td>
<td>Current problems: not enough tension on the chain, cans tilt when they turn around</td>
</tr>
</tbody>
</table>
The bottle model

Basic idea: problem of vertical wall planting is watering, use hose pipe as both irrigation and carrier

Inspiration: reuse of drink containers in the garden, and drip irrigation system

Material: recycled plastic bottles and the crates they come in as addition at the bottom, hose pipe

Current problems: bottle fixings extend through weight, create too much water flow, pressure needs to be more regulated

Public materiality also goes in another direction. While the ethics and economical advantages of recycling clearly matter for the garden, it is also concerned with easy reproducibility as part of its public outlook. A fundamental objective is to create solutions that have a wider use – that ensure the garden's own survival, but which can also be replicated elsewhere, in people's own gardens, balconies or homes. Everything that is done “needs to have a practical relevance, an output that is somehow useful”, as Damien remarks – which explains some of the uneasiness about the clay oven as a unique intervention. Recycling is not always the most practical approach for this:

You need simple, reproducible and functioning solutions. Ones that don't cost much, that every idiot can put together. And we are mostly idiots here, that's why we need those things. Things that are simple, quick to understand, easy to reproduce. And if something breaks, the material needs to be available again. If a box breaks, I can buy a new box anywhere. (Anton, PG13)

The rice bags are one example here. The garden shop sells them to grow potatoes, cabbages or herbs. They could also be acquired second-hand from Asian supermarkets but a more important consideration is to encourage people to try them out – and the bags, filled with some soil and a small plant, turned out to be popular presents. This emphasis on facilitating sharing and repetition also applies to other material practices, such as the original choice of the food boxes as plant containers:
We said early on that if we want this to work, we need to look at what already exists within transport logistics – and these are DIN standard containers. Four of them are exactly one Euro pallet, exactly one square metre... and you can put them on a lorry with relatively little effort. (Nils, PG2 tour)

This keeps the garden mobile but its also makes its model replicable: anyone can source the pallets and boxes, copy their set up and use the garden's existing structures of fixing, arranging and – with the irrigation systems – watering them. Both recycling and pragmatic material practices are therefore part of the garden's ongoing creative work and of its public dimension as an alternative site of learning. They cultivate a space and atmosphere of more-than-human complexity and experimentation “where enchantment, at least for some of us some of the time, seems to hang out” (Bennett 2001, p.169).

**Structures of a compromise**

The material dynamics and affordances of the Prinzessinnengarten underpin much of its alternativeness as an urban garden and an odd urban space. What emerges from this discussion is a sense of cultivation: many of the patterns that encourage enchantment and practical intervention are deliberately fostered, through the provision of materials, the public sharing of ideas, the open invitation into the space. The apparent openness therefore exists in dialogue with particular structures that facilitate it. Lily (PG8) makes a poignant observation here:

> I think the whole thing at first has a bit of an aura of something that's not so structured. But of course, as everywhere, there is structure here, whether it is explicit or implicit.

There is a particular openness that is felt, appreciated and enacted by different volunteers and project makers, but this atmosphere comes with certain tendencies of alignment. Camilla (PG15) further describes it as an interplay of open and formal structures:

> I think it is the open structures that... give a form to the garden: the garden meetings, the work with the volunteers and interns during garden working days, the whole communication that happens informally all the time. That's what... gives colour to it. And then there are structures that carry it all and hold it together, which are like the vessel where all of this can happen.

Yet this vessel is flexible and has a few holes. There are some underlying structures provided by the social enterprise model, the decision-making role of the project initiators or the requirements of hygiene and book-keeping, which are frequently reiterated in the garden
meetings. But they do not so much contain the experimental activities of the garden as provide some of the stronger, more powerful relations within its assemblage. This pushes it into certain directions but does not fix it into a final shape, reiterating the possibility of difference and unequal relations with the apparently flat ontology of assemblage thinking (Anderson and McFarlane 2011; McCann and Ward 2011). These institutionalised relations intersect with what Camilla describes as the colour-giving open arrangements: the diverse socio-material practices and everyday routines that bring together the diverse agents of the garden. These are the weekly garden meetings in which the core group of volunteers and interns deals with all aspects of the day-to-day running, discussing the week ahead, new projects, problems and ideas. A number of working groups focus on specific topics, such as the compost or environmental education. Other tools have emerged that shape daily routines: the task list, written once a week by Karl which outlines all the jobs that need doing, or the weekly kitchen harvest walk in which the current harvest plan is decided together with the cooks. These looser arrangements support possibilities of openness and therefore function as part of the wider negotiation of the garden's experimental directions.

This negotiation becomes apparent in the way the openings of the garden are enacted. Anton describes how in the beginning all kinds of ideas emerged and passed through the garden, ranging from proposals of harvesting cosmic energy to building a bio gas plant: “The people that came were different back then. They themselves would probably call themselves visionaries, others would probably call them freaks”. But as the garden grew, basic necessities and framing structures asserted their influence:

With the increase in knowledge and the experience, how things work in the garden here lots of unlikely projects also fall by the side... On the one hand that is really useful, because you don't have to spend lots of energy on projects that aren't working. But on the other hand it is also a shame because – it's a great surprise if something comes along that you think is crazy and then it works at the end. Maybe only happens in five percent of the cases, but those five percent are really quite good. (Anton, PG13)

The increasing influence of these requirements and working arrangements restricts what could be seen as blue-sky experimentation. But as the continued creation of projects shows, the experimental possibilities do not disappear; instead, they become more directed along particular lines: the wider themes of biodiversity, local food, recycling and urban planning that now shape the Prinzessinnengarten. At times, this alignment takes place through deliberate decisions or guidelines, such the now-established requirements for new projects to fulfil the basic points of working in a wider field of sustainability, being mobile and including “an
educational goal via participation, something that people can be part of” (Paula). But it is also the materiality of the space itself that builds these experimental frames. The increasing tightness within the garden means that more ideas and uses come into contact and, at times, conflict. Different aspects of the garden have very different requirements – the plants need the right mix of sun and shade and a position where no one forgets to water them, the compost needs to be tucked away to reduce smell, the café needs to be visible. The space changes organically: “So [the garden] grows bit by bit, as a big total compromise made up of smaller individual requirements.” (Nils) This creates a socio-material, evolving frame for the garden’s ongoing experimentation, that sets expectations and limitations without a pre-fixed protocol.

Just as everyday needs frame the experimentation of Christiania or Can Masdeu, here it is the ongoing compromise needed to maintain the site. Yet as an assemblage it remains incomplete and under-determined, leaving gaps and loose ends to be formed into new relations. It is this indeterminacy, this sense of possibility that is picked out as a unique atmosphere and approach by different long-term volunteers. Susan and Christina identify it as a ‘relaxedness’, a general commitment towards open flows and surprises, to letting things happen. Erik sees it as letting people do things in their “amateurish ways”, where mistakes are allowed to happen along the way. Talking about the exploratory way of building the clay oven, Martina similarly observes: “it is not about the result, it is about the doing”. This can directly run against people’s previous experiences and ways of thinking, as Camilla (PG15) explains from her experience of setting up the garden:

I think my project logic was very structured and ordered in particular tracks, and I think that was what I found a bit difficult, to tear myself away from that. I was always trying to see what the exact results are supposed to be. I think it took a while for me to understand this different approach.

Despite the structures that exist and make themselves felt at particular points of conflict or uncertainty, there remains an underlying understanding of the garden as more than a human construct. Erik (PG10) puts it like this:

Everyone individually, or also this group as people, we try to create something here. But essentially we leave the phenomenon of the garden to itself – it’s its own creature, which somehow makes its own way, without us as people being able to really plan it. There is such a willingness to say, yes, we let the garden go its own way. And the garden includes the people, too. This whole phenomenon.

The garden as its own 'creature' beautifully expresses the Prinzessinnengarten as more than
the sum of its parts (Bennett 2005), as a unique space of learning, doing and being that derives from the varying relations between gardeners, plants and materials (see Hitchings 2003). It is in this ongoing process of assembling that experimentation is negotiated and practised.

**Tactile learning in a public space**

This open-ended approach of allowing people, plants and materials to find new interactions gives rise to many unique structures in the garden, like the examples I described above. But as Martina’s observation of putting the doing over the result suggests, these finished outcomes are not always the aim. The emphasis lies on the processes that bring them into being, and a general commitment to being active and “just getting on with things” (Lily). This is reflected in the public gardening day as one of the most explicit invitations into the garden. It is grounded in an ethos of doing: the activities range from mixing soil for tomato plants to thinning out rocket seedlings or building new plants beds – like those for the medicinal herbs. Within ten minutes of their arrival people are likely to be wielding shovels or carefully separating the entangled roots of two mint plants. It is a sensory engagement: the volunteers talk about the smell of a freshly planted herb bed and the sensation of mixing sand into soil to change its texture, or at times they just stroke the leaves of young rocket plants while having a chat. There is no separate introduction to the garden; conversations, questions and explanations blend into the jobs. Whatever is learnt is part of the doing: “You get to know one aspect of the whole garden in great detail”, as one volunteer observes after mixing several batches of pumpkin soil.

This offer of engagement and getting to know through doing is a fundamental part of learning in the Prinzessinnengarten, without being explicitly labelled as an educational provision. It is not restricted to the public gardening days but threads through the day-to-day gardening work as well as the wider projects. It speaks to Julia’s slow development of an understanding of materials and processes of the water tanks, Erik’s practical acquaintance with the holes needed for a drip irrigation hose, and the sensory learning of different clay mixtures and building steps among the clay oven builders. Learning in the garden is a process that is both embodied and social, and tied to specific relevant tasks. Lily (PG8) describes this well for the surprisingly difficult job of watering the box beds in the right way:

> I feel that a lot is about tactile knowledge here. This – I have done it and done it, that’s why I know it. It’s pretty impossible to just come here and work things out through questions... Like, the watering I learn by doing it and then Anton comes along and taps you on the shoulder and says, ey, don’t water like that, I’ll show you. So you have to watch, then you have to go through the process
once, or maybe also two or three times, and then maybe Karl comes and says, but not like that either [laughs]. And then you go uuh... And that's what I mean with tactile knowledge. That you have to experience a lot of things through the body.

This experiencing through the body expresses a performative and sensuous form of knowledge-making (Carolan 2007; Hetherington 2003; Ingold 2006b) that is constantly in formation: there is no right way of watering – it is a practice of approximation, of adapting and integrating different methods into a new embodied practice. It enrolls the senses in an ongoing dialogue between gardener and world, judging when to adjust the hose pipe and slowly settling one's movements into a practice rhythm. Such learning suggests a certain confirmation of place through contact: “not a big picture but a fragmented one: local, specific, incomplete, multiple, personal, erroneous perhaps, but scopic nonetheless” (Hetherington 2003, p.1942).

These tactile moments permeate the diverse projects of the garden. Combined with the openness of directions and structures, they become part of a subtle and unpredictable dynamic of learning, one that the volunteers describe as “chaotic” (Eva) or “spontaneous” (Erik):

This is why I find this space so energetic, so powerful, [because of] the learning that happens here. In a very special way, not with a curriculum and a teacher who knows everything. It's like a spontaneous learning. Here is a bubble, there something arises. That's why I also like to just walk around with [people], just listening, just being sprinkled. Sometimes I remember something directly, sometimes I just soak it up and know it will find it right place. That's very alive here. (Erik, PG10)

Although at times the more experienced gardeners would run a session on a certain topic, perhaps how to build the plant beds or take plant cuttings, much of the learning arises simply from the activities in the site. The outcome of this is often unpredictable, as the women of the medicinal plant project indicate:

Of course you could say that it would be easier if there was a clearer point of contact, or if someone would give a full introduction... But to be honest, I think it's better that some things are left to chance. Like who happens to be around, and deals with you with what time and knowledge... You can be lucky or unlucky, but that's ok. (Susan, PG6)

The open dynamics of asking questions, learning from different people and having to gather resources for a project means that 'success' is not guaranteed – differences in expectations or motivation can get in the way, ideas get stuck. But this learning as a kind of wayfinding (Ingold
2000) allows an experiential and productive way of engaging with the garden and its activities (Figure 6.11), with bearings on one’s wider relationship with the world (Crouch 2003a; Ingold 2007).

These patterns of sensuous and chaotic learning makes the Prinzessinnengarten what Carolan (2007, p.1267) calls a “tactile space”, a learning space with both “a participatory component, which allows individuals to engage in an exchange of knowledge claims through being embedded in social networks, as well as a lived, non-representational component, where individuals physically negotiate their surroundings in an embodied way”. Tactile spaces allow people to experience bigger questions in a direct, embodied and often muddy manner by working alongside others, for example in the context of community supported agriculture. Knowledge here emerges as a slow process of sense-making, based on the affective relations between body and material in the site (Harrison 2000; Thrift 2004). Bringing bigger issues into a tactile realm is an explicit aim for the garden, as the advertisement for the public gardening day on the website indicates:

During [the public gardening days] you can get your hands dirty with us and learn useful things about ecological vegetable agriculture in the city, heritage varieties, seed saving, composting methods, seasonality, use and storage etc. (Nomadisch Grün 2014)

Volunteer Martina (PG16) echoes this through her own experience of moving between practical doing and wider thinking:
All the important topics bundle themselves here for me... In the summer I was able to experience this place very directly; I was gardening. And then during the winter I occupied myself with what this space actually means, what are the bigger ideas.

Learning in the Prinzessinnengarten therefore goes beyond the acquisition of useful skills of gardening and speaks to the wider understanding of the garden as site of connections. By creating the space for tactile, social learning, it shapes its own position as more than a place to grow food and develops a distinctive experimental approach to urban and global issues.

**Experimenting with bigger questions**

Following Ingold (1993, p.158), it is therefore useful to think of the Prinzessinnengarten as a unique kind of “taskscape” in the city, a heterogeneous “array of related activities” which speaks to the atmospheres and landscapes created by the active patterns of practices. Different forms of a taskscape produce different rhythms and consequently, qualitatively different relations. The taskscape of the garden is clearly set apart from the wider urban environment. Eva describes it as an “island” and “oasis”, in which the bustle and stress of the city do not fully intrude. Its practices are variously demanding or relaxing, repetitive or exploratory, but they mostly follow an approach of openness that puts the communal doing over the result. There are no fixed aims, only stated intentions, which speak against much of the wider dynamics of the city, described by Susan as a “quick, quick, everyone for themselves, fast” mentality. At the same time, the Prinzessinnengarten sees itself very much as a part of the city, not an escape from it. Traffic noises and sirens punctuate my interview recordings and mingle with the sound of leaves and birds, and other than briefly pausing a conversation, no one comments or complains. Bee keeper Martin deliberately sells his produce as ‘urban honey’, and the gardeners have found ways to deal with air pollution – wash produce thoroughly to get rid of particulate matter, leave a 20 metre gap to the road to avoid heavy metals. This sets up an ambiguity towards the city similar to that of Christiania and Can Masdeu, with the garden acting as a spatial break as well as providing new modes of connection (see Werner 2011). Part of this is an explicit focus on relevant work. As Anton clearly states: “This is not a sandpit. It is also not a space for culture – it is not for playing.” Ideas and trials need to have a wider application to find their space within the garden.

These ambiguities manifest themselves in terms of the wider experimental role of this unique learning space. Many volunteers in the Prinzessinnengarten see their experience in the garden,
this tactile and spontaneous learning, as inspiration and active facilitation of new ideas elsewhere. This might relate to gardening efforts – some plan to grow a few plants on their balcony, others seek to start a community allotment. But the multiple dimensions of the garden and its process-oriented approach facilitates wider opportunities here. People acquire new skills and ways of thinking that enable them to do new things in their life. As Lily says: “Practically speaking I can work a lot better with wood since our worm composting box building. I also immediately started building myself a bed, because I loved it so much.” Others create their own projects outside, ranging from an urban foraging tour (Damien) to a DIY network and housing collective (Susan). This wider inspiration also applies to the conceptual level and the questions the garden raises around issues of biodiversity, sustainable food and urban planning (see Figure 6.12). Martina (PG16) indicates how the garden has influenced her work as a freelance journalist:

[The garden] gives me a kind of compass for themes... in my work. I have done some social-political topics before but also told a lot of stories about people. And I always had the feeling that it needs to become more political, I want to become active. But I never knew how to bring the important topics together.

The assemblages of chaotic, spontaneous, tactile and social knowledge creation facilitate a personal urban learning which connects to other areas of people’s lives in the city, and which makes the Prinzessinnengarten relevant as an urban experiment.

Figure 6.12: The garden and its themes. Sketch compiled for UniGrowCity workshop 11 May 2012
Its experimentality also works on another level. As well as providing space for individual projects and the tactile learning that comes with them, it is “a laboratory for socially and ecologically sustainable forms of urban development” (Clausen 2013, p.2). This links to the garden's existence within the wider urban landscape, and the ongoing debates around Berlin's real-estate and urban development policy. As a city in the process of rapid renewal, there is an increasing controversy around existing real estate property, as much of it is being sold off to private investors (for an ongoing discussion on this, see Initiative Think Berlin 2014; Novy and Colomb 2013). The plot at the Moritzplatz had been slated for sale when the garden took its temporary lease, effectively at the mercy of potential investment interests. The alternative to profit-driven development presented by the Prinzessinnengarten therefore became a symbol of these debates as well as an experiment in addressing them, as Nils (PG14) explains:

This garden was not created as an architectural, urban planning, city development project. But because we are doing a garden in the city, on a brownfield site that is owned by the city, there is an unintentional political role. Because it shows that our normal dealings with public and urban spaces could look differently. The garden as such, whether it is mobile or not, makes this statement.

The result of this is an active involvement of the garden in urban forums, policy advisory groups and academic discussions (Allmende-Kontor 2014; Initiative Stadt Neudenken 2011). One of the emerging aims of this work is to push for greater citizen participation in the decision-making process regarding the future of the site. On the basis of a signature campaign, the garden’s contract has now been extended for five years, but ultimately, the idea is not to build a fixed endpoint but to set up a more participative decision-making process. Alongside these immediate political concerns, the garden also acts as a forum for wider future-oriented themes, as Nils continues:

And then there is a parallel discussion, more visionary-utopian, about how cities need to be set-up for changing circumstances. What does climate change mean for a city? What does it mean if particular resources are no longer available, like oil? Space – 20 percent of spaces in the city are reserved for cars. What do demographic change, social division, increasing rents mean? How to deal with these things in the long run.

The Prinzessinnengarten speaks to these issues through its mundane practices, its projects and offers of learning. It functions as what has been described an “obstinate place” (Werner 2011, p.54), which is political not through explicit resistance but through a collective insertion of alternative practices into urban space. As an assemblage, it cultivates its own dynamics that, as Murray Li (2007, p.279) states, “cannot be resolved into neat binaries that separate power from
resistance, or progressive forces from reactionary ones.” The “[f]uzziness, adjustment and compromise” that are critical for assemblages help create the garden as an open, multiple alternative, which continuously negotiates its wider experimental role in the face of different urban discussions and pressures (see Figure 6.13).

Figure 6.13: Bigger questions asked by (and of) the garden

Tactile moments of learning, opportunities for relaxation and social encounter, and grounded discussions of wider urban and ecological issues are not exclusive to the Prinzessinnengarten. What singles it out as an experimental space, however, is its invitation to engage with such practices in the everyday environment of Berlin-Kreuzberg. It becomes a space in which alternative approaches are employed in diverse projects and shared as public goods with wider relevance. Its open possibilities arise from a loose understanding of the garden as its own ‘creature’. It is held together by underlying structures and compromises that navigate different needs, but within those the garden presents gaps and free spaces that can be taken up in different ways. More than the previous two cases, the Prinzessinnengarten is a distinctly public experiment, reflecting the material engagements and embodied modes of participation that
have been described in the context of interactive exhibits and a material politics (see Barry 1998; Marres 2009). It explicitly cultivates possibilities for public experimentation, through its provision of space and materials, and its mistake-tolerant approach. Engagement comes to be performed through the tactility of the practices, creating affective relations to materials as well as conceptual links to wider questions. This again echoes the notion of the urban laboratory, here focused not on testing one specific alternative but providing the ground for diverse experiments and different approaches. Its experimental directions and frames emerge from open invitation, making it a highly visible and continually evolving urban experiment.
The starting point for this research was the extensive interest in experiments in the contemporary city, and the many applications of this term in projects that ask questions about and test responses to existing configurations. Urban alternatives mobilise experimentation as a means to create, sustain and evaluate their critical utopian visions of building a different future in the here-and-now. The aim of my research was to sketch out these linkages, disentangling hyperbolic claims from the specific dynamics experimentation can bring to urban alternatives. This also included a reassessment of the notion of the experiment itself to include the diverse lived grassroots efforts that exist in the city. The research explored three different experimental urban alternatives, three interventions that introduce an alternative way of living and being into the city, and which have been given or adopted the label of experiment. It traced specific projects and practices in each site to show how the experimentality of these interventions comes into being in a distinctive assemblage. In this concluding chapter, I want to bring these individual discussions together and set them into the context of themes of urban learning and innovation, thereby outlining the promises and potential roles of experimental alternatives. This also indicates a political dimension with implications for the wider perception of urban alternatives and the understanding of experimentation within a “self-experimental society” (Gross and Krohn 2005), where daily life becomes both the forum and context of an ongoing experiment.

**Assemblages of alternative experiments**

The literature review in Chapter 2 sketched out a wider understandings of alternative urban spaces, pointing to the notions of de- and re-familiarisation, de-commodification and work across difference that characterises them (Crawford 1999; Iveson 2013). These processes frequently involve claims around experimentation, with discussions of grassroots innovations (Longhurst forthcoming.; Seyfang and Longhurst 2013; Seyfang and Smith 2007) and urban laboratories (Evans and Karvonen 2014; Karvonen and van Heur 2014) taking these suggestions into the context of lived and locally practised efforts in the city. A deeper engagement with the complex notion of experimentation revealed experiments as increasingly heterogeneous,
collective and contingent forms of knowledge-making in society. It showed an extension of the spaces of experimentation, broadening the importance of place and place-making in knowledge claims (Gieryn 2002, 2006). It also pointed to the involvement of diverse research collectives, including both human and non-human actors (Hinchliffe et al. 2005; Latour 1993; Whatmore 2007). Consequently, experiments in the 'wild' emerge from the ongoing negotiations of these diverse actors and their everyday practice, and are therefore best understood as indeterminate and incomplete socio-material assemblages. It is through their gaps and fissures, their inconsistencies and tensions that new knowledge can arise: they leave room for surprises, which drive an ongoing reworking of expectations and interventions (Gross 2010b). There is no easy definition of experimentation that could be transposed onto urban alternatives or grassroots initiatives. The question to be asked instead is how they are assembled as the sites of locally relevant and action-oriented knowledge production.

The case studies of Christiania, Can Masdeu and the Prinzessinnengarten presented three such assemblages, with overlapping themes but distinct experimental dynamics identified as balancing, integration and cultivation. As an experimental assemblage, Christiania is based on the careful balancing of varied and often conflicting trajectories. The Freetown is characterised by an extremely diverse set of experimenters and a dedication to personal freedom, expressed in the possibility to 'live life artistically', which allows residents to build and pursue a life according to their own ideals. This diversity never combines into a unified whole, and it requires negotiation within everyday life, facilitated through the decision-making structures, alternative institutions and an underlying understanding of a communal spirit that both supports and limits individual efforts. The result is an experimental assemblage that manifests itself in both an aesthetic and structural separation from the wider city, and which facilitates learning both within personal building projects and through its visible existence as a space of alternative urban governance.

The eco squat of Can Masdeu shares many of these dynamics. It too is based on a creativity of the everyday with which it responds to the challenges of building a resource-conscious, low-impact life in an abandoned hospital. Yet its experimentality emerges from what I described as processes of integration, which enrols people, materials and skills into complex and interconnected everyday practices, as illustrated by the routines of food-making and squat tech building. This integration takes place through the formation of new competences and adaptations on the basis of joint values that respond to the absence of formal regulation. Experimental openings emerge from this process of assembling, framed by changing
circumstances and ongoing practical evaluation. The squat also contains a public dimension, as it seeks to share its practices through some limited offers of getting involved. Here, it draws on its distinct position as a 'rurban' project that brings rural approaches and possibilities into contact with urban dynamics and challenges. This makes it a locally responsive grassroots effort as well as an integrated experimental assemblage with a wider relevance for knowledge-making.

The urban garden Prinzessinnengarten is the most distinctly public of these case experiments. More than a community garden, it takes up a variety of local and global themes in its efforts and hosts a wide range of projects. The creation and development of these projects reflect many of the everyday dynamics of the previous two cases, in terms of improvisation and the appreciation of non-human input in the formation of relations. Yet the garden explicitly cultivates these dynamics in a public field, with an open invitation of participation and sharing. It provides the social and material hooks that attract diverse people and ideas, and it offers a mistake-tolerant approach to learning and doing. At the same time it navigates these efforts through social and material compromises that maintain further possibilities. This careful cultivation of possibilities assembles the garden as a tactile space of learning in the wider city, bringing wider questions of alternative urbanity into grounded practice.

Within these distinct processes of assembling, there are a number of recurrent dynamics and elements. All three sites have a clear appreciation for the material world as an active agent in their experimental practice. This is expressed through the emphasis on recycling and the repurposing of materials with its idiosyncratic inputs for building projects, but also through a wider appreciation of the vibrant possibilities for problem-solving and learning inherent in materials. In each case, these possibilities are set against other dynamics of need, lack of resources or conflicting aims that limit them, and which require negotiation. A further joint dimension is the experiments' ambiguous relationship with the city. They appear somewhat removed or separated in terms of aesthetics, governance, atmosphere or approach, yet through their practices and concerns they are intimately connected to urban issues and processes. This hints at the relational constitution of such urban laboratories that transcend dichotomies of alternative/mainstream. The initiatives also practise their experimentality in a public field, as either a visible challenge, a site of inspiration or an offer of practical engagement. It is from these common patterns that the potential of experimental alternatives for urban change becomes clear.
Knowledge-making as a knowing-in-practice

What jointly emerges from these experimental assemblages is a distinctive approach to knowledge-making. Residents, builders and volunteers learn through an active involvement in the practices of the sites. The practical engagements with materials and problems, and the social framing of these experiences, provide what Crouch (2003b, p.23) calls a “feeling of doing”, which “highlights our grasp of the world around us as felt”. When Eddie lays the floor of his house with Dean’s advice, when the toilet builders make timber joints from recycled wood or the garden visitors mix tomato soil, they are all engaged in a particular kind of learning that can be understood as embodied, tactile and performative (Carolan 2007; Ingold 2006b). Hetherington (2003, p.1934) also describes this as proximal knowledge: a knowledge that is “performative rather than representational”, as well as being “context-specific, fragmentary, and often mundane”. Unlike representational ways of knowing the world, which privilege abstraction and pre-formed outcomes, proximal knowledge casts learning as a process of exploration and approximation. It is more than a straight copying or repetition (see Ingold 2006b), as it requires an ongoing adaptation of movements and observations into new practices. This emphasis on tactile and proximate learning, which I already started to outline for the Prinzessinnengarten, puts the spotlight on the wider notion of “knowing in practice” (Ibert 2007, p.105) as the knowledge-making that defines alternative grassroots experiments in the city more generally. This is a situated and performative understanding of knowledge as an active process of ‘knowing’, which contrasts with the rationalist view of knowledge-making as an “agglomeration” (ibid, p.104) of discrete entities of knowledge. This active knowing takes up the possibilities presented by an extended view of experimentation, drawing on the constitutive role of place, heterogeneous actors and practices within the knowledge assemblage (see Figure 7.1).

Place emerges as an important element in the knowledge-making of the alternative experiments, not because of any intrinsic or deliberately designed features of the spaces but as the result of ongoing processes of place-making. The patterns and practices of the sites created the daily rhythms (see Edensor 2010; Lefebvre 2004) that grounded their experimentality, some of which over time crystallised into distinctive physical constructions and buildings, marking out a distinctive aesthetic or atmosphere. The alternatives can therefore be described as “dynamic laboratories, animated environments which constitute laboratories in the field” (Thrift 2009, p.93), which combine the truth-making capacities of labs and field sites (Gieryn 2002; Kohler 2008). These place dynamics are a first contributor to the knowing-in-practice in
As Ibert (2007, p.108ff) shows, knowing-in-practice draws on the specificities of place to facilitate local engagement and relational participation in learning – what he describes as the “argument of place”. The place element might be a very specific material construct, as exemplified in my case discussions of the compost toilet and the DIY irrigation system around which particular patterns of competence formed (see Pantzar and Shove 2010). But it also extends to what has been called an ambient awareness (Grabher 2002): the wider activities, co-presences and “atmospheres” (Edensor 2012) of the sites. As Longhurst (2013) observes, existing institutions and established groups are contributing factors in the creation of alternative milieus as they attract and invite new participants and projects. This also includes intangible aspects, the rhythms, flows and “active coproduction of an affective milieu” (Edensor 2012, p. 1119) in the sites, that in turn gives rise to new openings and possibilities. The alternative institutions of Christiania, the integrated and shared value commitments of Can Masdeu and as well as the “atmosphere of activity” (Lily, Prinzessinnengarten) that volunteers and visitors identified for the Prinzessinnengarten can all be understood as part of this coproduction. The place-dynamics of these grassroots alternatives thus support their tactile and practice-based learning.

A second common dimension of collective experiments and knowing-in-practice concerns the central role of the non-human world. In the experiments of urban grassroots alternatives, the more-than-human performances of knowledge-making emerged through the negotiation of
obstinate materials, integrative practices, the formation of competence and the engagements of a 'place-means-principle'. All three sites cultivate distinctive material practices that speak towards a full acknowledgement of the agentic contributions of objects and things. This includes an ethics of care (Popke 2006) towards the local environment that extends from the human subject, but they also recognise that these are interactions and affective relationships that go both ways. The alternatives frequently draw on a vital materialist understanding of the world that casts non-humans as vibrant, quirky and filled with their own liveness (Bennett 2010). As such, notions like 'environment' and 'surroundings' come to be replaced with “a true reciprocity between participants of various material compositions” (ibid, p.102). It is in these reciprocal relations that opportunities for new openings and directions can be found, as they enable experimental crossings and metamorphoses which express “the desire for mobility, for the space to become otherwise, to exercise your faculties, play around, shift the scene, shuffle the deck, change places, look forward to something” (Bennett 2001, p.28). This too supports the idea of learning as a knowing-in-practice. Ibert (2007) distinguishes between engagement and participation as modes of collective learning. Engagement describes the local involvement in a practice, where “practitioners store the collective experience at a location without freezing it to inanimate facts” (ibid, p.108-109) – the shared learning among builders, residents and visitors in the sites that is driven, demanded and at times derailed by materials and other non-human actors. But this knowing-in-practice is not only place-bound: it is performed through shifting collectives of actors that merge or disperse over time, and whose members move between different sites and groups. This forms relational connections of participation, in which “[p]rocesses of knowledge production enact a network between a multitude of places of learning” (ibid 109). Although this was less of a focus in my discussion, the non-human role in enacting other networked places began to emerge here too: in the replicable box bed arrangements of the Prinzessinnengarten or the sharing of specific projects and set-ups such as the brewery and bee hives in Can Masdeu. The experimental openness to more-than-human collectives pushes a materialist approach beyond the idea that daily life involves materials “towards an appreciation of these materials as active and to understand the changing role of materials in constituting learning in contexts of daily survival, experience, inequality and possibility” (McFarlane 2011a, p.163).

Bringing these dimensions together, knowing in experimental urban alternatives can be described as “an ongoing social accomplishment, constituted and reconstituted in everyday practice” (Orlikowski 2002, p.252) – a knowing-in-practice that emerges from an ongoing formation and negotiation, the balancing, integration or cultivation, of the learning
assemblage. The outcome of this varies between the cases but manifests itself along two main dimensions. The knowing-in-practice firstly produces locally relevant solutions and competences, which address immediate needs and challenges of living and working in the alternative sites. Many of the individual projects I described illustrate this: the self-built homes that respond to housing needs in Christiania, the sanitation infrastructure and community practices in Can Masdeu that work with the challenges of an abandoned building, or the irrigation system of the Prinzessinnengarten that emerged from a particular problem of watering. This clearly resonates with the activities of grassroots innovations more widely, in which “[m]eeting social (and environmental) needs is the primary function” (Seyfang and Smith 2007, p.591). What separates my case studies from other alternatives is a second, public angle that extends this local work. This was evidenced by the tours all three sites offer, and their explicit efforts to share and network their work, although the degree to which this publicness influences the experiment itself varied. There are many direct ways of engagement, ranging from public gardening days to shared dinners, project creation and the open offers of alternative institutions. This renders the alternatives visible, not only through their distinctive aesthetics or rhythms, but because of their invitation to get to know, experience and learn them. It speaks to the notion of urban laboratories as both useful and visible urban interventions (Evans and Karvonen 2010), yet with a less strategic and greater grassroots outlook than many of the examples analysed in this field. The outcome of this public knowing-in-practice is a distinct political potential for these alternatives, that draws on the possibilities of material engagement and object-centred participation (Braun and Whatmore 2010; Marres and Lezaun 2011). The experiments provide the dynamics and openings for people to engage with wider questions, from urban planning to climate change and resource use, by becoming experimenters or by forming new relations along which the experimental ideas travel.

As a first concluding insight, then, these observations substantiate and confirm the need to approach experiments in a more flexible, relational and processual way. They highlight the importance of often subtle or mundane practices in the creation of an experimental setting where the subject matter is the real world: grassroots efforts, DIY interventions or insurgent spaces in an urban setting. This expands the socio-technical niche approach to include a more holistic perspective on interlinked practices and a wider set of actors. It also re-focuses the notion of urban laboratories on more directly lived and living spaces rather than strategic or deliberately designed interventions, as they provide unique possibilities for a knowing-in-practice. Furthermore, it suggests an assemblage perspective as a useful way of engaging with these experiments, contributing to the ongoing exploration and development of this particular
approach to urban and societal studies. Having outlined the 'useful' and 'visible' possibilities of learning in these alternative experimental assemblages, we now need to consider their wider relevance in the city. This brings the discussion back to the question of urban learning: how do these three cases enable, drive and support processes of urban knowledge-making and innovation?

**Alternative experiments as a source of critical urban learning**

In Chapter 1 I argued that the widespread interest in urban alternatives and experiments should be brought into dialogue with the notion of urban learning, as they share an interest in innovation and the ways in which cities develop their policies and structures towards a better future. Yet the exploration of international policy mobility highlighted that prevailing forms of learning are strongly driven by entrenched forces, in particular dominant economic concerns and neoliberal modes of thinking (see McCann 2011; Ward 2006). This obscures other, alternative forms of urban knowledge-making: those processes that do not fit neatly with existing models and directions, which are less visible and documented and which are therefore mostly absent from discussions. As Gibson-Graham (1996, 2008) remind us, discourses are performative: working towards an alternative world also means disentangling oneself from dominant strands of thinking, finding their cracks and gaps and paying active attention to examples where economic, social or environmental relations are already practised otherwise. Thinking about alternative modes of urban learning therefore means searching out the spaces in which the city is already produced and remade in a different way: alternatives of insurgent citizenship, of DIY or guerrilla urbanism, many of which work through an experimental approach to knowledge-making. This means not only detailing substantive examples of insurgent urbanisms – the efforts of squatters, subversive artists, urban explorers or guerrilla gardeners, to name a few. It also implies engaging with how these efforts open up new ways of urban learning, and in particular, how an experimental approach expands existing paths of knowledge-making in the city. Some openings for such a wider view, I argued, are offered by McFarlane (2011a, 2011c), whose work introduces the possibility of a more critical approach to urban learning. Engaging with more diverse and complex learning assemblages in the city can reveal “imaginaries, logics and practices that entail learning a new kind of city” (McFarlane 2011a, p.154), away from the prevailing neoliberal model. This includes methodological questions about how such alternative learning becomes possible.

In his discussion, McFarlane (2011a) identifies three interrelated dynamics by which urban
learning arises in diverse assemblages, and which will be useful to assess the critical potential of experimentation: translation, coordination and dwelling. Translation refers to the relations and distributions through which learning is produced, with a focus on displacement and change – in short, how knowledge moves. This goes beyond a traditional diffusion perspective, in which knowledge is treated as discrete objects and entities to be possessed, exchanged, or stored (see Ibert 2007) and transmitted from a central point. Translation describes such movements as more contingent and produced. As McFarlane (2011a, p.16) puts it, “the spaces and actors through which knowledge moves [which] are not simply a supplement to learning, but are constitutive of it”, in a process that is “amplifying, distorting, contesting, or radically repackaging knowledge” (ibid, p.17). Because of the multiplicity and fluidity of these spaces, actors and processes, these domains need to be coordinated and aligned for during translation. This essentially means finding ways of dealing with complexity and uncertainty of the urban realm, which is achieved through existing institutional structures or regulation, but which can also include more unusual, bottom-up forms of negotiation that align different actors through a “process of sociomaterial adaptation” (ibid, p.19). Underneath these processes of translation and coordination, learning is fundamentally lived in the urban context, which McFarlane describes through the notion of dwelling (see also Ingold 2000, 2009). Dwelling connotes a process of haptic immersion, of inhabiting rather than occupying the world, that emphasises the body and the immanent and emergent aspects of sense-making in everyday environments (Harrison 2000). It also suggests our relationship with the world as mobile and active. This account can now help to situate alternative experiments in the wider context of urban change as examples of alternative urban learning assemblages.

The grassroots experiments I discussed are not deliberately designed laboratory interventions but lived alternative spaces that facilitate what has been described as a knowing-in-practice. This takes up the element of dwelling in urban learning, the knowing that emerges from an ongoing immersion in everyday patterns and rhythms. Everyday practices are never static, they require an attunement and slow getting-used-to – an incremental “education of attention” (Ingold 2000, p.167) of one’s perception in relation to the demanding and complex socio-material environment of everyday life. Such an education involves movement and action, it is open-ended and it is situated in a “practised ability to notice and to respond fluently to salient aspects of the environment” (ibid), which facilitate the adaptive and flexible modes of inhabiting an (urban) environment. In my case sites, this occurs when people build and maintain their homes, when a resident prepares dinner or bakes bread for her community, when a volunteer waters the young plants or fixes a tomato house. This dwelling is unique for
each of them, but they are also each different from the mainstream city in at times exhilarating, at times challenging ways. Such processes of everyday inhabitation, particularly where they diverge from established expectations, mostly lie outside traditional avenues of urban planning or policy discussions. This is partly due to the hidden and diffuse nature of everyday life, but it is more importantly a consequence of unequal power relations that casts particular kinds of urban dwelling as marginal (see Roy 2005) – the informal settlements described by McFarlane (2011a), but also the squats, autonomous spaces and community gardening efforts of my case studies.

McFarlane (2011a, p.54) identifies some potential power of such alternative forms of dwelling and learning through what he calls “tactical learning”, drawing on DeCerteau's (1984) distinction between powerful strategies and resistant tactics. DeCerteau's work suggests the possibility of countering the totalising strategies of power in the city with everyday practices and knowledge. Mundane acts of walking and working, of building and planting can exploit the cracks and blind spots of such controlled systems as undetected and subtle means of transgression that subtly subvert and bend the city (Amin and Thrift 2002). This provides one outlook on critical urban learning through alternative dwelling, yet DeCerteau's account has been criticised for an overstatement of the resistant potential of the everyday (see Morris 2004). My discussion of alternative urban experimentation offers a different option here: urban alternatives that actively build an experimental dimension can put the spotlight on their unique everyday practices of dwelling through their public visibility (see Figure 7.2). This may take place by showing visitors around the intriguing structures that result from alternative ways of dwelling or it may be more direct: a knowing-in-practice of gardening, baking bread or building plant beds that reveals practices and structures that would otherwise remain hidden. The result is an opening up of these alternative practices that exposes them to a much wider audience, that starts discussions and research as well inspiring new efforts. It avoids essential claims of tactical subversion, and instead invites an engagement with alternative modes of dwelling on their own terms, such that “resistance is perhaps better seen as hard-wired into the productive daily acts of project building rather than as part of direct action and confrontation” (Chatterton and Pickerill 2010, p.482).
Closely intertwined with this visible dwelling in experiments is their role in processes of translation and coordination of alternative knowledge. The central point here is that critical and alternative urban learning cannot be sufficiently captured by traditional models of diffusion that focus on the movement of concrete knowledge, outputs or solutions along clearly visible and coordinated channels. Instead, translation needs to be understood as a more diverse process of sharing that fundamentally means enabling others to enact the knowledge practice in question (Orlikowski 2002). Consequently, coordination is not limited to codified structures and regulations to guide knowledge transfer, but refers to the different tools that may facilitate this enactment in the context of the complexity and uncertainty of the city. This is where experimental alternatives have much to contribute. As well as developing new ideas and solutions, they are also spaces of what in the context of organisational knowledge management has been described as a “culture of experimentation” (Goh 2002, p.260), of an appreciation of problem-seeking and problem solving with a tolerance for mistakes and open avenues of learning. As such, they offer the possibility of enactment and learning that navigates rather than reduces the conditions of uncertainty and surprise, and which does not make any judgements about what it is that should be shared. I outlined a number of different approaches that exemplify this experimental culture: the pervasive appreciation of artistic everyday living in Christiania, the shared value-making and rejection of traditional work patterns in Can Masdeu, and the open or relaxed attitude to projects and goals in the Prinzessinnengarten. These approaches recognise the indeterminate and incomplete nature of
knowledge-making in practice – the proximate and tactile learning that “deals in the continuous and the 'unfinished’” (Cooper and Law 1995, cited in Carolan 2007, p.1269). Openings and surprises are part of this learning, created through the diverging opinions in social learning situations or the challenging contribution of obstinate materials to fragile assemblages of competence. This contributes to the sites as places of “chaotic learning” (Eva, Prinzessinnengarten), which in turn allow different actors to negotiate their relations in practice. The outcome is that such grassroots experiments provide exciting possibilities for learning, but rarely with a focus on specific solutions. They instead offer possibilities of immersion, of knowing-in-practice, that provides the groundwork, the challenges, value shifts and inspirations for new ideas in the wider city.

Through their focus on knowing-in-practice experimental grassroots alternatives offer a valuable contribution to a critical urban learning that challenges established paths. They firstly highlight the essential role of dwelling in urban knowledge making, and through their public visibility, they bring alternative everyday practices of inhabitation to public attention. Secondly, they cultivate a culture of experimentation that makes them alternative coordination sites, not focused on the creation of specific paths and channels of diffusion but on the enactment of incomplete, uncertain and surprising knowledge-practices. These specific contributions to urban learning are grounded in their experimentality that sets them apart from other grassroots efforts. It also distinguishes them from other experiments: where traditional socio-technical experiments work towards an underlying goal of innovation diffusion, grassroots experiments present a wider notion of practice-based translation, suggesting the need to augment the discussions of the innovation-niche approach in relation to urban experiments. While my research has sketched out these possibilities for alternative urban learning, it also suggests the need for further work here. One valuable direction would be to follow the processes of translation in and through alternative experiments more specifically, focusing on the multiple spatial and temporal relations that connect different sites and initiatives and which enact the openings for knowledge-making I have shown. This includes further work on how such translation can be supported, such that ideas and approaches that emerge in alternative experiments have a chance to enter urban policy and planning practices more widely.

Rethinking urban innovation as incremental improvisation

Alongside this contribution to urban learning, the discussion of experimental alternatives also
speaks to issues of creativity and innovation in the city. The focus on translation through practice questions established notions of innovation diffusion, but grassroots experiments raise an even more fundamental point: they ask what innovation means in the context of urban alternatives. Alternative experiments can offer distinctive perspectives on processes of creativity that move beyond ideas of goal-oriented novelty. The three experimental spaces have been shown as creative and innovative in this research: shaped by everyday resourcefulness and the 'art of improvisation' they offer unique constructions, ingenious solutions, spaces for personal expression and odd projects. But their stories also revealed these creative outcomes not as examples of deliberately designed novelty. The self-built homes in Christiania were the result of slow processes of building, sometimes over decades, without a clear plan and based on much serendipity and changing stories. Mia’s compost toilet similarly emerged from a process of forming competence, while projects in the Prinzessinnengarten were described as a ‘chain of coincidence’. The key observation about these creative constructions and projects therefore is their emergent quality. I described them as grounded in an ongoing conversation between human and non-human actors (Sennett 2008), in complex and contingent assemblages of competence (Watson and Shove 2008) involving people, materials, tools and wider structures. As ‘squat tech’ projects that make use of odd materials and diverse knowledges, they rely on an openness towards different and surprising kinds of relations that form over time.

The constructions and solutions of the experimental spaces exemplify a particular improvisational urbanism, in which the creativity of the effort is not an immediate outcome but an incremental process. Improvisation requires an ongoing, active engagement with the world, during which one becomes attuned to objects and their capacities. As Ingold’s (2000, p.166) theory of haptic perception suggests: “the information picked up by an agent in the context of practical activity specifies what are called the ‘affordances’ of objects and events in the environment”. Practice, over time, allows a familiarisation with the material world, and it opens a sensibility towards its openings, gaps and possibilities, which then enables the formation of new connections. Improvisational learning, as McFarlane (2011a, p.36) puts it, “takes place by seeing not just materials, but possibilities – in this case of bringing materials into new interactions”. The responses and enactments of these possibilities take time. Drawing on the case of informal urban housing, which often appears creative, McFarlane (ibid, p.39, original emphasis) argues that the perceptual attunements of improvisation should be seen “not as sudden shifts, but as a process of creatively tinkering with urban space that emerges through incremental learning” – they are “not simply ad hoc but the product of tinkering and
tweaking through urban assemblages”. Different parts and materials build upon each other and change use over time. The same goes for the homes and other constructions of my case sites, where a door may become part of a compost toilet wall or flour tanks build an irrigation system. These constructions emerge through what Christiania builder Arne called a 'small-step architecture' in response to the availability of materials or spaces. The creative outcomes, therefore, should be understood as incremental assemblages of improvisation.

This has consequences for the picture of innovation in alternative experiments. Rather than searching out instances of novelty, the examples of the compost toilet and other structures suggest that it might be useful to describe innovation in more relational, incremental and processual terms. Barry (2001) argues against an outcome-oriented approach to innovation through an interest in what he calls inventiveness. Too often societal change is equated with technological innovation that suggests neatly packaged solutions to be distributed or diffused. Although there is a general recognition of the social dimension of technological novelty, this creates a false expectation of radical and replicable solutions, an understanding that still shapes much of the outlook on experiments in the transition literature. As the examples in this work suggest, this misses many of the exciting and useful aspects of grassroots experiments in the city: the locally responsive squat tech solutions, the integration of unusual construction with communal practices and the importance of alternative, mistake-tolerant and open approaches to learning, working and living. To counter this, Barry explores inventiveness as a driver for change which is situated in new configurations of actors around an issue, in new ways of thinking and doing that includes technology but which extend to wider relations. What is inventive and productive of change, he argues, “is not the novelty of artefacts and devices in themselves, but the novelty of arrangements with other objects and activities within which artefacts and instruments are situated” (ibid, p.211-12). This takes up the relational approach of assemblage thinking which sees “the production of difference – that is, the moment of innovation and creation – as an effect of an arrangement” (Anderson and Wylie 2009, p.329). Alternative experiments therefore propose a view of innovation based in relations, which allows a broader appreciation of the work of alternative sites.

This improvisational, incremental perspective on innovation further challenges the wider picture of creativity in the city. As Ingold and Hallam (2007) argue, there is a general association of creativity with innovation and novelty in the socio-cultural literature. On some readings, this implies a radical break from existing structures and frames, but more importantly, it assumes a concern with the outcome: “[t]o read creativity as innovation is, if
you will, to read it backwards, in terms of its results” (ibid, p.2-3). The focus here tends to lie on the uniquely imaginative individual that transcends the constraints of an existing system through human ingenuity, with creativity attributed to outcomes of novelty within these arrangements. This understanding underlies much of the current discussion of creativity in an urban context. Although they use the terms creativity and innovation slightly differently, referring to the generation of ideas and their implementation respectively, this is the view taken by Landry and Bianchini (1995, p.18) in their discussion of the ‘Creative City’: being creative is “to encourage innovation” and in this sense, it is “a ‘modernist’ concept because it emphasises the new, progress and continual change”. Creativity then becomes a directed, results-oriented process, with particular assumptions about who produces it, how it is valued and which replicable economic drivers may support it (see Florida 2005). There is a widespread awareness of such discourses in the sites I worked with. Christina expresses this for the Prinzessinnengarten:

I have to say, I have a bit of a problem with that concept of creativity. Because it is so success-oriented... I feel that the term has been abused in this city, and particularly in [Kreuzberg], in the last few years. And it has also been used as a way to exclude, so who is creative and who isn’t.

This approach to creativity in the city is pervasive, not least in Copenhagen, Barcelona and Berlin (see for example Degen and García 2012; Novy and Colomb 2013). Yet it stands at odds with many of the dynamics and patterns of alternative experiments that reject such an exclusive, individual and outcome-oriented approach.

As a counterpoint, Ingold and Hallam (2007) offer an alternative view of creativity as improvisation, which focuses on the processes and movements that give rise to these results in the form of ongoing “adjustment and response to the conditions of a world-in-formation” (ibid, p.3). They identify four characteristics of this creativity: it is generative and independent of judgements of its outcome; it is relational and rejects the uniquely creative individual in favour of a collective understanding; it is temporal and embedded in a constant flow and emergence of a new present; and it is a way of working as well as thinking, “inseparable from our performative engagements with the materials that surround us” (ibid). This reading much more closely reflects the creation of projects and constructions in grassroots experiments – it speaks to the emergent outcomes of squat tech building, as well as the everyday creativity of daily life in the sites. Creativity here stems from relations that continually unfold, become visible, then change direction. It is not located in the mental capability of the experimenters but “lies in the dynamic potential of an entire field of relationships” (ibid, p.7), made up of the people,
materials, non-humans and spaces of the experimental collective (see Figure 7.3). Following Gibson-Graham (2008), this suggests the possibility of cultivating creativity in difference, and of locating creativity in the city in the diverse, mundane and overlooked spaces and practices of urban dwellers (Chatterton 2000; see also Edensor et al. 2010). Here, further research potential lies in the question of how this improvised creativity in alternative experiments can challenge existing models of the creative city without being incorporated into the logics of neo-liberal development and monetisation.

![Figure 7.3: Christiania: the improvised creative city](image)

**Alternative experiments, politics and the hope for urban change**

This exploration of experimental grassroots alternatives began with an interest in urban change: the utopian hope for a better, more just or sustainable city. It located this hope not in abstract plans for a distant future, but in the lived reality of actually existing initiatives and interventions in the urban sphere – in the critical utopias of insurgent, grassroots, guerrilla and DIY urbanism. While they attract attention in academic circles and increasingly in wider culture as cool or hip places, they still struggle to find recognition in mainstream planning and policy context. At the same time, I noted a proliferation of the notion of experimentation in a variety of related urban settings. To move away from a meaningless buzzword where everything suddenly qualifies as an experiment, this research set out to describe more clearly what makes certain alternatives experimental, how they enact this experimentality and what the
consequences of this might be. Tracing the experimental dimensions through the practices of three different urban alternatives, the discussion has contributed to the conceptual work on 'wild', collective experiments as relational and action-oriented processes of knowledge-making. It also indicated how experimental alternatives come to matter for urban change: as urban learning assemblages that are grounded in knowing-in-practice, and as sites of incremental and improvised innovation rather than radical novelty. These possibilities emerge where the productive intersection of alternatives and experiments is fully embraced, in alternative interventions that employ an experimental approach of collective negotiation and public visibility and which therefore become lived grassroots experiments. This has consequences for their wider role in future in the city.

Experimental knowledge-making, I argued, is always political through its association with action (see Gross 2010b; Stehr 2001), but grassroots experiments expose a further political pathway. One of the questions to be asked of guerrilla, DIY and insurgent urbanisms is how they can turn their exploratory efforts of de- and re-familiarisation into a new form of urban politics that addresses pressing challenges of the city. This requires the formation of new political subjects or even the creation of new forms of citizenship (Holston 1998; Iveson 2013). It has long been recognised that the political potential of alternative initiatives arises from their practice, that

site-based politics are fundamentally expressed through the compositions and variations of a site’s dense materialities: in the affective bodily arrangements of its human and non-human participants; in the charismatic chaos of its unexpected eruptions and routine redundancies; in the complex of arrivals and departures that both connect sites to one another and continually reshape their boundaries; and in the recruiting of human bodies into political moments unanticipatable from the perspective of their subjectivities alone. (Woodward et al. 2012, p.206)

In experiments this practice-based politics has the potential for wider extension. Experimental alternatives that explicitly operate as places of knowing-in-practice, and which balance, cultivate and integrate their local responses with a public invitation can help the formation of new political collectives through notions of material and more-than-human participation (Braun and Whatmore 2010; Marres and Lezaun 2011). Instead of disentangling politics from everyday performances they engage in the former through the latter, giving room to uncertain relations and providing a forum that makes them public. They also work in a distinctly holistic way, as concerns with climate change, resource depletion or energy transition intersect with wider questions of inequality, marginalisation and the 'right to the city' (Harvey 2008). This
creates the possibility of a more critical engagement with what has been termed the ‘post-political’ (Swyngedouw 2009) condition of the urban, in which a technocratic consensus around the notion of sustainability tends to smother urban politics. Grassroots experiments can re-open these questions for debate and disagreement by making them visible and knowable within the city. At the same time, this gives these alternative efforts a further mechanism of support for their own continued existence. As Leandro (CMD7) puts it for Can Masdeu:

Sometimes it is also just to survive. In the beginning we started up the public meals, we started so many things to say: here, we’re doing this and this and this, because it is relevant and then you can judge... We are becoming more and more of a reference.

Taking an experimental approach involving public visibility and engagement therefore provides opportunities for debate that can support initiatives in their wider role as ‘obstinate’ (Werner 2011), alternative places in the city. How exactly this experimental politics can align with existing political directions inherent in autonomous and resistant efforts is another dimension that requires more detailed empirical work, in particular where these dynamics jar and come into conflict. My work has suggested some productive possibilities here, but their actual formation and impact is yet to be investigated.

This takes up the promises of critical utopias that aim to build a different future from the present, engaging with the tangles of both everyday urban practice and its wider politics. The “urgency, hope and inspiration” (Pickerill and Chatterton 2006, p.743) inherent in autonomous geographies can be cultivated and made relevant through an experimental approach. This is always a process, with different trajectories and voices that need to negotiate a joint path. As Duke expresses it succinctly for the Freetown of Christiania: “[Christiania] is just like utopia. You don’t dream about arriving at a utopia. It is not a destination, it is a direction.” Making new places within and perhaps beyond the existing frameworks is always ongoing and contingent, as Wilson (2012, p.16) states:

We must acknowledge that envisioning and enacting possibilities beyond capitalism is a process, it involves experimentation and exploration. Like all forms of experimentation and exploration, they take time and their outcomes will be incomplete.

What this research has shown is that there are interventions in the city in which this direction of hope is already followed (see Figure 7.4), despite its necessary incompleteness and uncertainty. An experimental approach can help make this path more passable, its utopian ideals more achievable. Freedom, in the words of Jane Bennett (2001, p.28), means “making
the experimental most of the limited agency available to subjects constrained and enabled by a human body, by social formations, by political regimes, and by historical locale”. Alternative experiments offer the possibilities to do so in the contemporary city.

Figure 7.4: An urban alternative, both hoped for and already-made in Christiania


Castán Broto, V. and Bulkeley, H. (2013). A survey of urban climate change experiments in 100


Davies, G. and Dwyer, C. (2009). Qualitative methods: are you enchanted or are you alienated? *Progress in Human Geography, Progress r*, pp.1–8.


Edensor, T. (2012). Illuminated atmospheres: anticipating and reproducing the flow of affective


Nimmo, R. (2011). Actor-network theory and methodology: social research in a more-than-


Appendix 1

Research interests and themes for interviews

(developed for Prinzessinnengarten after 2 weeks in the field, 09 May 2012)

Main question: In what way is the garden a space of experimentation (or of creativity)?

1. What is the garden for the different gardeners?
   - definitions and personal stories: why joined, what makes it special
   - everyday practices: what are the tasks, who does what, where are conflicts how does communication work
   - what are people's favourite spaces and why

2. Where do ideas originate and how are they materialised?
   - what are the most important needs of the garden?
   - stories of constructions: what exists, how was it made, which materials, which use, what was rejected
   - interplay between projects: how do outside projects join, what are the processes and conditions

3. How do structures and free spaces work?
   - which aspects are fixed: what is directed, what emerges
   - where are openings for creativity and experimentation
   - what is the role of external structures
   - how is the space of the garden planned: aesthetics, management, decision-making

4. What is the role of the garden as a space for learning?
   - what connects people to the garden
   - who joins for the public days? How do people 'do' the gardening?
   - what are the activities beyond gardening?
   - how do people experience learning?
   - what have they 'learnt'

Proposed research activities

- participant observation during public garden days, organised events and everyday gardening activities
- informal conversations during public gardening days
- open interviews with longer term volunteers
- open interviews with project leaders
- documentation of learning activities
## Appendix 2

### List of interviews and tour recordings

**Can Masdeu (02 March – 10 March 2012)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Tour given by</th>
<th>Role / Involvement</th>
<th>Date</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD1 tour</td>
<td>Laura</td>
<td>Resident</td>
<td>04 March 2012</td>
<td>Public tour of the house</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Name (Pseudonym)</th>
<th>Role / Involvement</th>
<th>Date</th>
<th>Location / Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMD2</td>
<td>Jamie*</td>
<td>Resident</td>
<td>05 March 2012</td>
<td>Kitchen and garden, preparing dinner</td>
</tr>
<tr>
<td>CMD3</td>
<td>Theo*</td>
<td>Resident</td>
<td>06 March 2012</td>
<td>Cleaning and tidying the bakery</td>
</tr>
<tr>
<td>CMD4</td>
<td>Kim</td>
<td>Resident</td>
<td>07 March 2012</td>
<td>Walking in the hills near the house</td>
</tr>
<tr>
<td>CMD5</td>
<td>Juan and Theo (joint interview)</td>
<td>Resident</td>
<td>08 March 2012</td>
<td>Community gardens, while shifting the compost heap</td>
</tr>
<tr>
<td>CMD6</td>
<td>Mia</td>
<td>Long term guest</td>
<td>09 March 2012</td>
<td>Can Masdeu grounds near the compost toilets</td>
</tr>
<tr>
<td>CMD7</td>
<td>Leandro</td>
<td>Resident</td>
<td>09 March 2012</td>
<td>Baking bread in the house bakery</td>
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</table>

**Christiania (11 March – 02 April 2012)**

<table>
<thead>
<tr>
<th>Code</th>
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<th>Role / Involvement</th>
<th>Date</th>
<th>Location</th>
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<tbody>
<tr>
<td>CA1 tour</td>
<td>Monika</td>
<td>Resident</td>
<td>14 March 2012</td>
<td>Christiania</td>
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<table>
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<tr>
<th>Code</th>
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<th>Role / Involvement</th>
<th>Date</th>
<th>Location / Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA2</td>
<td>Luise</td>
<td>Temporary resident and documenter</td>
<td>14 March 2012</td>
<td>Walk in the quiet Dyssen part of Christiania</td>
</tr>
<tr>
<td>Code</td>
<td>Tour given by</td>
<td>Role / Involvement</td>
<td>Date</td>
<td>Location</td>
</tr>
<tr>
<td>-------</td>
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<td>---------------------------</td>
</tr>
<tr>
<td>CA3</td>
<td>Tore</td>
<td>Resident</td>
<td>16 March 2012</td>
<td>Moonfisher coffee house and Tore's house while he is painting</td>
</tr>
<tr>
<td>CA4</td>
<td>Ulla</td>
<td>Resident</td>
<td>19 March 2012</td>
<td>Ulla's house</td>
</tr>
<tr>
<td>CA5</td>
<td>Duke</td>
<td>Resident</td>
<td>19 March 2012</td>
<td>New Forum Information Office</td>
</tr>
<tr>
<td>CA6</td>
<td>Ida</td>
<td>Worker at Green Hall</td>
<td>20 March 2012</td>
<td>Green Hall recycling store</td>
</tr>
<tr>
<td>CA7</td>
<td>Maria</td>
<td>Manager of nature groups</td>
<td>22 March 2012</td>
<td>Walk along the water front</td>
</tr>
<tr>
<td>CA8</td>
<td>Uwe</td>
<td>Architect at Building Office</td>
<td>22 March 2012</td>
<td>Balcony of the Building Office</td>
</tr>
<tr>
<td>CA9</td>
<td>Dietmar</td>
<td>Former resident</td>
<td>23 March 2012</td>
<td>Walk along the water front</td>
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<tr>
<td>CA10</td>
<td>Jochen*</td>
<td>Resident</td>
<td>27 March 2012</td>
<td>CRIR researcher residence</td>
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<tr>
<td>CA11</td>
<td>Eddie*</td>
<td>Resident</td>
<td>28 March 2012</td>
<td>Eddie's building site</td>
</tr>
<tr>
<td>CA12</td>
<td>Arne</td>
<td>Resident</td>
<td>29 March 2012</td>
<td>Arne's house</td>
</tr>
<tr>
<td>CA13</td>
<td>Rolf</td>
<td>Resident</td>
<td>29 March 2012</td>
<td>Outside Rolf's house</td>
</tr>
<tr>
<td>CA14</td>
<td>Stefan</td>
<td>Engineer at Bike workshop</td>
<td>30 March 2012</td>
<td>Christiania bike workshop</td>
</tr>
<tr>
<td>CA15</td>
<td>Hermann</td>
<td>Resident</td>
<td>01 April 2012</td>
<td>Hermann's house</td>
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**Prinzessinnengarten (25 April – 26 June 2012)**

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<th>Location</th>
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<tbody>
<tr>
<td>PG1 tour</td>
<td>Anton (example tour)</td>
<td>Project Initiator</td>
<td>26 April 2012</td>
<td>Prinzessinnengarten</td>
</tr>
<tr>
<td>PG2 tour</td>
<td>Nils</td>
<td>Project Initiator</td>
<td>26 April 2012</td>
<td>Prinzessinnengarten</td>
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<table>
<thead>
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<th>Role / Involvement</th>
<th>Date</th>
<th>Location / Activity</th>
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</thead>
<tbody>
<tr>
<td>PG3</td>
<td>Paula</td>
<td>Volunteer (organisation)</td>
<td>30 May 2012</td>
<td>Prinzessinnengarten (meeting area)</td>
</tr>
<tr>
<td>PG4</td>
<td>Rainer and Henning</td>
<td>Bike Container</td>
<td>30 May 2012</td>
<td>Prinzessinnengarten (bike container)</td>
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<tr>
<td>PG5</td>
<td>Eva</td>
<td>Volunteer</td>
<td>01 June 2012</td>
<td>Prinzessinnengarten (dye plant bed)</td>
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<td>PG6</td>
<td>Susan and</td>
<td>Project makers</td>
<td>05 June 2012</td>
<td>Prinzessinnengarten</td>
</tr>
<tr>
<td>Name</td>
<td>Role</td>
<td>Date</td>
<td>Location</td>
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<tr>
<td>Christina</td>
<td>Cafe and medicinal plant bed</td>
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<td>Prinzessinnengarten (cafe)</td>
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<td>Damien</td>
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<td>Prinzessinnengarten (meeting area)</td>
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<td>Lily</td>
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<td>Prinzessinnengarten (bike container)</td>
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<td>Bike Container</td>
<td>14 June 2012</td>
<td>Prinzessinnengarten (meeting area)</td>
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<td>17 June 2012</td>
<td>Prinzessinnengarten (material storage area)</td>
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<td>Martin</td>
<td>Bee keeper</td>
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<td>Prinzessinnengarten (meeting area)</td>
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<td>Camilla</td>
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<td>Martina</td>
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<td>Prinzessinnengarten (clay oven)</td>
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<td>Julia</td>
<td>Volunteer</td>
<td>12 August 2012 (return visit)</td>
<td>Prinzessinnengarten (shop container and irrigation system)</td>
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* conversation recorded in note form