Examining the role of minor experiments in French and Catalan eco-communities: Between critique and post-capitalist world-building

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Abstract

This article explores the role of experiments in eco-communities in Southwest France and Catalonia and focuses in particular on the production of post-capitalist natures in experiments with plants. Drawing on Deleuze & Guattari, it first orders experimental practices (around irrigation) in terms of a spectrum from 'minor' to 'major', emphasizing in particular the generativity of 'minor experimentation' that is often exploratory, tentative, and ambiguous. It secondly argues that it is crucial to consider how experimental practices relate to other non-experimental practices on-site, highlighting the relationship between minor experiments evolving into 'majoritized' or stabilized interventions, that may be subject to processes of 'scaling up.' Thirdly, it emphasizes the importance of approaching minor experiments through a careful attention to 'difference' that emerges, rather than directly critiquing such experiments. By contrast, the outgrowth of such experiments merits critical examination, according to more clearly defined, external yardsticks, by which political ecological scholarship can critically adjudicate the value of such experiments. The article does so by examining the ways in which experiments may be 'captured' by capitalist logics, hoping to positively contribute to a political ecology of experiments that fruitfully combines critique with more positive and hopeful experimentation.

Key words: Experiment, minor, post-capitalism, human-plant relations, critique

Résumé

Cet article explore le rôle des expérimentations dans différentes éco-communautés du sud-ouest de la France et de la Catalogne en se concentrant sur la production expérimentale et post-capitaliste de la nature à partir d'expériences avec les plantes. En s'inspirant de Deleuze et Guattari, les pratiques expérimentales (autour de l'irrigation) sont classées sur un spectre de 'mineur' à 'majeur', soulignant en particulier la création de « l'expérimentation mineure » − souvent exploratoire, provisoire et ambiguë. Deuxièmement, nous établissons qu'il est essentiel de considérer les manières dont les pratiques expérimentales s'articulent avec les pratiques non-expérimentales mettant ainsi en avant la relation entre les expérimentations mineures évoluant en pratiques majeures ou en interventions stabilisées, suggérant le processus d'échelonnage. Troisièmement, l'article montre l'importance d'approcher les expérimentations mineures à travers l'attention spécifique à la 'différence' qui émerge, plutôt que la critique instantanée de celles-ci. A contrario, les résultats de ces expériences méritent un examen critique, selon des critères externes plus clairement définis. L'étude de l'écologie politique peut ainsi juger de manière critique la valeur de ces expériences. Cet article le fait à travers une évaluation de comment les expériences peuvent être « capturées » par les logiques capitalistes, tout en espérant de contribuer à une écologie politique des expériences qui combine de manière fructueuse la critique avec une expérimentation plus positive et pleine d'espoir.

Mots clés: Expérience, mineur, post-capitalisme, relations humain-plante, critique

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Resumen

Este artículo explora el papel de los experimentos en eco-comunidades del suroeste de Francia y Cataluña, centrándose específicamente en la producción de naturalezas poscapitalistas a través de experimentos con plantas. Utilizando el enfoque de Deleuze y Guattari, se clasifican, en primer lugar, las prácticas experimentales (en torno al riego) en un espectro que va desde lo 'menor' hasta lo 'mayor', haciendo hincapié en la generatividad de la "experimentación menor", que a menudo es exploratoria, tentativa y ambigua. En segundo lugar, se argumenta que es crucial considerar cómo se relacionan las prácticas experimentales con otras prácticas no experimentales in situ, destacando la relación entre experimentos menores que evolucionan hacia intervenciones más estabilizadas o 'mayorizadas' las cuales pueden estar sujetas a procesos de 'scaling up.' En tercer lugar, se subraya la importancia de abordar los experimentos menores prestando especial atención a la 'diferencia' emergente, en lugar de criticar directamente dichos experimentos. En contraste, el resultado de los experimentos merece un examen crítico, de acuerdo con criterios externos definidos, a partir de los cuales la comunidad de ecología política pueda juzgar críticamente el valor de tales experimentos. Este artículo lo logra examinando cómo los experimentos pueden ser "capturados" por lógicas capitalistas, con la intención de contribuir positivamente a una ecología política de experimentos que combine fructíferamente la crítica con una experimentación más positiva y esperanzadora.

Palabras clave: Experimento, menor, poscapitalismo, relaciones humano-planta, crítica

1. Introduction

This article examines the role of experiments in eco-communities that may aid the construction of post-capitalist futures. To this end, it examines two eco-communities, Can Decreix and Can Masdeu, situated at the French-Spanish border and greater Barcelona, respectively. It focuses primarily on experiments involving plants, that is, around irrigation and wild plants, especially the cactus, designed to address the droughts and volatile climate increasingly experienced in this region. Experiments with plants in this setting can be considered important attempts that seek to respond to the vagaries of capitalism, and to act and think differently in the Anthropocene (Haraway, 2008; Gibson-Graham & Roelvink, 2009; Clark, 2011; Povinelli, 2011; Tsing, 2015). More specifically, experimentation around climate change adaptation in agriculture is particularly necessary given the high degree of 'unknown ecological volatility' of the Anthropocene (Gibson & Warren, 2020, p. 325; Klocker *et al.*, 2018).

Eco-communities, low-carbon developments or similar 'place-based niches' have become an increasingly fertile area of research especially as sites for experimentation with other modes of living (Chatterton & Pickerill, 2010; Litfin, 2014; Chatterton, 2016; Pickerill, 2016, 2017; Monticelli, 2018; Demaria *et al*., 2019). However, although their experimental character is often alluded to (Pickerill & Maxey, 2009; Dias *et al.*, 2017; Price *et al*., 2020), only a few have explored experiments in eco-communities in some depth (Marres, 2009; Fois, 2019). Given the prevalence of such practices and the often-highlighted relevance of experiments for producing alterity and possibly solutions to climate change, this article seeks to illuminate experiments in eco-communities further, in three analytical moves.

I argue that firstly more attention needs to be drawn to the particularities and kinds of experiments in eco-communities. I do so by drawing on Deleuze & Guattari's categories of 'minor' and 'major', with minor experiments constituting a kind of "exploratory, processual, ambiguous, tentative" experimentation, that hold the "potential to be disruptive of repertoires of practices and of modes of thinking" (Jellis, 2013, p. 203).

Secondly, I argue that experiments in eco-communities should be considered in conjunction with and in relation to other more 'major' modes of constructing 'alternatives', that are not conceived of as experimental by practitioners, including the public demonstration or scaling up of particular practices or simply the 'production' of a particular product. While experimental dimensions may be found across all these practices, I am particularly interested in those concerned with positive 'difference' and how they relate to other (non-experimental) practices. In particular, I will focus on this interrelationship by considering how experimental practices may become more settled (and thereby less experimental) and potentially scaled up – as a particular, yet arguably a common way in which experimental and non-experimental practices are related.

Thirdly, I argue that research focused on experimentation requires close attention to the ways in which experiments and their outgrowths fulfill desirable criteria for alternative world-building. Following from the drive to critically examine experiments according to their justice dimensions and political commitments (Powell & Vasudevan, 2007; Caprotti & Cowley, 2017; Pickerill, 2019), I take a cue from Robbins & Moore (2013, p. 16) to "directly confront what we want" (rather than critiquing what we do not). I propose Chatterton & Pusey's three terrains of post-capitalist transformation as 'yardsticks': that is, from enclosure to the commons, from commodification to socially useful doing, and from alienation to self-directed and playful 'doing' (Holloway, 2010).

I will first provide a brief review of literature on eco-communities as spaces of experimentation, before conceptualizing minor experiments (in conjunction with major ones) and how to evaluate them. After providing a short overview of my field sites and the methods I employed, I will provide some background on experiments and different understandings thereof in the two eco-communities. I will classify these according to a spectrum ranging from minor to major, focusing on experiments around irrigation and emphasizing in particular the 'generativity' of the minor. Secondly, in a more explicitly critical vein, I examine and critically evaluate a (formerly) minor experiment – growing and domesticating cacti – that is as in the process of becoming stabilized or 'majoritized.'

2. Literature review

Eco-communities as sites of experimentation

The term 'ecovillage' was popularized by Robert and Diane Gilman (1991, p. 10), who defined them as "human-scale full-featured settlement in which human activities are harmlessly integrated into the natural world in a way that is supportive of healthy human development." Although intentional communities have been around for thousands of years (Metcalf, 2004), there has been an efflorescence of eco-communities since the 1990s (Sullivan, 2016; Lockyer, 2017). While the above definition broadly describes key features of my field sites, I prefer the term 'eco-communities', primarily because eco-'village' carries with it an expectation of size and location that my field sites could not fulfill (see also Cattaneo, 2015, p. 195).

Eco-communities have been found to have significantly reduced their environmental impact (Dawson, 2004, 2006; Daly, 2017; Lockyer, 2017), whilst maintaining high levels of subjective well-being (Lockyer, 2017; Grinde *et al.*, 2018). They engage to varying degrees in 'post-capitalist' practices such as communing, self-reliance, mutual care, and collectivism (Bhakta & Pickerill, 2016, p. 407). They rely less on capitalist markets through the production of their own food, they practice repair, innovate with 'frugal innovations' (Bobulescu & Fritscheova, 2021) and build up wider networks of alternative economic practices (Dawson, 2013; Sekulova *et al.*, 2017). As such, at least some eco-communities can be said to fulfill "a critical ideological function of showing that alternative ways of working and living are possible" (Wright 2013, p. 34) in a "prefigurative" vein (*ibid.*; see also Maeckelbergh, 2011; Yates, 2015).

In this context, many authors have evoked the experimental dimensions of eco-communities, which have been conceived of as "laboratories of sustainability and demonstration sites" (Dias *et al.*, 2017, p. 82), 'model experiments' (Borsos, 2013), 'seed beds for experimentation' and 'evolving holistic experiments' (Pickerill & Maxey, 2009), engaging in "experimental, messy and contingent" practices of the everyday (Chatterton & Pickerill, 2010, p. 475). Indeed, many practices in eco-communities can be understood as experiments, both as applied to socio-economic dimensions and community relations (see e.g., Boyer, 2016; Roysen & Mertens, 2019; Ulug *et al.,* 2021), and to nature-society relations (Brombin, 2019; Kirby, 2003, p. 327).

Some of this work has also highlighted how diverse economic activities (Gibson-Graham, 2006; 2008) can be "incubated, experienced, and experimented, before being transitioned to broader local economies" (Price *et al.*, 2020, p. 219). However, how experiments are defined and what they consist of has been left largely unexamined.

Some authors have considered sustainable living experiments in more depth. Considering green living, Noortje Marres (2009, p. 118) has foregrounded public experiments as engagement devices that attempt to "transform everyday material practices into practices of public engagement" and during which "socio-material relations" around a new object are reconfigured (*ibid.*, p. 119). But these resemble "public demonstrations" (*ibid.*, p.120), with their experimental dimension appearing somewhat limited in scope.

By contrast, Francesca Fois (2019, p. 122), who has studied social and community experiments in the Italian eco-community Damanhur, conceives of experiments as defined by "processuality, dynamism and open-endedness." She highlights specifically their role in disrupting habit, and generating "affective, emotional, and embodied experience[s]" (*ibid*., p.107). Experiments enact "alterity" and stretch the "socially accepted (and constructed) boundaries of possibility" (Longhurst, 2015, p.190 in Fois, 2019, p.109), though Fois stops short of actively evaluating those experiments based on their contribution to this alterity. Neither author explicitly considers non-experimental practices occurring in such sites, and their potential interrelationship, e.g., when and under which circumstances experiments take place and when other modes of engaging with material objects or forms of social organization are preferred.

I seek to contribute to an understanding of experiment *in relation to* and distinct from a wider array of practices seeking to construct alternatives, e.g., by spreading a (stabilized) experiment more widely. Secondly, I offer a clearer set of analytical yardsticks to understand what exactly these experiments and their outgrowths are meant to contribute to. I will do so through an operationalization of Deleuze & Guattari's concepts of the 'minor' and 'major' and through Chatterton & Pusey's terrains of post-capitalist transformation (2020), used as external yardsticks.

Minor experiments

Deleuze & Guattari's (1987) work provides a useful way to conceptualize the dynamics between tentative experimentation and more 'settled' forms of world-building that may follow (or take place contemporaneously). The minor or the 'micropolitical' is not understood (following Foucault), through the "smallness of its elements" (Deleuze & Guattari, 1987, p. 217), but rather that which "subverts this tendency in the political to present itself as already fully formed" (Himada & Manning, 2009, p. 5). It is conceived in opposition to the major or the macropolitical, the "sphere of representation where pre-composed bodies are already circulating." Thus, Deleuze & Guattari's concern is here with understanding how 'pure' difference, i.e., novelty might emerge, offering up the possibilities of different ways of living, a crucial consideration in the context of experiments in eco-communities. For them, difference emerges through immanent experience, rather than "already constituted [transcendent] identities that form and reform themselves", that is, the 'major' (May, 2005, p. 114).

Given this level of abstraction and vagueness, how might one find the 'minor'? Manning (2016, p. 2) has argued that the minor is above all a "continual variation on experience", emerging immanently in practice and, allowing for opening the latter to "new modes of expression" (*ibid*.). Particularly pertinent for the context of eco-communities then, are daily life and "experience" becoming the loci of experiments, thereby blurring the boundaries of the concepts of experience and experiment (Stengers, 2008, p. 109). Other work emphasizes the political dimensions of everyday life in eco-communities, for instance as an expression of and extension of activism (Rubin, 2020), whereby living is (micro)political as well as politically significant (Sargisson, 2001, p. 75). By contrast, much of social theory, including much of political ecology, is not attuned to these different variations in experimentation, and has focused on 'negative' aspects of difference, commonly articulated as major, transcendent identities and representations, i.e., class, race, and gender.

More specifically, Thomas Jellis in his examination of aesthetic experiments conceives of experimentation as exploratory, processual, ambiguous, tentative, and often lacking clear results (Jellis, 2013, p. 208-209), and therefore potentially disruptive for practice and thinking (*ibid*.: p. 203). For him, this stands in contradistinction to "scientific experimentation", with its "artificial set-up of an experimental system, the inducement of changes by external control of certain parameters and the measurement of observable effects" (Gross & Krohn, 2005, p. 64).

Minor experiments furthermore require an attention to non-humans, for instance to plants and their adaptive capacities, a point that plant geographies and vegetal political ecologies have recently emphasized strongly (see Argüelles & March, 2022; Atchison, 2015; Fleming, 2017; Gibson & Warren 2020; Head *et al*., 2015; Pitt, 2017; Margulies *et al*., 2019; Ernwein *et al*., 2021; Lawrence, 2021). Thus, tentative, ambiguous experiments include humans and non-humans that respond in varying ways, and that enable the emergence of novelty (Jellis & Gerlach, 2017, p. 564).

The concept of minor experiments aligns broadly with the work of those who have emphasized "more open-ended, fluid interventions in 'world-making'" (Pickerill, 2019, p. 121; Lorimer & Driessen, 2014). Rather, the usefulness of conceptualizing experiments as *minor* specifically comes through its

relationship with more *major* practices, thereby allowing for a way of fruitfully linking up such tentative doings with more traditional political ecological concerns.[2]

In particular, I am concerned with understanding how minor experimentation may evolve to become a more 'stabilized' or 'majoritized' category of practices and approach to the production of postcapitalist natures, before evaluating the outgrowth of such experiments. For Deleuze & Guattari (1987, p. 213) "every politics is simultaneously a micropolitics and a macropolitics", however, the micropolitical is primary – that which emerges from immanent experience. Transcendent and representational, i.e., major categories such as class (or states or capitalist economies) must be conceived of as "relative stabilities" of previously minor tendencies, even as the latter "overspill them from within", "responding to difference" (May, 2005, p. 129). Crucially, categories of minor or major are fluid (*ibid*.). What was once minor can become stabilized into a more major and easily recognizable category. In this article, I therefore refer to 'majoritization' as the process of becoming more stabilized and recognized as categories of thought and doing.

The process of minor experimentation and its potential stabilization should not, however, be conceived of as a smooth process towards a utopian future. Rather, Deleuze & Guattari argue that capitalism (as a relative stability) possesses "mechanisms of capture that stifle the flight" of minor tendencies (May, 2005, p. 141), which can be directed to serve capital accumulation rather than other pursuits (*ibid*., p. 146). However, not *all* minor tendencies necessarily get captured by capitalist logics. As Todd May argues, it is therefore imperative to seek ways to mobilize minor tendencies to "create alternative social arrangements" (p. 148) without being "re-territorialized" into the capitalist system.

Evaluating experiments and their outgrowths

This two-fold understanding of minor and major of politics offers a productive way of examining minor experiments and their interrelationship with non-experimental practices, in two analytical registers. This first register, I argue involves 'noticing' (Tsing, 2015) minor experimental production of difference without immediately resorting to 'major' categories. As Roberts & Dewsbury (2021, p. 1527) argue, major categories or "transcendental yardsticks", i.e., thinking politics mainly through "dialectical, structural, and representational terms" may actively stand in the way of difference emerging and relatedly, on an analytical level, researchers' ability to notice such difference. This might also be the case because spontaneous or even unintentional minor experiments happen.

In a second step, I argue that it is crucial to attend to the ways in which such experiments are potentially stabilized as 'major' political interventions, which in turn merit greater critical evaluation. I find some resonance here with Lehman & Nelson (in Johnson *et al.*, 2014, p. 445) who explicitly argue that an attention to both "unequal power relations" (i.e., an example of a potential transcendent/major criteria to evaluate) *and* to "lines of flight from these relations" is necessary, though they have not applied this to an empirical context. 'Lines of flight' is an unreferenced Deleuzian term, closely aligned with the minor, describing an element of 'overflow' (May 2005, p. 135).

How, then, should we evaluate minor experiments as they become stabilized or 'majoritized'? While some have shied away from evaluating experiments beyond the potential lessons they offer (see Rabinow & Bennett 2012, p. 95; Kullman 2013, p. 889), more critical scholars have examined their procedures and outcomes by attending to justice, politics, and power relations. Experiments have been critiqued for being exclusionary in terms of race, class, and gender (Last 2012, p. 717), often privileging the "heroic experimenter" (Davies, 2010, p. 4; Pickerill, 2019, p. 120). Experiments may generate disproportionate risks for some (Kullman, 2013; Bulkeley & Castán Broto, 2013), as well as unequal benefits (Last, 2012, p. 717). Similarly, the literature has questioned "to what ends" experiments have been put (Lorimer & Driessen 2014, p. 11).

These are important critiques; however, they lack a clear sense of what stabilized/'majoritized' experiments *should* contribute to. Taking a cue from Robbins & Moore (2013, p. 16), I consider it vital to 'directly confront *what we want*' experiments to achieve, rather than (primarily) criticizing them concerning the extent to which they reproduce traditional political exclusions. While this second analytical register is

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[2] Some authors within grassroots innovation scholarship have already brought these two together (Chatterton, 2016; Scott-Cato & Hillier, 2011), but they have done so primarily to highlight the difference between the qualitative nature of development (minor) and quantitative growth (major).

based on an evaluation according to major, transcendent yardsticks and therefore arguably stands in a tension with the minor 'noticing', it offers in fact a chance to assess whether the difference that has emerged immanently is the difference 'we want' (e.g., avoiding capitalist capture).

Chatterton & Pusey's (2020) three potential *terrains of transformation* towards post-capitalism are useful here, that appear especially appropriate for my field sites. First, they foreground the dynamic between enclosure and the commons, that is from "primitive accumulation" of "public space, seed patents, knowledge and housing" to "co-ownership, co-production and co-management of social goods and spaces" (Chatterton & Pusey, 2020, p. 30, see also Eizenberg, 2012; Thompson, 2015; Ernwein, 2017; Egerer & Fairbairn, 2018; Ginn & Ascensão, 2018; Nightingale, 2019). This lends itself to an examination of the justice and politics of experiments, both in terms of procedure and outcomes, by considering the extent to which they are co-produced and democratically managed by relevant social actors.

Second, they suggest moving from commodification understood as "privatization, alienation, individuation, abstraction, valuation and displacement" (Castree, 2003), encompassing ever increasing parts of daily lives under capitalism, to "socially useful production" (Chatterton & Pusey, 2020, p. 31), as a form of producing "non-commodified forms of social goods", based on "actual needs and desires" that serve "human flourishing" rather than profit (*ibid*., p. 31-32). Thirdly, Chatterton & Pusey propose moving from a sense of (capitalist) alienation to what Holloway (2010, p. 84) calls 'doing', that is, a "purposeful concrete activity", "not determined by others" (Chatterton & Pusey, 2020, p. 32-33). Analyzing experiments according to these terrains also permit to examine how, following Deleuze & Guattari, experiments can be 'captured' by capitalist logics.

3. Field sites and methodology

Field sites

I undertook ethnographic research between April 2018 and January 2019, relying primarily on participant observation and interview in the eco-communities Can Decreix, a "degrowth house" in Cerbère (population: 1,345), at the French-Spanish border, and Can Masdeu, a 'rurban' squat in the outskirts of Barcelona (Figure 1). Both case studies were chosen as possible sites of 'post-capitalist transformation.'
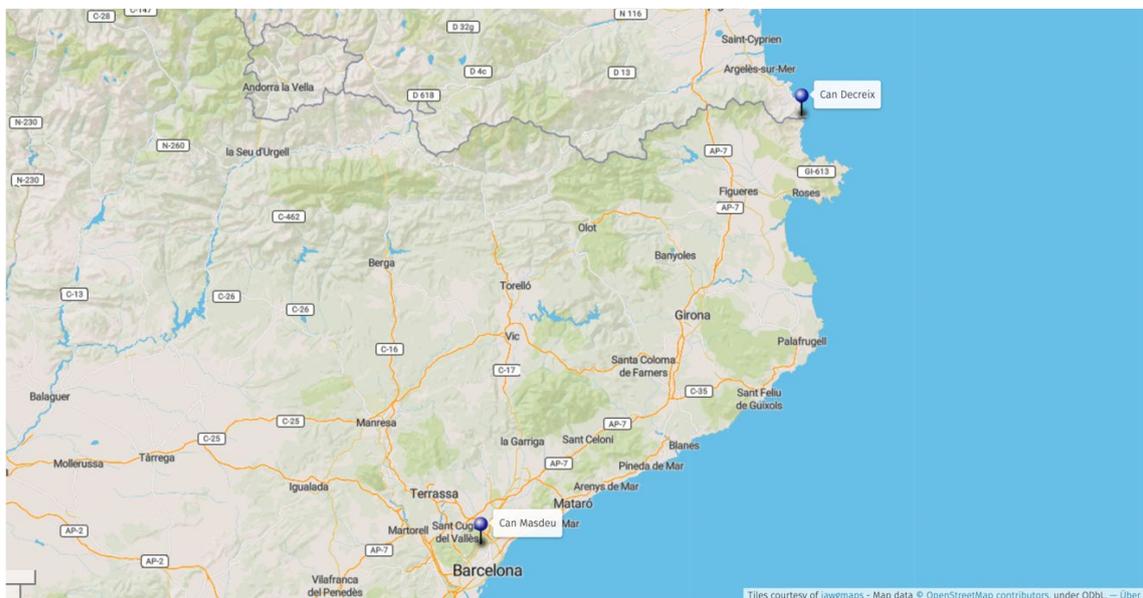

Figure 1: Map of field sites. Source: Opensourcemap.com

Can Decreix was bought in 2012 by two brothers, one of whom lived there permanently (alone) at the time of research and who served as a key respondent for this article, particularly as frequent (co-

instigator of various experiments.[3] While Can Decreix had previously had other permanent residents, at the time of fieldwork, it was part of an extended community of sympathetic academics and activists. Many visitors, volunteers, and friends were staying there throughout my research. It consists of an old, rather small farmhouse, built over three levels, connected by upwards-sloping paths. Next to experimenting with wild plants and permacultural practices, Can Decreix also cultivates wine and some conventional produce. It also uses many "frugal" and "convivial" technologies and innovations (Pansera & Fressoli, 2021), such as a pedaling washing machine, compost toilets and solar ovens. As such, it views itself as a site to "put into practice various degrowth strategies", but also to conduct "constructive experimentation" (Degrowth.org, n.d.).

Can Masdeu has an ideational background in environmentalism, communitarian anarchism, and self-management. The space, a former leper colony abandoned in the 1950s, was first squatted in late 2001, surviving its only eviction attempt in April 2002 (Canmasdeu.net, n.d.). Since then, Can Masdeu claims 'social legitimacy', given that it has opened up half its agricultural space for community gardens, hosts Open Days twice a month and engages in environmental education. It is inhabited by 25-30 residents. As an unusually old squat, Can Masdeu has settled on some institutional fixtures, which include organic agriculture, Thursdays as 'workdays' for the community and volunteers, a general assembly, and several fixed responsibilities in terms of cooking and specific commissions (like gardening).

Methodology

I attempted to conceive of myself as a 'modest witness' (Haraway, 1997) and worked as iteratively as possible, staying at each site on at least two occasions for a total time of one month, respectively. I conducted 39 semi-structured interviews with 25 participants in Can Decreix, including both residents and visitors/volunteers, as well 21 interviews with 18 long-term inhabitants, visitors, and community gardeners in Can Masdeu. Interviews lasted on average just over an hour and covered *inter alia* the practices they were engaged in, especially material practices, focusing on the practical know-how, along with their experimental dimensions.

With regards to participant observation, I took part in daily life along with activities specifically planned for visitors and volunteers, particularly focusing on material practices to 'enskill' myself (Ingold, 2011; Krzywoszynska, 2017), including gardening, cooking with solar ovens, making chestnut shampoo, infrastructural repair and bioconstruction, and beer-brewing. I furthermore complemented my empirical research on site with an examination of Can Decreix's website and media reports, to get a stronger sense of how experiments, notably around the cactus, were presented to wider publics. All interviews were audio-recorded and transcribed and translated as necessary. All participants were given pseudonyms. I used nVivo software to analyze my data. Codes were descriptive at first, with analytical codes added over time.

4. Experiments in Can Masdeu and Can Decreix

To provide some context to the specific minor experiments below, I start by sketching out the diversity of experiments and understandings of them in eco-communities, which I argue deserve further conceptual and analytical differentiation.

First, experiments in eco-communities were conceived to be of a wide array and encompassing many different elements, that many started enumerating rather enthusiastically: Alba in Can Masdeu mentioned experiments "*with the [beer] brewery, and growing mushrooms, experimenting with living together in a small space (laughs), experimenting with polyamory*." Meanwhile Manuel, a volunteer in Can Decreix cited "*the idea of using local food in cooking, of not using sodium-based soap, utilizing a lot of rainwater for growing your own food, compost toilets*" as specific experiments.

Another Can Decreix visitor, Carol, expressed these activities more in terms of an ethos of experimentation underpinning many activities (see Kullman, 2013, p. 880; Fois, 2019), articulated through an inquisitive mode, as "*always looking for different new things to do, and to experiment with things. Wow, what can we do with this plant, try it, what can we- which kind of techniques can we apply to this stone wall, how we do it, with less input, with less impact?*" This was also apparent in how the eco-communities were conceived, namely as places "*where a lot of people […] get to experiment different, crazy ideas that*

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[3] At the time of writing in 2023, more residents have joined him.

you couldn't elsewhere without being judged, so – and you can have the freedom to fail." (Alejandro, a regular visitor of Can Decreix). This underscores the potential of the sites as 'seedbeds for experimentation' and 'evolving holistic experiments' (Pickerill & Maxey, 2009), with a clear political function, both in terms of prefigurative action (Maeckelbergh, 2011) and lifestyle as (experimental) politics (see Rubin, 2020; Sargisson, 2001). It also implies a spatial separation whereby more critically minded experiments may "tactically withdraw from the mainstream" (Anderson, J., 2017, p. 192), to then impact the whole system from the 'niche.'

Some, however, cast doubt about the degree of experimentation taking place in Can Decreix, for instance, Thomas, another volunteer, who argued that it was only "*experimentation for us*" but that he thought those were "*things are already existing*" and in this sense not truly innovative. Similarly, Can Masdeu resident Esteban argued that the space was built thanks to "*people with head, that are organized*", who were rather involved in "*a process of construction*" where "*some things work out well, some badly, others would need to be improved.*" He contrasted this with experimentation, which he described vaguely as: "*we will try something and who knows?*". Can Decreix's self-description as '*constructive* experiment' apparently bridges these two kinds of practices as part of enabling a different mode of living more broadly.

These points around the degree of novelty or positive difference, and of open-endedness speak to the diversity of experimental practices and dimensions in the two eco-communities. They also imply different notions of how 'success' of the experiment should be measured, with Can Decreix volunteer Gabriel mentioned the importance of "*analyz[ing] what the outcomes are*" and to "*check according to baselines, so you can learn something from it*", while simultaneously arguing that all experiments were "*successful in the sense that they put into question established things.*" Meanwhile, Manuel emphasized the importance of things "*working out*", arguing that "*every experiment needs constant improvement and building on it, otherwise its gonna stay an experiment, it's never gonna go out [into the world].*" Alba in Can Masdeu, by contrast, underscored the processual and unfinished nature of experimental living, noting that "*it's experimental in that, nobody has a total solution, and so it's a process in that we are constantly trying to find ways of living and working together that work.*" These different understandings of the success of experiments further echo distinctions drawn in the literature above, with some more 'scientifically' inclined, concerned with observable and measurable effects (see Gross & Krohn, 2005, p. 64) while others coming closer to an understanding of experiment as experience (see Stengers, 2008, p. 109). They hint at a core tension between positive difference and creation on the one hand, and evaluation and control on the other, that roughly maps onto the distinction between 'minor' and 'major' drawn above.

How might one make sense of and fruitfully analyze this diversity of experiments and different, at times contradictory delimitations of what constitutes an experiment? Based on the literature above and the myriad understandings and practices of experiment and experimentation in this section, I will now turn to specific experiments, to empirically illustrate the usefulness of the (fluid and relational) distinction between minor and major experiments.

Minor irrigation experiments in Can Decreix and Can Masdeu

To do so, I will delve into some irrigation experiments in Can Decreix and Can Masdeu, to first present 'pure' cases of minor experiment around irrigation, that occurred alongside other permacultural engagements. While permaculture is getting more established (Puig de la Bellacasa, 2010; Pickerill, 2013; Roux-Rosier, Azambuja & Islam, 2018; Fadaee, 2019; Leahy, 2021), becoming somewhat more major as a better-known alternative to the 'common-sense' approach of organic agriculture, the minor experiments on site were still novel and productive of 'positive difference', with regards to developing new ways of relating to plants.

These experiments were embedded within a context of experimental practice and an ethos outlined above. They were potential, yet open-ended solutions to flourishing in the arid and volatile climate of Southwestern France and Catalonia, which makes water a particularly scarce resource in both eco-communities and across the region. In both places, much thought was put into the specifics of irrigation and the equitable distribution of water use. This was a highly political matter, and arguably a prime example of the (micro)politicization of everyday life (see Sargisson, 2001; Rubin, 2020).

In Can Decreix, the particularities and capabilities of plants were understood very precisely through specific irrigation schemes. For instance volunteer Linda explained how they were "*train[ing] the lemon tree*" to "*grow its roots very deep to reach the water and minerals that it needs*" by watering it very

thoroughly but irregularly, working with the so-called hydrotropic responses of trees, e.g. the tendency to move towards sources of water (or other resources) (Head *et al.*, 2015, p. 404). Following this principle, other irrigation practices included the makeshift carrying of water buckets to specific trees, for instance "*left-over water from cleaning*" was used on the lavatera (an evergreen shrub, <u>Lavatera assurgentiflora</u>), with the grey water from the dishes "*going to the fig tree*" (Field Notes, 15/07/2018).

Meanwhile in Can Masdeu, where cultivating organic produce was fundamental for by residents themselves and the community gardens, water was rationed carefully, particularly given that the decision was made to make do with rainwater and a bore further up the mountain instead of relying on the municipal water supply. As a result, an extensive greywater system was also put in place, including channeling greywater from particular sinks to specific trees, for instance, "*the kitchen sink [...] can take 5 trees.*" (Casandra).

The question of how to irrigate and which plants to grow and how, was also settled through active and open-ended experimentation, including in ways that I consider to be a 'pure' case of minor experimentation. On one occasion, we were attempting to put a drip irrigation system in place (see Figure 2). Luc, Can Decreix' main inhabitant, argued that the plants benefiting from this could be either wild or planted. Victor, a visiting engineer, asked, slightly perplexed, if there would not be competition between the two, to which Luc replied, "*no, it is nice to have them mixed up and we will just see what happens*" (Field Notes, 12/04/2018). Later, Luc explained that nothing ever fully worked, and that everything needed to be rechecked over time (see also Pickerill & Maxey, 2009, p. 1533).

Figure 2: Open-ended experimentation in Can Decreix. Source: Author

In a similar experiment in Can Masdeu, one of the gardeners, Rafael cultivated his own spatially separated medicinal garden (Figure 3) that was "*more free [sic]*", including plants such as Mexican cacti, sage, wild fennel, laurel, oregano and lemon grass. Here he experimented in ways that "*in the big garden, we cannot do.*" In particular, he highlighted the open-ended way in which he experimented with the plants' survival, explaining that "*they decide themselves, --- I plant lots of plants and maybe 20% die. So, the ones that survive, it means that they can resist, because I don't water too much.*"

Both experiments illustrate a wide array of potential 'difference', in particular in comparison with 'conventional' agricultural practices, and especially with regards to the way edible plants were encountered in the gardens, that are worth spelling out at length. Both Luc and Rafael refused to directly control and direct the lives of plants, and instead allowed for 'something to happen' (Jellis & Gerlach, 2017). Neither planned the specifics of this experiment, with the arid and volatile climate of Southwest France and Catalonia serving as a "generative constraint" (Jellis, 2013, p. 207) and a starting point for putting diverse bodies and materials together in surprising ways (McCormack, 2011, p. 207). This was done in an open-

ended and non-deterministic way, with relatively little presumption about what the experiments and particular plants might do in a specific context. Rafael in particular, considered which particular plants may survive without any watering at all. He did so tentatively, allowing and anticipating vegetal failure, rather than trying to avoid it at all costs (see Marder, 2013, p. 98).

Figure 3: Rafael's experimental medicinal garden. Source: Author

These experiments considered the plants to be co-participants, challenging the tacit assumption within organic agriculture that the human palate should be at the heart of a decision on what to grow (Brown *et. al.*, 2009; Massey *et al.*, 2018). They went beyond food provisioning, "suspend[ing] the habitual" (Anderson, B., 2017, p. 594) and allowing instead for "something that might be emerging" (*ibid.*, p. 593).

Luc's experiment did not provide a clear result (Jellis, 2013, p. 208-209). I never got around to asking what the result of this experiment was – which plants ended up flourishing, and which did not. The experiments offered new "possibilities of thinking and doing" (*ibid.*, p. 9) and thereby generated more questions than definite answers. These might include: Which plants make the best allies in terms of drought resilience? Can we quite literally stomach their taste? Will this kind of food production be able to contribute to creating post-capitalist alternatives in the world?

What can we make of such barely recognizable experiments? While plants are sometimes disregarded in monocultural agricultural regimes, the different human-vegetal relations at the heart of these experiments offer polycultural, resilient and situated approaches. A worthwhile first step is 'noticing' (Tsing, 2015), attending to the multiplicity of possible connections and understandings "open[ing] up" (van Dooren *et al.*, 2016, p. 1). Rather than integrating 'critique' in a pre-determined experimental design (Lane *et al.*, 2011; Braun, 2015), I suggest that "cultivating arts of attentiveness" (van Dooren *et al.*, 2016, p. 1) is a crucial step to uncovering positive difference emerging through experiments in practice.

Major and 'hybrid' experiments

I make this argument in the context of other irrigation experiments, whose capacity to produce difference appeared comparatively limited. In Can Masdeu's organic community garden, involving many elderly people from the surrounding working-class neighborhood and working with democratic decision-making processes, irrigation and shared water use soon became the trickiest issues to resolve. Various experiments were thus conducted on how to best share water resources equitably.

Around the time of my fieldwork, community gardeners had "*decided in favor of automatic irrigation [...] the technical solution after the human solution, which means [...]to rotate, per week, per terrace, and that everyone has the same quantity of water available*" (Casandra, a Can Masdeu resident). The previous "*human solution*" had meant that one person was responsible for "*opening the tap and to distribute water between everyone*" which led to some "*helping themselves to more*" than their due. In this context, new technologies were brought in to mediate conflicts, applying a more 'controlled' distributive justice logic. Irrigation was furthermore "*timed*" so that "*our parcels are 45 minutes – the others that are smaller, get 30 minutes*" (Miguel, a community gardener), which caused "*conflicts.*"

What is striking here is that this form of experimentation relied on recognizable, major categories – equal vs. unequal access, technological vs. human intervention, which "prevent[ed] bodies from affirming their non-organic vitality by experimenting with relation" (Deleuze & Parnet, 2002, p. 46). The questions raised by the experiments are familiar ones: To what extent is technology more suited to bringing about just outcomes than human interventions? How can we assure equal access for everyone in the commons?

While the wish for distributive justice is understandable, working *only* within the realm of these recognizable, major categories as mentioned above can constrain the potential of experiments to produce difference (Roberts & Dewsbury, 2021). The particular rhythms of irrigation did not seem suited to the vegetal collaborators in question, suggesting a rather 'instrumental' and 'unspecific' relation to plants (Hall, 2011), viewed as generic resources for food-provisioning rather than collaborators to be "played" with (Lawrence, 2021, p. 12). There was little consideration of which vegetal allies might be best suited nor how much water *particular* plants might need.

These major dimensions of the irrigation experiments may be understood as the direct result of the pressures of the site's political economy that many community gardens effectively work as 'prosumers', with comparatively high economic stakes. Still, the basic premise of these kind of experiments – that water be equitably distributed among the community gardeners – did not seem to fully address the issue of ever-scarcer water resources in the "uncertain times" of Anthropocene climates (Klocker *et al*., 2018, p. 13).

We can see how this 'major' experiment differed from the minor experimental gardening practices in Can Masdeu and Can Decreix. There were others situated somewhere in the middle between these. For instance, in Can Masdeu, the greywater system had been subject of much experimentation, including, as Rafael described with "*different kind of sand and plants*" as "*filters*" so that the "*the water follows the different showers on different levels, so it's increasingly cleaner*" which however, caused issues with "*mosquitos [and] blockages, [...] some plants are dying, some others are growing too much, it's not easy, so they decide[d] that now the greywater is that we put filters, it's less blockages, and it goes straight to the [...] the trees, and it works.*" Some novel processual solutions were therefore found iteratively. Most often, in these hybrid experiments, methods and process were relatively open-ended, for instance Enzo noted that he proceeded "*…sometimes by research and adaptation, sometimes it's by [...] inspiration. [...] I just try it out. [...] if it doesn't work, then I'll try it again, and you know, research more, and try it again. Talking to people, looking at other projects, looking what other people have done, covering the bases.*"

The goal in these experiments was relatively clearly and narrowly defined, namely the construction and improvement of the greywater system, but the routes taken were varied, resulting in 'lesser' amounts of positive difference in the Deleuzian sense.

The key finding here is that there are varieties of experimental forms, that can be placed on a spectrum from minor to major, with hybrids in many cases. Minor experiments in this context allow space for more open-ended and less goal-directed and potentially even apparently pointless experiments. At the same time, major and minor should not be considered hard distinctions, but relational categories, that take meaning in particular contexts. Furthermore, since minor experiments are only unfolding in immanent practice, there is always the possibility of 'majoritarization', on the back of which more experiments, but also other forms of world-building (e.g., demonstrations, scaling up) can be conducted. It is possible to read the greywater experiments in this vein, as I will demonstrate in the next section.

5. A minor experiment in a process of stabilization

A more drawn-out, novel experiment around the domestication and utilization of cacti illustrates the interrelationship between major and minor in greater depth. Here, cactus experiments (Figure 4 and 5) have

become been *recognized* as viable alternatives to organic agriculture and were therefore arguably undergoing a process of 'majoritization.'

Figure 4: A cactus grove in Can Decreix. Source: Author

Can Decreix experimented with 'domesticating' cacti, increasingly selecting for less spiky species. I participated for instance in "…*a short training course in planting cacti for visitors, which very simply consisted in cutting off a cladode [the succulent leaf] and putting it two inches into the soil, and then adding water and compost*" (Field Notes, 05/07/2018; see Figure 5). More than 'planting' wild plants like the cactus, we were "*encouraged to rip out spikier 'wild' cactus and instead plant less spiky ones*" (*ibid*.).

Figure 5: A cactus cladode that has just been planted. Source: Author

This was termed 'semi-spontaneous' cultivation as a highly generative experiment, signaling an openness to a diverse range of outcomes of human-vegetal relations in the garden, reminiscent of the semi-foraging practices of early humans (Scott, 2011). In so doing, the cactus experiments worked 'transversally', cutting through traditional categories of wild and domesticated (May, 2005, p. 131). This type of experiment also spelled out a different labor relation to the plants themselves as compared to more 'major' agricultural regimes, arguably characterized by a mix of control and care (Graeber & Wengrow, 2021).

This cactus experiment was furthermore subversive within the larger political economy of Cerbère and its surroundings, a wine region with the reputable denomination of 'Banyuls',[4] as it transformed cacti from invasive species and a weed to be "*destroyed*" into a potential partner (McKiernan & Instone, 2016), with the cactus having been "*…originally unintentionally brought back from Mexico*" (Media Interview with France Culture, 2022). Can Decreix inhabitants and visitors thus reworked the particular affordances of the cactus to their advantage as particularly hardy plants, flourishing in a climate that is becoming increasingly inhospitable for vines, with potential ramifications for how agriculture in the region might be organized.[5]

By the time of my fieldwork, cultivating and eating cacti had become a settled, if unfamiliar 'alternative' to organic agriculture, as a major intervention. This was apparent in the reaction of visitors, who were taught to grow and harvest cacti as an alternative to conventional agricultural regimes. Angela, a regular visitor, explained for instance it took her a while to understand "*that there are so many plants around [...]so why use so much water, when there is no water. Maybe it's better to use the plants that are already growing on their own and don't need so much water.*" Meanwhile, Nerea, another visitor, noted that she thought it "*interesting to realize how every fruit was domesticated and that finally, we got to some fruits that are standardized.*"

Significantly, in September 2019, Can Decreix hosted a three-day cactus party as "*a first convivial and playful encounter with the cactus opuntia*[6]", given that "*the cactus could become a culture of great importance in the world*" (Candecreix.cat, 2019). At this festival, a menu was provided with an astonishing range of 22 choices, including a cactus brioche with cactus butter, olives and walnuts, 'cacfé', cactus soup, and buckwheat and cactus flour crêpes (*ibid.*). Striking here is the tendency to replicate familiar recipes, assuring a degree of "consumption continuity" (Clay *et al.*, 2020, p. 9), conceding to the "cultural economy of Western food", adapting this rather radical proposal to more "palatable" recipe choices (*ibid.*).

These attempts to stabilize experiments as more 'major' alternatives also highlights that for eco-communities interested in promoting wider societal changes, (minor) experimentation appeared necessary but insufficient, requiring further non- or less experimental practices to complement it. Can Decreix visitor Sebastián for instance argued that he did not think that experiment was a "*a way to change society, [...] it's [Can Decreix] a place where we can try different things, that could later be applied to the rest of society and effect a real change.*" Calí, a resident in another community (Calafou) argued that "*a project does not live only from experimentation. [...] It appears to me to be very important that people experiment, I want that everyone [...] should have a big space in their life to experiment. Everyone. But it needs to be one space, and there is another space – to produce. To produce things that generate autonomy for us.*" The division between 'experiment' and 'production' are spatialized here, while those in Can Decreix are temporalized. Both speak to a clear sense of the limits of experimentation – if one is interested in *building a different world*, some elements need to be 'settled on' and spread further.

I have mainly focused on analyzing the ways in which experiments produce difference, thanks to a focus on 'noticing.' However, it is when such experimentation – however vague it may initially be – is put in the service of fulfilling a more clearly recognizable political function, e.g., the construction of a post-capitalist order, that its outgrowths require assessment according to some external yardsticks.

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[4] This denomination is named after the small town of Banyuls-sur-Mer, around 10km Northwest of Cerbère.

[5] It must be noted that cacti a long agricultural history on other continents, including for instance in the Southern US and Mexico, and have as such also received academic attention, e.g. by Nabhan *et al.* (2020, p. 635) who note that 'In the Sonoran Desert, prickly pear (Opuntia) fruit are already harvested on large-scale and processed into syrups, jellies, candies, and probiotic fermented beverages.' This further underlines the relationality and context-dependence of minor and major.

[6] Opuntia is the Prickly Pear, family Cactaceae.

6. Evaluating the outgrowth from minor experiments

In the case of the eco-communities I studied, evaluation meant attending to the extent to which such experimentally derived practices were deemed to constitute alternatives to mainstream, capitalist modes of organizing societies and economies. I will apply Chatterton & Pusey's (2020) terrains of post-capitalist transformation as 'yardsticks' according to which the outgrowth of such experiments can be judged, focusing primarily on the cactus fest and the newly founded organization 'Cerbère Cactus.'

From alienation to 'doing'

During the cactus fest, a strong emphasis on 'play' and 'conviviality' stood out, with the cactus fest described as "*a first convivial and playful encounter with the cactus opuntia.*" Visitors generally were invited to *"come here and try a bit. Play the game. Try a bit and be surprised"* (Luc). Next to demonstrating cactus, the cactus fest was also a space for participants to take part in a 'cacti-cuisine', making salad out of the cladodes and cactus crème, sterilizing the fruits in solar ovens. Furthermore, in a 'Cacti-DIY' session, cacti were used to make shampoos, masks and cremes as well as cactus paper and sponges, with the website showing an image of a cactus 'cup' (Figure 6).

Figure 6: A cactus 'cup.' Source: Candecreix.cat (2022)

'Play', meaning a 'not serious', and a 'disinterested' activity "insomuch as it does not satisfy any immediate practical needs" (Castañeda, 2020, p. 60) may appear trivial compared to the 'serious' business of building alternatives to capitalism, but in fact chimes closely with "doing" "purposeful, concrete activity", not "subsumed into abstract labor" (*ibid*., p. 84), that may be viewed as an antidote to alienation under capitalism. Play of this kind can be viewed as an additional possibility for creating positive difference and thereby aid "the creation of a different society" (*ibid*., p. 85).

Space for play was not always perceived to be available in eco-communities aiming to contribute to alternatives to capitalism. In Can Masdeu, the gardeners yearned to "*play more*" (Daniel), e.g., by

experimenting with grafting, since the gardens were "*relatively automated*" requiring "*more control because otherwise people complain*" (Rafael). This highlighted the (economic) pressure to provide for others generally, catering to their expectations specifically as inhibiting 'play' and experimentation in various guises.

From commodification to socially useful doing

The cactus fest can simultaneously be read as an attempt to legitimize cactus cultivation as a 'serious' form of political intervention, and as 'socially useful production.' To do so, it addressed some wider political questions, such as "*could the cactus opuntia feed the planet?*" and "*Can we fend off climate change with the cactus?*" In so doing, it highlighted that cactus was an "*important culture in the world*" (Media Interview with France Culture, 2022) and therefore corresponded to "actual needs and desires" (Chatterton & Pusey 2020, p. 31).

More troubling issues around cactus – its spikiness – were also addressed heads-on by offering a "*guide for psychological preparation*", that included points on how to "*lose one's fear towards the cactus*" and "*how to avoid stings*" (Candecreix.cat, 2019). To this end, a "*specialist in the relations between humans and plants*" was invited, who spoke about "*the importance to question dendrophobia [a fear of trees]*", claiming that the cactus was a "*victim of an irrational rejection because it appears different, exotic*" (*ibid.*). The cactus fest therefore tried to work against many people's often visceral, knee-jerk rejection of the cactus, that might thwart further majoritization (Hayes-Conroy & Hayes-Conroy, 2013).

In December 2020, Luc got together with local winegrowers to create the non-profit association 'Cerbère Cactus', with the goal of "*experimenting, developing, and transmitting knowledges*", to "*plant experimental parcels*", "*promoting cactus products made*" and "*organizing events, encounters, and workshops around cactus*" (Journal Officiel de la République Française, 2020). However, the foundation of this association also led to a more commodified framing of the cactus, which was ironically a discussion point during the cactus fest, with the key question being "*how to achieve recognition and care for cactus whilst avoiding cactus' recuperation into the techno-industrial system?*" In this context, Patrick, another founding member, clarified that he convinced others of the benefits of cacti by emphasizing their exchange value: "*So I explained [...] the price of fresh cladodes is – he [another farmer] was astonished – more than 10 euros [US$10.95] per kilo of cladodes. [...] He gets €1.20 [US$1.31] per kilo of grapes*" (Media Interview with France Culture, 2022). In the press, cactus growing was similarly presented as a matter of "*agricultural diversification*" (Parayre, 2020) and a way of "*…creating jobs and to allow winegrowers to stay put by offering them an additional income"* (Le Haro, 2021).

While the cladodes were sold on the local farmers' market and to selected Mexican restaurants across France, further commodification possibilities emerged. Another member, Christiane, praised the economic possibilities of cactus grains which "*…make for one of the most expensive oils in the world – the liter is at €3000 [US$3,286]*" for which "*one ton of fruit*" is required. Since these "*grains were very hard to grind*", they were lobbying the "*local council to invest in a machine.*" Given the intense use of labor, high resource use and expensive machinery, cactus oil does not seem to be a particularly 'socially useful' way of eating or using cactus. Cerbère Cactus also inspired entrepreneur Anouk Lehideux, who started a business, L'Epineuse (Lepineuse.com, 2022), selling prickly pear juice at €5 (US$5.28) for 25cl (Le Haro, 2021). Meanwhile, a professional high school had declared itself interested in the project, "*…particularly around the commercialization of the processed plant (production of packaging or posters)*" (Le Haro, 2021).

Despite its origins in Can Decreix as a 'degrowth house', these offshoots fit rather neatly into conceptualizations of a capitalist 'capture' of minor experiments, by subordinating them "to the regime of exchange value" (May, 2005, p. 147). Put differently, this wide interest in cactus cultivation can be read as the "continual search for new areas to commodify" (Chatterton & Pusey 2020, p. 31), a central dynamic of capitalism. As Angela Last (2012, p. 719) has argued, there is a danger of appropriation in experiments that appear too "useful" and therefore may be vulnerable to "absorption into the very systems it is seeking to question."

Enclosure and the commons

Despite this danger of commodification, I want to cautiously suggest that a 'cactus commons' was at least underway, functioning as a local bulwark against complete 'capture.' While Luc in his initial cacti

experiments certainly fits the figure of a "privileged, heroic experimenter" (Pickerill, 2019, p. 120), with many visitors of the cactus fest similarly belonging to a "highly educated, white, able-bodied cohort" (*ibid*.; see Chitewere & Taylor, 2010), Cerbère Cactus as a non-profit organization seems to be a coming together of like-minded people, many of whom were local wine makers. The latter in particular hold an active stake in the promotion of a different plant that is meant to partially replace the vines they have thus far depended on. In this sense, experimenting and promoting cactus within Cerbère became a more equitable arrangement, with decisions made collectively in a general assembly.

The association also offered cactus cuttings to "*anyone interested in planting*" them (Le Haro, 2021), sharing the actual plants more widely. The association also encouraged locals to plant them on fallow parcels to subsequently and "*sell them in common*" (Media Interview with France Culture, 2022). The organization also worked together with the local council, who lent them municipally owned parcels to experiment with to "*show [cactus] to the public*" (*ibid*.). Still, it remains unclear who exactly will reap the profit made from the cactus planted on publicly owned land. In this context, a cooperative is also planned (Parayre, 2020), but its success and exact contours remain to be seen. Overall, this hints at the possibility of majoritizing cactus in a tentative and emerging 'cactus commons' in Cerbère.

These implicit considerations beyond the simple propagation of an experimental practice seem to suggest that there may be ways through which the commodification of novel practices may be contained to some degree. This gives some insight into how an experimental and promising practice can be integrated with the economic realities of an increasingly deprived area,[7] including with actors who partly engage with such an experimental practice on a different premise, i.e., its exchange value. Hence, despite certain economic pressures which could facilitate a complete 'capture' by capitalist logics, practices towards the non-for-profit sharing of knowledges and resources show that appropriation may be contained to some degree, at least within a community. The affordances of cactus as a hardy, easy to cultivate, and low-maintenance plant enable this. Still, ambiguity remains as cactus experiments are already 'out of the control' of those who instigated them, and commercialized by other actors, which may pressure their more commons-based approach. As such, it may be most suitable to view such cactus experiments as "glimmers of possible worlds" (Cameron, 2015, p. 99).

7. Conclusion

In this article, I have attempted to provide a conceptual framework and more empirical insights into the specifics of experiments taking place in eco-communities, by sketching out a spectrum of experiments ranging from 'minor' to 'major.' I have demonstrated the generativity of minor experiments around irrigation, capable of producing difference that may help us weather the climatic volatility of the Anthropocene and potentially contribute to ways of living and flourishing in a post-capitalist vein, heralding different agroeconomic futures. I have compared these with 'major' and 'hybrid' experiments, which held a different function in these sites. I have argued that since minor experiments proceed without orienting themselves to transcendent categories and representations, it is appropriate to examine and 'notice' (Tsing, 2015) their capacity to generate immanent difference, rather than critiquing the experimental set-up from the start or throughout the experimental process.

I have then examined minor experiments *in relation to* other ways of producing post-capitalist natures, that are less experimental and rather orient themselves along what is already known and 'settled', in a more 'major' vein. I have considered how a formerly minor experiment around cactus cultivation and domestication has become increasingly stabilized or 'majoritized' as a particular but rather common way of how (minor) experimental and non-experimental may stand in comparison. Attempts to majoritize cactus experiments involved convincing visitors of the utility of cactus and the semi-spontaneous cultivation of wild plants as a common-sense alternative to organic agriculture as categories of thought and doing that move beyond capitalism, hosting a cactus festival and finally, launching a non-profit organization that sought to further promote cacti, particularly with local winegrowers.

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[7] The Department of Pyrénées-Orientales, in which Cerbère is situated, is one of the poorest in the country, with the highest unemployment rate amongst French departments (15.3%), and the third-highest poverty rate (21.4%) in 2014 (Insee, 2018, p. 24-25). In 2023, nearly 50% of residents of the Department received some form of state support, a number that has been rising (Garnier, 2023) https://madeinperpignan.com/social-caf-un-habitant-sur-deux-pyrenees-orientales-couvert.

It is here in a second register, where "stabilized" experiments are mobilized not only to produce difference, but to have a wider impact, that criticizing the outgrowths of experiments becomes most pertinent. I did so by articulating more clearly what "we want", using Chatterton & Pusey's (2020) terrains of post-capitalist transformation as yardsticks for analysis and critique. I have therefore highlighted the playfulness and 'doing' of cactus encounters as they occurred during the cactus festival, that may present a bulwark against alienation. Furthermore, I have shown how significant effort was put into presenting cactus as a serious contender both as an alternative to organic agriculture in alternative sites as well as a potential solution for adapting local agricultural systems to a drier climate. This was done also through the foundation of a non-profit organization, Cerbère Cactus, which had as its goal the promotion of cactus, but also led to some, partially inadvertent, commodification and potential 'capitalist' capture. Despite this, a 'cactus commons' seemed to potentially be under way, as visible in freely shared cactus cuttings as well as the plan of opening a cooperative. Meanwhile, the substantial interest in cacti by more commercially interested actors may in future undercut such endeavors, perhaps underlining a key tension around usefulness of experimentally derived knowledges vs. their potential capture or appropriation (see Last, 2012). By underlining the relation between experiments and the non-experiments with which they merge, I have sketched out some of the politics involved in this process.

In presenting my argument, I have contributed to the emerging field of the political ecology of experiments by suggesting two registers of engaging with (minor) experiments, that fruitfully combines an appreciation for 'difference' with an attention to its 'critical' dimensions and their potential to contribute to 'better worlds': First, I suggest that a close attention to such minor experiments provide political ecological scholarship the possibility to rein in its 'critical impulses' and help uncover 'difference-in-itself' as it unfolds (Braun, 2015, p. 103). While this is perhaps a risky move and only applicable to low-stake experiments, an overly strong reliance on such categories may stifle the emergence of generative difference during the experiment and researchers' capacity to notice such difference (Roberts & Dewsbury, 2021).

Second, I propose that it may be most appropriate to examine minor experiments critically according to context-independent criteria once they have been more stabilized or majoritized, i.e., when minor experiments become recognizable to the involved actors. While it is of course possible to apply external evaluative yardsticks to 'minor' experiments, this may actively stand in the way of noticing difference in some cases, and/or not apply at all, given the tentativeness, spontaneity, and potential unrecognizability of minor experiments. In this second register, I have done so by relying on Chatterton & Pusey's (2020) terrains of transformation, which notably contain a desirable goal to aspire to, not only involving critique. In doing so, I hope to have outlined an approach that may actively contribute to understanding (practical) knowledges that may provide a more direct link to 'social transformation', and therefore better "reach the field's objectives and goals" (Braun, 2015, p. 101).

Bibliography

Anderson, B. (2017). Hope and micropolitics. *Environment and Planning D: Society and Space*, *35*(4), 593-595. https://doi.org/10.1177/0263775817710088

Anderson, J. (2017). Retreat or re-connect: How effective can ecosophical communities be in transforming the mainstream? *Geografiska Annaler, Series B: Human Geography*, 99(2), 192-206. https://doi.org/10.1080/04353684.2017.1324653

Argüelles, L. & March, H. (2022). Weeds in action: Vegetal political ecology of unwanted plants. *Progress in Human Geography*, 46(1), 44-66. https://doi.org/10.1177/03091325211054966

Atchison, J. (2015). Experiments in co-existence: The science and practices of biocontrol in invasive species management. *Environment and Planning A*, 47(8), 1697-1712. https://doi.org/10.1177/0308518X15597106

Bhakta, A. & Pickerill, J. (2016). Making space for disability in eco-homes and eco-communities. *Geographical Journal*, 182(4), 406-417. https://doi.org/10.1111/geoj.12157

Bobulescu, R. & Fritscheova, A. (2021). Convivial innovation in sustainable communities: Four cases in France. *Ecological Economics*, 181, 106932. https://doi.org/10.1016/j.ecolecon.2020.106932

Borsos, B. (2013). The Eco-Village concept in a model experiment in South-West Hungary. *Journal of Settlements and Spatial Planning*, 4(1), 69-76.

Boyer, R. (2016). Achieving one-planet living through transitions in social practice: A case study of dancing

rabbit ecovillage. *Sustainability: Science, Practice, and Policy*, 12(1), 47-59. https://doi.org/10.1080/15487733.2016.11908153

Braun, B. (2015). From critique to experiment? Rethinking political ecology for the Anthropocene. In Perreault, T., Bridge, G., & McCarthy, J., *The Routledge Handbook of political ecology*. Routledge. (pp. 102-115). https://doi.org/10.4324/9781003043645

Brown, E., Dury, S. & Holdsworth, M. (2009). Motivations of consumers that use local, organic fruit and vegetable box schemes in Central England and Southern France. *Appetite*, 53(2), 183-188. https://doi.org/10.1016/j.appet.2009.06.006

Brombin, A. (2019). The ecovillage movement: New ways to experience nature. *Environmental Values*, 28(2), 191-210. https://doi.org/10.3197/096327119X15515267418520

Bulkeley, H. & Castán Broto, V. (2013). Government by experiment? Global cities and the governing of climate change. *Transactions of the Institute of British Geographers*, 38(3), 361-375. https://doi.org/10.1111/j.1475-5661.2012.00535.x

Cameron, J. (2015). On experimentation. In Gibson, K., Bird Rose, D., & Fincher, R. (Eds.), *Manifesto for Living in the Anthropocene*. (pp. 99-103). Punctum Books. https://doi.org/10.21983/P3.0100.1.00

Candecreix.cat (2019). *Can Decreix: the house of degrowth*, *Candecreix.cat*. http://www.candecreix.cat/ (September 8, 2020)

Canmasdeu.net (n.d.). *Can Masdeu: Our history*. https://www.canmasdeu.net/our-history/?lang=en (December 4, 2020)

Caprotti, F. & Cowley, R. (2017). Interrogating urban experiments. *Urban Geography*, 38(9), 1441-1450. https://doi.org/10.1080/02723638.2016.1265870

Castañeda, P. (2020). From the Right to Mobility to the Right to the Mobile City: Playfulness and mobilities in Bogotá's cycling activism. *Antipode*, 52(1), 58-77. https://doi.org/10.1111/anti.12581

Castree, N. (2003). Commodifying what nature? *Progress in Human Geography*, 27(3), 273-297. https://doi.org/10.1191/0309132503ph428oa

Cattaneo, C. (2015). Eco-communities. In D'Alisa, G., Demaria, F., & Kallis, G. (Eds.), *Degrowth: A vocabulary for a new era.* (pp. 165-169). Routledge.

Chatterton, P. (2016). The rocky road of post-capitalist grassroots experimentation. In Gorse, C. & Dastbaz, M. (Eds.) *International SEEDS Conference*, 17–18 September 2015, Leeds Beckett University UK, Sustainable Ecological Engineering Design for Society. (pp. 31-44). Springer International.

Chatterton, P. & Pickerill, J. (2010). Everyday activism and transitions towards post-capitalist worlds. *Transactions of the Institute of British Geographers*, 35(4), 475-490. https://doi.org/10.1111/j.1475-5661.2010.00396.x

Chatterton, P. & Pusey, A. (2020). Beyond capitalist enclosure, commodification and alienation: Postcapitalist praxis as commons, social production and useful doing. *Progress in Human Geography*, 44(1), 27-48. https://doi.org/10.1177/0309132518821173

Chitewere, T. & Taylor, D. (2010). Sustainable living and community building in Ecovillage At Ithaca, *Environment and Social Justice*, 18, 141-176. https://doi.org/10.1108/S0196-1152(2010)0000018007

Clark, N. (2011). *Inhuman nature. Sociable life on a dynamic planet*. Sage.

Clay, N., Sexton, A., Garnett, T., & Lorimer J., 2020. Palatable disruption: The politics of plant milk. *Agriculture and Human Values*, 37, 945-962. https://doi.org/10.1007/s10460-020-10022-y

Daly, M. (2017). Quantifying the environmental impact of ecovillages and co-housing communities: a systematic literature review. *Local Environment*, 22(11), 1358-1377. https://doi.org/10.1080/13549839.2017.1348342

Davies, G. (2010). Where do experiments end? *Geoforum*, 41(5), 667-670. https://doi.org/10.1016/j.geoforum.2010.05.003

Dawson, J. (2004). Wholesome living. *Resurgence*, 225, 32-38.

Dawson, J. (2006). *Ecovillages: New frontiers for sustainability*. Green Books.

Dawson, J. (2013). From islands to networks: The history and future of the ecovillage movement. In Lockyer, J. & Veteto, J. (Eds.), *Environmental anthropology engaging ecotopia: Bioregionalism, permaculture, and ecovillages*. (pp. 217-235). Berghahn. https://doi.org/10.1515/9780857458803

Degrowth.org (n.d.). *Can Decreix*, *Degrowth.org*. Retrieved October 19, 2019, from https://degrowth.org/can-decreix/

Deleuze, G. & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia*. University of Minnesota Press.

Deleuze, G. & Parnet, C. (2002). *Dialogues II*. Columbia University Press.

Demaria, F., Kallis, G. & Bakker, K. (2019). Geographies of degrowth: Nowtopias, resurgences and the decolonization of imaginaries and places. *Environment and Planning E: Nature and Space*, 2(3), 431-450. https://doi.org/10.1177/2514848619869689

Dias, M. A., Loreiro, C., Chevitarese, L., & De Mello e Souza, C. (2017). The meaning and relevance of ecovillages for the construction of sustainable societal alternatives. *Ambiente e Sociedade*, 20(3), 79-96. https://doi.org/10.1590/1809-4422ASOC0083V2032017

van Dooren, T., Kirksey, E. & Münster, U. (2016). Multispecies Studies. *Environmental Humanities*, 8(1), 1-23. https://doi.org/10.1215/22011919-3527695

Egerer, M. & Fairbairn, M. (2018). Gated gardens: Effects of urbanization on community formation and commons management in community gardens. *Geoforum*, 96(July), 61-69. https://doi.org/10.1016/j.geoforum.2018.07.014

Eizenberg, E. (2012). Actually existing commons: Three moments of space of community gardens in New York City *Antipode*, 44(3), 764-782. https://doi.org/10.1111/j.1467-8330.2011.00892.x

Ernwein, M. (2017). Urban agriculture and the neoliberalization of what? *ACME*, 16(2), 249-275.

Ernwein, M., Ginn, F. & Palmer, J. (2021). *The work that plants do: Life, labor and the future of vegetal economies*. Transcript Verlag.

Fadaee, S. (2019). The permaculture movement in India: a social movement with Southern characteristics. *Social Movement Studies*, 18(6), 720-734. https://doi.org/10.1080/14742837.2019.1628732

Fleming, J. (2017). Toward vegetal political ecology: Kyrgyzstan's walnut–fruit forest and the politics of graftability. *Geoforum*, 79, 26-35. https://doi.org/10.1016/j.geoforum.2016.12.009

Fois, F. (2019). Enacting experimental alternative spaces. *Antipode*, 51(1), 107-128. https://doi.org/10.1111/anti.12414

France Culture (2022). Les Escargots de Quimper et les Cactus de Cerbère. https://www.franceculture.fr/emissions/les-pieds-sur-terre/les-escargots-de-quimper-et-les-cactus-de-cerbere (February 10, 2022)

Garnier, P. (2023), Un habitant sur deux des Pyréneés-Orientales est couvert par la Caf, *Made in Perpignan*. https://madeinperpignan.com/social-caf-un-habitant-sur-deux-pyrenees-orientales-couvert/ (August 21, 2023)

Gibson-Graham, J.K. (2006). *A postcapitalist politics.* University of Minnesota Press.

Gibson-Graham, J. K. (2008). Diverse economies: Performative practices for "Other Worlds." *Progress in Human Geography*, 32(5), 613-632. https://doi.org/10.1002/9781118384497.ch1

Gibson-Graham, J. K. & Roelvink, G. (2009). An economic ethics for the Anthropocene. *Antipode*, 41, 320-346. https://doi.org/10.1111/j.1467-8330.2009.00728.x

Gibson, C. & Warren, A. (2020). Keeping time with trees: Climate change, forest resources, and experimental relations with the future. *Geoforum*, 108, 325-337. https://doi.org/10.1016/j.geoforum.2019.02.017

Gilman, D. & Gilman, R. (1991). *Eco-villages and sustainable communities.* The Context Institute.

Ginn, F. & Ascensão, E. (2018). Autonomy, erasure, and persistence in the urban gardening commons. *Antipode*, 50(4), 929-952. https://doi.org/10.1111/anti.12398

Graeber, D. & Wengrow, D. (2021). *The dawn of everything: A new history of humanity*. Farrar, Straus and Giroux.

Grinde, B., Nes, R. B., MacDonald, I. F., & Wilson, D. S. (2018). Quality of life in intentional communities. *Social Indicators Research*, 137(2), 625-640. https://doi.org/10.1007/s11205-017-1615-3

Gross, M. & Krohn, W. (2005). Society as experiment: Sociological foundations for a self-experimental society. *History of the Human Sciences*, 18(2), 63-86. https://doi.org/10.1177/0952695105054182

Hall, M. (2011). *Plants as persons: A philosophical botany*. State University of New York Press.

Haraway, D. (1997). *Modest_Witness@Second_Millennium. FemaleMan_Meets_OncoMouse: Feminism and Technoscience*. Routledge.

Haraway, D. (2008). *When species meet*, *environmental philosophy*. University of Minnesota Press. https://doi.org/10.5840/envirophil20085218

Insee (Institut national de la statistique et des études économiques) (2018), Les Pyrénées-Orientales, un département parmi les plus attractifs, mais des niveaux de chômage et de pauvreté élevés, Dossier Occitanie n. 8. https://www.insee.fr/fr/statistiques/fichier/3629129/lm_ind_08_Pyrenees_Orientales.pdf (August 21, 2023)

Journal Officiel de la République Française (2020), Annonce n. 1032, 66 – Pyrénées-Orientales, ASSOCIATIONS, Créations, Cerbère Cactus. https://compte.journal-officiel.gouv.fr/pages/verification_pdf/?source=jo_associations&q=id:202000511032 (February 15, 2022)

Le Haro, E. (2021, February 1). Le Cactus: une idée à creuser a Cerbère. *L'Independant*, https://www.lindependant.fr/2021/02/01/le-cactus-une-idee-a-creuser-a-cerbere-9347231.php (February 15, 2022)

Hayes-Conroy, J. & Hayes-Conroy, A. (2013). Veggies and visceralities: A political ecology of food and feeling. *Emotion, Space and Society*, 6(1), 81-90. https://doi.org/10.1016/j.emospa.2011.11.003

Head, L., Atchison, J. & Phillips, C. (2015). The distinctive capacities of plants: Re-thinking difference via invasive species. *Transactions of the Institute of British Geographers*, 40(3), 399-413. https://doi.org/10.1111/tran.12077

Himada, N., & Manning, E. (2009). From noun to verb: The micropolitics of making collective. *Inflexions: A Journal for Research Creation*, *3*, 1-17.

Holloway, J. (2010). *Crack capitalism*. Pluto Press.

Ingold, T. (2011). *Being alive: Essays on movement, knowledge and description*. Routledge.

Jellis, T. (2013). *Reclaiming experiment: Geographies of experiment and experimental geographies*. PhD dissertation. School of Geography and the Environment, University of Oxford.

Jellis, T. & Gerlach, J. (2017). Micropolitics and the minor. *Environment and Planning D: Society and Space*, 35(4), 563-567. https://doi.org/10.1177/0263775817718013

Johnson, E., Morehouse, H., Dalby, S., Lehman, J., Nelson, S., Rowan, R., Wakefield, S., & Yusoff, K. (2014). After the Anthropocene: Politics and geographic inquiry for a new epoch. *Progress in Human Geography*, *38*(3), 439-456. https://doi.org/10.1177/0309132513517065

Kirby, A. (2003). Redefining social and environmental relations at the ecovillage at Ithaca: A case study. *Journal of Environmental Psychology*, 23(3), 323-332. https://doi.org/10.1016/S0272-4944(03)00025-2

Klocker, N., Head, L., Dun, O., & Spaven, T. (2018). Experimenting with agricultural diversity: Migrant knowledge as a resource for climate change adaptation. *Journal of Rural Studies*, 57, 13-24. https://doi.org/10.1016/j.jrurstud.2017.10.006

Krzywoszynska, A. (2017). Empowerment as skill: The role of affect in building new subjectivities. In Bastian, M., Jones, O., Moore, N., & Roe, E. (Eds.), *Participatory research in more-than-human worlds*. (pp. 127-141). Routledge.

Kullman, K. (2013). Geographies of experiment/experimental geographies: A Rough Guide. *Geography Compass*, 7(12), 879-894. https://doi.org/10.1111/gec3.12087

Lane, S. N., Odoni, N., Landström, C., Whatmore, S. J., Ward, N., & Bradley, S. (2011). Doing flood risk science differently: an experiment in radical scientific method. *Transactions of the Institute of British Geographers*, 36(1), 15-36. https://doi.org/10.1111/j.1475-5661.2010.00410.x

Last, A. (2012). Experimental geographies. *Geography Compass*, 6(12), 706-724. https://doi.org/10.1111/gec3.12011

Lawrence, A. M. (2022). Listening to plants: Conversations between critical plant studies and vegetal geography. *Progress in Human Geography*, 46(2), 629-651. https://doi.org/10.1177/03091325211062167

Leahy, T. (2021). *The politics of permaculture*. Pluto Press. https://doi.org/10.2307/j.ctv1sjwpv5

Lepineuse.com (2022), La figue de barbarie française: Des produits naturels inspirés de ce qui nous entoure, https://www.lepineuse.com/ (February 19, 2022)

Litfin, K. (2014). *Ecovillages: Lessons for sustainable community*. Polity Press.

Lockyer, J. (2017). Community, commons, and degrowth at Dancing Rabbit Ecovillage. *Journal of Political Ecology*, 24(1), 519-542. https://doi.org/10.2458/v24i1.20890

Longhurst, N. (2015). Towards an "alternative" geography of innovation: Alternative milieu, socio-cognitive protection and sustainability experimentation. *Environmental Innovation and Societal Transitions*, 17, 183-198. https://doi.org/10.1016/j.eist.2014.12.001

Lorimer, J. & Driessen, C. (2014). Wild experiments at the Oostvaardersplassen: Rethinking environmentalism in the Anthropocene. *Transactions of the Institute of British Geographers*, 39(2), 169-181. https://doi.org/10.1111/tran.12030

Maeckelbergh, M. (2011). Doing is believing: Prefiguration as strategic practice in the alterglobalization movement. *Social Movement Studies*, 10(1), 1-20. https://doi.org/10.1080/14742837.2011.545223

Manning, E. (2016). *The minor gesture*. Duke University Press.

Marder, M. (2013). *Plant-Thinking: A philosophy of vegetal life*. Columbia University Press.

Margulies, J. D., Bullough, L. A., Hinsley, A., Ingram, D. J., Cowell, C., Goettsch, B., ... & Phelps, J. (2019). Illegal wildlife trade and the persistence of "plant blindness." *Plants, People, Planet*, *1*(3), 173-182. https://doi.org/10.1002/ppp3.10053

Marres, N. (2009). Testing powers of engagement: Green living experiments, the ontological turn and the undoability of involvement. *European Journal of Social Theory*, 12(1), 117-133. https://doi.org/10.1177/1368431008099647

Massey, M., O'Cass, A. & Otahal, P. (2018). A meta-analytic study of the factors driving the purchase of organic food. *Appetite*, 125, 418-427. https://doi.org/10.1016/j.appet.2018.02.029

May, T. (2005). *Gilles Deleuze: an introduction*. Cambridge University Press.

McCormack, D. (2011). Thinking in transition: The affirmative refrain of experience/experiment. In Anderson, B., & Harrison, P. (Eds.), *Taking-Place: Non-representational theories and geography*. (pp. 201-221). Routledge.

McKiernan, S. & Instone, L. (2016). From pest to partner: Rethinking the Australian White Ibis in the more-than-human city. *Cultural Geographies*, 23(3), 475-494. https://doi.org/10.1177/1474474015609159

Metcalf, B. (2004). *The Findhorn book of community living*. Findhorn Press.

Monticelli, L. (2018). Embodying alternatives to capitalism in the 21st century. *TripleC*, 16(2), 501-517. https://doi.org/10.31269/triplec.v16i2.1032

Nabhan, G. P., Riordan, E. C., Monti, L., Rea, A. M., Wilder, B. T., Ezcurra, E., ... & Hodgson, W. C. (2020). An Aridamerican model for agriculture in a hotter, water scarce world. *Plants, People, Planet*, *2*(6), 627-639. https://doi.org/10.1002/ppp3.10129

Nightingale, A.J. (2019). Commoning for inclusion? Commons, exclusion, property and socio-natural becomings. *International Journal of the Commons*, 13(1), 16-35. https://doi.org/10.18352/ijc.927

Pansera, M. & Fressoli, M. (2021). Innovation without growth: Frameworks for understanding technological change in a post-growth era. *Organization*, 28(3), 380-404. https://doi.org/10.1177/1350508420973631

Parayre, V. (2020). Cerbère 'piqué' de cactus: le village voit cette plante comme source de diversification agricole. *l'Independant*, https://www.lindependant.fr/2020/11/05/cote-vermeille-manger-du-cactus-pour-sauver-la-planete-cerbere-se-prepare-a-devenir-la-capitale-du-nopal-9183685.php (February 15, 2022)

Pickerill, J. (2013). Permaculture in practice: Low impact development in Britain. In Lockyer, J. & Veteto, J. R. (Eds.), *Environmental Anthropology: Engaging Ecotopia: Bioregionalism, Permaculture, and Ecovillages*. (p.180-194). Berghahn. https://doi.org/10.1515/9780857458803

Pickerill, J. (2016). *Eco-Homes: people, place and politics*. Zed Books.

Pickerill, J. (2017). Critically interrogating Eco-Homes. *International Journal of Urban and Regional Research*, 41(2), 353-365. https://doi.org/10.1111/1468-2427.12453

Pickerill, J. (2019). Experimentations. In Jazeel, T., Kent, A., McKittrick, K., Theodore, N., Chari, S., Chatterton, P., Gidwani, V., Heynen, N., Larner, W., Peck, J., Pickerill, J., Werner, M., & Wright, M.W., *Keywords in Radical Geography: Antipode at 50*. Wiley.

Pickerill, J. & Maxey, L. (2009). Geographies of sustainability: Low impact developments and radical spaces of innovation. *Geography Compass*, 3(4), 1515-1539. https://doi.org/10.1111/j.1749-8198.2009.00237.x

Pitt, H. (2017). Questioning care cultivated through connecting with more-than-human communities. *Social and Cultural Geography*, 19(2), 253-274. https://doi.org/10.1080/14649365.2016.1275753

Povinelli, E. A. (2011). *Economies of abandonment: Social belonging and endurance in late liberalism*. Duke University Press. https://doi.org/10.1080/14616742.2013.841565

Powell, R. C. & Vasudevan, A. (2007). Geographies of experiment. *Environment and Planning A*, 39(8), 1790-1793. https://doi.org/10.1068/a3927

Price, O. M., Ville, S., Heffernan, E., Gibbons, B., & Johnsson, M. (2020). Finding convergence: Economic perspectives and the economic practices of an Australian ecovillage. *Environmental Innovation and Societal Transitions*, *34*, 209-220. https://doi.org/10.1016/j.eist.2019.12.007

Puig de la Bellacasa, M. (2010). Ethical doings in naturecultures. *Ethics, Place and Environment*, 13(2), 151-169. https://doi.org/10.1080/13668791003778834

Rabinow, P. & Bennett, G. (2012). *Designing human practices: An experiment with synthetic biology*. University of Chicago Press.

Robbins, P. & Moore, S. A. (2013). Ecological anxiety disorder: Diagnosing the politics of the Anthropocene. *Cultural Geographies*, 20(1), 3-19. https://doi.org/10.1177/1474474012469887

Roberts, T. & Dewsbury, J. D. (2021). Vital aspirations for geography in an era of negativity: Valuing life differently with Deleuze. *Progress in Human Geography*, 45(6), 1512-1530. https://doi.org/10.1177/0309132521996462

Roux-Rosier, A., Azambuja, R. & Islam, G. (2018). Alternative visions: Permaculture as imaginaries of the Anthropocene. *Organization*, 25(4), 550-572. https://doi.org/10.1177/1350508418778647

Roysen, R. & Mertens, F. (2019). New normalities in grassroots innovations: The reconfiguration and normalization of social practices in an ecovillage. *Journal of Cleaner Production*, 236. 117647. https://doi.org/10.1016/j.jclepro.2019.117647

Rubin, Z. (2020). 'A Not-so-silent Form of Activism': Intentional community as collective action reservoir, *Humanity & Society*, 45(4), 509-532. https://doi.org/10.1177/0160597620951945.

Sargisson, L. (2001). Politicising the quotidian. *Environmental Politics*, 10(2), 68-89. https://doi.org/10.1080/714000535

Scott, J. C. (2011). *Against the grain: A deep history of the earliest states*. Yale University Press.

Scott-Cato, M., & Hillier, J. (2010). How could we study climate-related social innovation? Applying Deleuzean philosophy to Transition Towns. *Environmental Politics*, *19*(6), 869-887. https://doi.org/10.1080/09644016.2010.518677

Sekulova, F., Anguelovski, I., Argüelles, L., & Conill, J. (2017). A 'fertile soil' for sustainability-related community initiatives: A new analytical framework. *Environment and Planning A*, *49*(10), 2362-2382. https://doi.org/10.1177/0308518X17722167

Stengers, I. (2008). A constructivist reading of *Process and Reality*. *Theory, Culture and Society*, 25(4), 91-110. https://doi.org/10.1177/0263276408091985

Sullivan, E. (2016). Individualizing Utopia: Individualist pursuits in a collective cohousing community. *Journal of Contemporary Ethnography*, 45(5), 602-627. https://doi.org/10.1177/0891241615587527

Thompson, M. (2015). Between boundaries: From commoning and guerrilla gardening to community land trust development in Liverpool. *Antipode*, 47(4), 1021-1042. https://doi.org/10.1111/anti.12154

Tsing, A. L. (2015). *The mushroom at the end of the world: On the possibility of life in capitalism ruins*. Princeton University Press.

Ulug, C., Trell, E. M. and Horlings, L. (2021). Ecovillage foodscapes: zooming in and out of sustainable food practices. *Agriculture and Human Values*, 38(4), 1041-1059. https://doi.org/10.1007/s10460-021-10213-1

Wright, E. O. (2013). Transforming capitalism through real utopias. *American Sociological Review*, *78*(1), 1-25. http://dx.doi.org/10.7227/IJS.21.2.2

Yates, L. (2015). Rethinking prefiguration: Alternatives, micropolitics and goals in social movements. *Social Movement Studies*, 14(1), 1-21. https://doi.org/10.1080/14742837.2013.870883