

Making and repairing places for making and repairing

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ABSTRACT

Collective DIY (do-it-yourself) is a phenomenon that is increasingly connected with struggles for autonomy. Autonomy here is seen as creating shared resources and the means of continuously steering the activities of the collective. Therefore, this article explores contemporary, collective DIY initiatives, and the relation of design and autonomy in such initiatives, based on three cases from Finland and Germany. The first case is a sewing cafe located close to Ulm that has operated as a living lab for research on sustainable consumption since 2016. The second case is a cultural lab in Helsinki, which was open for all to participate in and ran on an internal currency for one year until its closure, in 2017. Finally, the third case is a cultural lab in Berlin, which has provided a space for a variety of DIY activities since 2010. The paper conceptualizes the initiatives with the notion of infrastructure in order to better understand how these initiatives create conditions for different ways of being and acting from a design perspective. I complement this concept with a practice-theoretical approach in order to see if these different ways of acting hold any potential for autonomy in everyday life. Empirical evidence, including evidence from interviews with the organizers and participant observation, indicates that DIY collectives organize around ideals of creativity, democratic and mutually supportive relations, and sets of commons. Whilst evidence on the broader impacts of the initiatives is scarce, skills, common resources, and alternative spaces outside the market logic have potential for autonomy in everyday life.

Keywords: DIY, DIT, autonomy, infrastructuring, practice theory.

Introduction

Approaching the Christmas season, Greenpeace (2017) and other groups organized “MAKE SMTHNG Week”, a free-to-copy event that acted as a countertactic to the seasonal peak of the Western consumption drive. Making, clearly, has become trendy in the West. Various forms of DIY activism and skill-sharing events—such as sewing cafes, repair cafes, or initiatives on food preservation or homemade cosmetics—have popped up in both cities and villages across Europe during the 2010s.

While there is both supply and demand for events of making, the motivations of practitioners seem to be manifold (Langreiter and Löffler, 2016, p. 11). For some, these DIY activities might be a way to express oneself (Campbell, 2005) or a fulfilling part-time activity through learning or bonding with people (Kuznetsov and Paulos, 2010, p. 209), while for others these are instances of empowerment within an otherwise hard-to-penetrate regime of work and spend (Atkinson, 2006), which is, however, mostly reserved to Western individuals who are well off (Tannenbaum *et al.*, 2013, p. 2605). At the same time, research is scarce regarding how dedicated DIY initiatives and their spaces are organized, as well as what the broader implications for practitioners are. Here, autonomy and infrastruc-

turing help to conceptualize how the conditions required to create and repair are enabled and how practitioners are involved in this process.

In terms of autonomy, organized DIY communities might not be very close knit and efforts to strive for different ways of producing and consuming appear almost luxurious compared to communities fighting for their livelihood. Still, by creating the conditions for people to experience different ways of relating to humans or non-humans, these collective endeavors do resemble what has been referred to as “*autonomía*” in the Global South (Escobar, 2017). However, autonomy also means that a collective is able to steer its activities (Escobar, 2017). Above all, this inclusive, organizational process concerns the previously mentioned conditions for the collective, which need to be remade time and again.

The constant work of designing and creating conditions for different ways of acting can also be analyzed as “infrastructuring.” Infrastructuring in participatory design (PD) describes the open-ended process of designing for future use and under continuous alignment with the surroundings, instead of the more traditional focus on the artifact without considering its context (Björgvinsson, 2014, p. 190). Infrastructuring, particularly as it was introduced by Star and Bowker, also highlights the intangible conditions of human activity, such as knowledge pools (Star and Bowker, 2002).

Adopting this perspective of infrastructuring will help us to understand how design can support DIY collectives and therefore contribute to struggles for autonomy.

Finally, with regard to the above-mentioned relational ways of being with humans or non-humans, autonomy can be viewed as consisting of practices enabled by collective resources and infrastructuring processes. Practice theories (PTs) might therefore help us to understand how autonomy takes place. A key aspect of these accounts is that practices are regarded as sustained and routinized ways of acting that come into being through the interplay and integration of competences, material, and meanings (Shove *et al.*, 2012). Due to such temporal dynamics, a practice-theoretical approach offers a way to see how new skills and orientations can be learned in DIY spaces and potentially carried beyond these spaces.

Using the notion of infrastructuring and social practices, this paper aims to better understand the relation of DIY communities, autonomy, and design. More specifically, this paper aims at (1) better understanding what kind of collective resources are designed in DIY communities and emerge from them. However, in addition to creating resources, the very initiative itself needs to endure. Therefore, the paper asks (2) how the initiatives and key collective resources are reproduced over time and (3) how they support and cultivate alternative practices and relations among participants. The rationale behind this triplet of aims is that any resources created need to be practically useful in order for the initiatives to remain viable.

The paper draws on semi-structured interviews in order to discuss three dedicated DIY initiatives in Finland and Germany where activities centered on learning skills are organized in a regular manner, forming a loosely knit community under constant fluctuation. The first example, Dietenheim zieht an (<http://dietenheim-zieht-an.de/>) is a sewing cafe that opened in July 2016 as part of a partnership between a university and the local authorities of a village in what was formerly a textile industry hotspot of South-western Germany. The second example is an experimental cultural lab, called Temporary (<https://temporary.fi/>), which operated in Helsinki for one year until closing in September 2017. This space was open for everyone to take part in and organize participatory events, running on an internal currency. Finally, Trial & Error (<https://www.trial-error.org/>) is a cultural lab from Berlin, operating since 2010 in changing locations and hosting all sorts of skill-sharing events, such as a regular language, nature, and food labs, as well as other free resources.

The remainder of the paper is structured as follows. I will first examine literature on the history of DIY in the early industrialized countries of Europe and North America. Comparing instances of pure necessity with forms of leisure, as well as more politicized activities, I will provide a better understanding of the variegated field of DIY and subsequently the relations between DIY communities and autonomy. Next, I will introduce the concept of infrastructuring as it is being applied within PD before I complement this concept with practice-theoretical accounts. Finally, I will introduce the three cases separately and discuss the main findings.

DIY: A short history of de- and reskilling

The topic of DIY has certainly gained momentum since the rise of peer exchange formats on the internet in the 2000s such as Etsy or Crafster (Kuznetsov and Paulos, 2010), and dedicated physical spaces for making and repairing in the 2010s (Cohen, 2017), yet it is far from being a new phenomenon (Atkinson, 2006). Indeed, the further one goes back in history, the more people and their collectives have had to make things for themselves. While the 1950s are commonly referred to as the decade of the origin of DIY, Atkinson points out that in the UK this view only holds true for DIY as mass-marketed and popularized home improvement. Already in the 1920s, the shortage of labour and resources had made thriftiness a necessity for both the working class and parts of the middle class, and, to extend the historical pedigree even further, a similar observation can be made about the working class of the Victorian age (Atkinson, 2006). DIY in these times is characterized by the unavailability of resources and the availability of time.

Similarly, striving for home improvements in the UK and US after the Second World War, originating from the reasoning of resourcefulness and "making do", was heavily popularized through magazines and the first television shows (Atkinson, 2006). While initially women and men, skilled through times of economic deprivation and blessed with increasing rates of home ownership, could "realize their dreams of domestic living" (Goldstein, 1998 *in* Atkinson, 2006), the movement rather quickly took another turn along the lines of increasing consumerism. DIY practices arguably became less necessary due to sheer resource abundance, such as is the case regarding mending clothes, and—parallel to the simplification of household tasks—less challenging through the design of pre-made kits (Atkinson, 2006). In comparison to this, it can also be noted that many forms of professional work that are common in the middle classes have changed from a vocation to more managerial practices, thus potentially recreating the need for skillful, practical engagement during people's free time (Cohen, 2017). Taking these perspectives into account, we can see a shift from DIY as necessity based to it being a form of leisure activity, happening against the backdrop of the gradual deskilling of citizens. Arguably, this is how DIY is commonly understood today in the Western context.

However, there are also more political accounts of DIY after the second World War. A study on DIY practices in Germany of the 1960s, describes them rather as disciplining, spreading ideals of middle-class harmony and how time ought to be spent (Voges, 2017). On the other hand, as Atkinson points out, the democratizing agency of DIY also included the opening up of class- or gender-bound activities, for example, bringing together the "seemingly paradoxical notions of manliness and domesticity" in post-war times (Atkinson, 2006, p. 8) or bonding between family members (Atkinson, 2006). Therefore, DIY has served both as perpetuating norms and breaking them up.

Similar to the post-war times, the more recent wave of DIY has been interpreted both as leisure practice and as politically charged. Building on the first, Campbell coined the term "craft consumer." Looking at gardening or interior

decorating practices, he argues that an increasing amount of people who are comfortably off engage in craft activities as a specific form of personal expression (Campbell, 2005). An arguably more popular term, yet perhaps slightly hackneyed, is “making” or, with respect to its alleged size and hype, the “maker movement”. According to Cohen (2017), it comprises a plethora of activities ranging from knitting to producing spare parts with a 3D printer but is often being used to perpetuate existing commercial interests under the guise of making and hacking. However, in other cases, such as DIY biology collectives, the product hacking includes means to extract and visualize DNA (Meyer, 2013). *Making* then, despite often demonstrating an apolitical approach, can bring a more serious aspect to the discussion, namely the distribution and democratizing of production means.

Concurrent to the surge in craft and making activities, we can see a striving for more simple, if not autonomous, lifestyles that is currently trending in affluent European and North American countries. Ironically, such lifestyles are popularized by a whole range of magazines, promising well-being and flow from baking and knitting for today's overworked and constantly short of time citizen. As a recent newspaper article pointed out, through their advertisements these magazines provide incentives for more consumption and generally make the case for having it cozy at home instead of questioning Western lifestyles and the roots of their diminished well-being (Burmester, 2017), aligning with Voges' description of the 1960s middle-class harmony. The irony above underlines again the different logics of DIY, such as being both a collective movement but also a personal, short-term remedy.

While at first glance these politicized narratives make the case for an ethos of productivity and usefulness (Weber, 2001), some of the current DIY practices might be ways to break free from this imperative through their purposeful amateurism. After all, there is a lot of trial and error, and certainly not much time efficiency involved when doing things yourself that can be bought by most Western people, the bought item being of far better quality and available in no time. DIY communities can make such a counter culture to the consumption imperative easier by providing a relatively low entrance barrier to the exchange of ideas, skills, and resources (Kuznetsov and Paulos, 2010). Similarly, with reference to the appeal of more autonomous lifestyles, it should be noted that an ethos of productivity does not have to work in a capitalistic manner, but can work according to self-development. Developing skillfulness within a DIY practice, such as fermenting food for your own use, certainly enhances personal well-being (Warde, 2005) and might even provide a feeling of empowerment. “Inefficient” production, learning skills, and being part of a community can consequently be seen as different ways of being and thus show a potential connection between contemporary DIY and autonomy.

As pointed out by Voges and Atkinson above, these political aspects of DIY are far from new. With regard to community aspects, the social bonding between “family” members mentioned by Atkinson can again be found within more contemporary notions of family. Here, communities or collectives, such as contemporary versions

of knitting circles or some more inclusive makerspaces, come to mind. Meyer also makes the point that instead of talking of DIY, it would be more appropriate to speak of do-it-together (DIT). In fact, all the above-mentioned activities make use of previously fabricated tools, know-how, and infrastructure, thus directly or indirectly relying on other persons, materials, or also commons (Meyer, 2017). Such perspectives emphasize the collective nature of any DIY practice and turn the inherent logic of self-provision on its head.

To sum up, this brief history of DIY demonstrates that the phenomenon of DIY is far more variegated, political, and relational than it is commonly conceived to be. Over time the meaning attached to it has come to include idle time, self development, the relative independence of capital, or even social bonding. In the following, I will elaborate further on the last point, namely the communal nature of DIY initiatives, and its relation to autonomy.

DIY communities and autonomy

The DIY initiatives and cultural labs studied in this paper can be regarded as communities. The communities may not be communities in the sense of a rural, close-knit community fighting against gigantic opponents for their way of living in the Global South. Rather, these communities are loosely knit groups of people, arguably creating their own norms, practices, and goals, as well as trying to stay in charge of being able to do this (Escobar, 2017). Certainly, there are differences in the meanings attached to the respective struggles for autonomy. Also, it seems reasonable to state that individualism has spread further in the Global North than in the Global South, and that the collective notion of *autonomía* found in the latter, might not be found to the same extent in the former. However, there are various efforts to redevelop community cohesion in the Global North. Thus, DIY communities might be one way to return to more relational ways of being with other humans and non-humans or, with regard to the paper's title, to make and repair the conditions for it.

This view of DIY initiatives, that is, how they relate to or help to create autonomy, has not been covered much yet. Raboud (2015) discusses two Swiss cases from the 1980s and 2010s, where DIY youth scenes struggled to create the type of entertainment they sought. In these examples of decentralized cultural production, and because DIY refuses authorities when it comes to who can create, he sets DIY as being more or less equal to autonomy. However, Raboud (2015) goes on to state that the struggle for autonomy means “fighting to obtain space freed from capital and the state” (p. 32), something which will be hard to achieve for most DIY communities. At the same time, this spatial condition is a crucial aspect that any community aiming at fostering more relational ways of being instead of constant commodification has to come to terms with unless they use the technique of squatting (Cattaneo and Martinez, 2014). As DIY communities tend to be organized in a loose manner and are subject to having a temporary presence and fluctuating participation, they will most likely not succeed in claiming an abandoned site. More probably, in the urban context, is temporary use or conventional rent-

al agreements, which brings along the question of how to afford the space collectively.

While the DIY communities might end up finding arrangements regarding the capital for the space, or making arrangements with the state or the community members, in order to provide the spatial condition, the other important factor of autonomy is the ability to steer the process. With regard to design for autonomy, Escobar (2017) describes autonomy as creating conditions that empower a collective to effect change for itself, "to change traditions traditionally" (p. 6). Here, we can ask how and what sort of decision making mechanisms and rules are created to organize the initiative? Similarly, the question arises: How do the organizers hand over responsibilities in the initiative? These questions are of specific interest to this study, especially in respect to the long-term survival of a DIY initiative. To rephrase it in allusion to the paper's title, how are the spaces made and repaired over time? In order to further discuss the relation of design and autonomy, I will introduce the concept of infrastructuring next, which resembles Escobar's definition above.

Infrastructuring for communities and commons

Bowker and Star (1999) put forward the notion of *infrastructuring* to better account for both the constantly unfolding quality of infrastructure activities as well as their extended time spans. What is important here is the continuous alignment of the human and non-human actors with their respective context. The concept of an "installed base" specifically emphasizes how the infrastructuring happens with what is already there in the surroundings (Star and Bowker, 2002). They also suggest that instead of focusing on what an infrastructure is, it should rather be considered when it is noticed as such by users (Star and Bowker, 2002), foregrounding the relational aspects and surroundings of artifacts rather than the artifacts themselves (Pipek and Wulf, 2009). Clearly, artifacts will differ in the meaning and use which different members of a community attach to them over time. Therefore, including the plurality of these meanings and their mutations appears to be crucial when working with infrastructures.

The notion of infrastructuring has increasingly been used in PD, which has a strong focus on workplace democracy. Traditionally, the focus of PD is on involving all identifiable stakeholders in order to counter power and resource imbalances, and improve the workplace situation of employees (Björgvinsson *et al.*, 2012). At the workplace, as *infrastructure* we can describe the collection of objects, norms, and processes that the individual or the group make use of in order to reach their respective goals (Pipek and Wulf, 2009). More recently, PD has included less formal settings than the workplace, such as being set in communities and everyday life, introducing new challenges and new concepts in order to work with these settings (Björgvinsson *et al.*, 2012). Adopting this perspective of design work as infrastructuring will help us to understand how design can contribute to autonomy in the case of DIY communities.

Within the subfield of infrastructuring for communities, terms such as "design after design" have been intro-

duced to the debate to account for the more fluid nature of participation in this context (Karasti, 2014). Ehn (2008) describes infrastructuring as design after design, referring to a more open-ended design process where something is designed for future-use situations, in contrast to the shortcomings of designing during a specific project time. With regard to communities, this design approach highlights how resources are created in such a way that they can be adopted and appropriated beyond the initial use case (LeDantec and Disalvo, 2013). This long-term adaptability empowers people who are otherwise mere users and can be seen as one possible design contribution to struggles for autonomy in the context of DIY initiatives. With regard to further possible contributions, we can then ask which resources are created and which are necessary for the community?

One specific type of outcome of design as infrastructuring is commons. Commons, often described as shared resources (Hess and Ostrom, 2007), can be distinguished according to three categories: *traditional commons*, *new commons* and *activist/practitioner commons* (Marttila and Botero, 2016). While the first one includes for example sustaining natural resources, new commons are related to the sharing of knowledge, and activist commons are concerned with the relational quality and the process of "commoning" (Marttila and Botero, 2016). The notion of commoning can also be found in Elzenbaumer's (2013) search for alternative design practices, where she asks for material or social support structures to counter existing patterns of precarisation. As such, activist commons and new commons clearly play a role in the case of DIY initiatives. The questions to ask here are: What can be described as commons in their context? And how can design help to locate and govern critical commons?

However, commons are just one possible contribution to autonomy by DIY initiatives. Practitioners might also simply learn skills that they do not share, but that they can still benefit from in their everyday life. This opens up an important aspect. Arguably, in order for any resources to have the potential for autonomy, they need to move from the workshop setting into everyday life. Therefore the next section will briefly discuss practice-theoretical accounts.

PTs working as a bridge to everyday life

Making and DIY activities can be viewed as practical action and described with the help of practice theories (Watson and Shove, 2008). Practice Theories (PTs) are neither individualist nor holistic, but look at social life through the lens of practices. However, in PT, the term *practice* has two different meanings, namely practice as a coordinated entity and practice as performance. While the first one refers to "sayings and doings," the latter describes how only regular performance leads to its sustainment. This regularity means that practices change slowly due to inertia, but it also means that they are subject to innovations and are thus constantly evolving (Schatzki, 1996). Learning different ways of doing a practice or being exposed to a novel practice in a DIY community over time might then help to alter previous routines of relating to other humans and non-humans.

In the seminal framework provided by Shove and Pantzar, practices consist of three elements, namely stuff, skills, and images (Shove *et al.*, 2012). *Stuff* or *materials* refer to tangible elements involved in the enactment of a practice. These do not only consist of objects or tools but also include the human body. *Skills* or *competences* stand for the routinized knowledge that is necessary in order to partake in a practice. The element *images* (or *meanings*) describe how people participate in a practice according to the symbolic meanings attached to it (Shove *et al.*, 2012). This framework points to materiality and skillfulness, and therefore practice-theoretical accounts are relevant for both studies on design and DIY.

As a particular strand of PTs, the concept of sustainable practices addresses efforts to deliberately change practices or substitute them with new ones (Strengers and Maller, 2015). Regarding the initiation of sustainable practices, social learning can help to render abstract goals more attainable by aligning them with their respective contexts. Such learning might happen through the availability of a new object, opening up a discussion on a specific norm, or by showing new ways of performing everyday practices (Sahakian and Wilhite, 2014). In the context of DIY initiatives, these can be seen in making tools available to borrow, introducing concepts such as commons, or learning how to repair or swap things instead of throwing them away or paying for external services. While sustainability efforts in PT are often policy driven, the structures of consumption need to change as well if people are to change their ways of doing things. The spaces and practices of consumption, as in the case of the DIY initiatives at hand, are one possibility for supporting new ways of doing things in everyday life. Therefore, the final question this paper addresses is: How do these spaces support and cultivate alternative practices of doing and being with others?

Methods

For this study, three different cases from Germany and Finland were chosen and semi-structured interviews, each lasting approximately one hour, were conducted with the organizers of the respective initiatives. The interviews inquired about the potential motivation and learnings of participants, the process of the various DIY practices in the space and the process of running the space as such. To ensure comparable data, 20 questions were asked from each organizer. Besides this, I have participated in activities myself in each of the three cases, generating both field notes and headnotes about the spaces and their processes. In the following, I will separately introduce the cases Dietenheim zieht an, located close to Ulm (which will be referred to as Sewing Cafe Dietenheim in the following), Temporary in Helsinki, and finally, Trial & Error in Berlin. Each case description will start with a short summary based on the interviews with the organizers and the information given on the website. Subsequently, I will present the findings from each case, which are based on the interviews with the organizers and my own observations during participation.

The data aims at better understanding (1) what kind of collective resources are designed and emerge in DIY, (2) how the initiatives and key collective resources are repro-

duced over time, and (3) how they support and cultivate alternative practices and relations among participants.

Cases

Sewing Cafe Dietenheim

According to their web page, this sewing cafe (<http://dietenheim-zieht-an.de/>) in a small village is a living lab research project by the University of Ulm and the University of Applied Arts Reutlingen, initiated for research on textile industries. The aim is to revitalize the former textile village while emphasizing both the participation of citizens and more sustainable forms of production and consumption. Having operated since July 2016, the organizers are now working on handing the sewing cafe over to local volunteers. The following information was gathered through the interviews and my own participation. As part of the research process of the living lab, the workshops on making and repairing clothes have been organized on a bimonthly basis. These workshops center around a changing topic, such as bags, and usually comprise two different models. In order to ensure the best learning conditions there are manuals as well as demonstration objects that allow participants to see how it could look like once it is made. In the space an increasing variety of textiles and yarns are provided, as well as a range of tables with sewing machines. The location is a space on the street level with invitingly large windows towards the street and close to the center of the village. Participation is free, but usually small voluntary donations are given.

In accordance with the order of my three main questions, I will begin by examining which collective resources emerge in this DIY initiative, before looking at the reproduction of the initiative itself and how alternative practices are enabled.

The necessary resources for this community were sewing machines, fabrics, threads, manuals, demonstration pieces, and practical know-how, as well as the space of a previously empty street-level dwelling. Many of the textiles used in the sewing cafe were provided for free by both local people and businesses. Likewise, the sewing machines were provided by locals and, whenever necessary, repaired by a thrifty old man from the village, despite being in his nineties already. The organizer further pointed out that for many people it was not necessarily a specific resource that encouraged them to participate, but rather the fact that there was a local "all-inclusive package – the materials, the machine, and the guidance." While the organizer stated: "We hand over a lot of decision power and design competence to the people." She also had a strong interest in providing sewing patterns that help to make the clothes look professional instead of resembling the cliché of upcycling trash.

Apart from the guidance, the rest of the organizer's work is likely to remain unseen. Clearly there is a lot of hidden work and personal dedication going into organizing the workshops. Advertising in the newspaper and on Facebook needs to be done in advance. Being organized in a small village and having largely young adults and seniors as an audience, advertising in the local newspaper was a way to

adapt to the routines of the users. Additionally, products or projects of the session need to be chosen with respect to the available material, and the limited amount of time and energy of the participants, as well as the participants' different experience levels. The manuals, the demonstration object, the whole set-up of the clothing as a kit of small pieces, and the freedom to choose something completely different and personal all cater to the needs of the participants.

The symbolic meanings attached to the practice mostly seemed to have been that it is good to (re-)learn how to do something yourself, potentially also in relation to the region's disposition to reuse everything if possible. For many it also became about partaking in a pleasurable activity, thus changing the meaning attached to the practice. Within the little village and its close surroundings the sewing cafe has quickly developed to be the best (possibly also the only) social meeting point where something interesting and fun happens. In Sewing Cafe Dietsheim, as is usual in a community, the participants started to help each other out during the sewing process in small groups of two or three people if they were not already being guided by the organizers of the initiative. Finally, the organizer emphasized how, despite an initial indifference towards the term *sustainability*, gradually questions (and accordingly new knowledge) were created through the confrontation with the materials, their origin, and time and energy input needed for the practice of mending and sewing.

Temporary

Temporary (<https://temporary.fi/>) was a one-year hybrid project between a culture lab and co-working space in Helsinki, funded through cultural grants given to the two organizers and free for anyone to attend. The 100 square meter space (consisting of two rooms and a kitchen corner) was located in a backyard building in the former working-class district of Kallio. Whenever you entered the space with your Temporary ID card to participate in an event, to work, or simply to be there, you would receive a unit of the internal currency (a token). Everyone could suggest an experiment or event but would need enough tokens himself or herself, or have other backers, in order to "fund" his or her idea. This was done in order to ensure that there is actual demand for the respective event and to avoid the "no show" problem of our contemporary Facebook event culture. Furthermore, it was seen as a means to hand over ownership to everyone who came. As with all experiments, theory and practice differ, so the initial two organizers have followed their plan of organizing a temporary space and ended the one-year trial in September 2017. Taking some time to reflect on the learnings together with everyone who had been involved, the space opened again as Kuusi Palaa (<https://kuusipalaa.fi/>) in March 2018. Now formed as a cooperative, the hope is to overcome the need for external funding.

Which resources emerged during the operation of Temporary? The main resource in this case seems to have been the space itself. Since almost all the members were foreigners living in Helsinki, it could be argued that for them it was crucial to have an experimental space, while the locals had a better network and maybe a different un-

derstanding due to culture being provided top-down in Finland. Apart from the space, the website, the proposal system, and community outreach were further critical resources. Furthermore, some events provided both tools as well as the knowledge of "amateur experts" as resources for the community. In a specific event called Trashlab people could learn from the organizer and from other participants how to fix objects like headphones, vacuum cleaners, or ceramics.

To see how these resources were kept available, we should look at what was called "open time," which meant that as long as a trusted member opened the space with the help of the membership card, it was open for everyone else to visit. By swiping a membership card, it would automatically announce that the space was open on the website. As one of the organizers put it: "So it became, in theory, open 24 hours a day, staffed by 65 people. And it worked really well, I have to say". This was a way to adapt to the needs of users, while also being able to keep some rules regarding the governance or control of the space. However, decentralizing was not always as easy. According to the organizer, they kept telling people to run the space the way they wanted. As much as they tried to deny authority, everybody regarded the two initiators as the bosses due to them paying the rent and having designed the initial system. According to the organizers the system is a "Biathlon toolkit; a set of different elements which can be modularized. You know we have this proposal system, we have this digital currency, we have ID cards, we have all these things that work to make Temporary and we call that sort of suite of tools Biathlon". As the two organizers point out, the idea behind this toolkit was similar to GitHub, namely to enable people in other cities to replicate or further change both an experimental, collective space and its activities, such as Trashlab.

Apart from experiencing new ways of governing common resources, as well as learning skills of making and repairing, the organizers pointed out that there is an underlying disposition to be (re-)gained. As part of the participation, a certain curiosity of how things work and how to look into the black box seemed to have appeared among some participants. Furthermore, it was pointed out that learning simply skills of facilitation or organizing events were enabled, as the space proved to have a low entry barrier for people who wanted to organize something but did not quite know where to do so or could not afford to pay for a space elsewhere. As the space was a hybrid of a co-working space and culture experiment space, the meanings of participation seem to have varied. For some it was to work on one's project, for others it was to learn about something, and for others again, it was just to have a space to go and chat with other people.

Trial & Error

Trial & Error (<https://www.trial-error.org/>) is a Berlin-based culture lab that wants to enable various DIY initiatives by providing a space for them. After several location changes since its establishment at the start of the year 2010, it is now located in the southeast district of Neukölln. The space of about 100 square meters consists of a large room with a window facade towards the street, as well as a

smaller office room. Additionally, there is a wood workshop in the basement below, as well as a community garden close by. Regular initiatives include a language lab, nature lab, and garden lab, as well as food sharing, sound sharing, a swap shop, and a sewing cafe. Usually, there are between one to three events per day happening. It is also possible to book workshops outside of the space, clients usually being neighborhood centers, schools, or companies. Beyond that, various collaborations with existing networks in the city have been forged, such as with the Berlin cargo bike network. This latter collaboration resulted in the free provision of a cargo bike, which can be booked online and borrowed from the space.

The main resources include again the space(s), the website, and the booking system, which is used by a variety of initiatives such as a local choir. Other resources include the tools, guidance, and therefore the time of experts related to wood working, metal working, repairing, sewing, gardening, making cosmetics, and working with all possible sorts of "trash". Similar to the previous cases, the organizers and the various practices seem to provide some sort of skill set in the realm of imagination—a general attitude of curiosity.

In order to keep these resources available, the space is shared with many local initiatives and supported through a lot of volunteer work. We also see a similar, yet very different, 24-hour availability of resources to that of Temporary. The initiative has a free-to-take box outside, facing the street, which at times needs to be filled up again after five minutes according to the organizer. This comment also relates to the connection with the neighborhood and the multiplicity of purposes of the initiative. Over the years and due to changing rental contracts, Trial & Error has had to adapt to different use cases according to the location, organizers, and participants. While initially there were some idea to focus more on selling DIY products, recently it seems to have developed more into a neighborhood center. This sounded great to all of the organizers at the beginning, but they were now confronted with new needs of the people around, such as homeless people looking for shelter, and tensions arising between different ethnicities. Also the organizers have, over time, formed very different ideas of what the space is or should be: "we sat around the table and we realized that, each of us actually thinks of this place as something completely else to the others. And it still exists. I think it's kind of a wonder". These ideas, together with the changing context, its opportunities, and the interests of participants, need to constantly be realigned.

Similar to the previous initiatives, the meanings attributed to the practices differ and might change here as well. For some the clothes swap is a financial necessity, for others learning something together with people is a nice pastime. Yet others come to the activities in order to have a chance to partake in some form of social life. The organizer also emphasized how for some people the initiative seemed to be an anchor or hopeful sign and that it makes sense to engage in a practice and that it is "working". Similarly, there was a participant who seemed to have had personal experiences that undermined her abilities to interact with and trust others. Initially very shy, she gradually became more involved and is now taking responsibility

for the Swap Shop twice a week. However, in other cases the blurred boundaries between hobby, and voluntary and paid work also created friction regularly when participants did not want to pay the small workshop fee, because they regarded the organizer's input as hobby practice and not as professional work.

A final point to highlight in terms of alternative practices was the initiative's mission to show how to value the things around you again through the "space and freedom in which to be creative and kind of reestablish your relationship with the material". To provide an example, they urged people to hang and display their clothes in the swap shop instead of just dropping them in a bag, or to even add a label with their name on it in order to create a different relation to the material. In another event called Relaxing December, the idea was to just be together and make things for Christmas with personal care instead of running around the shops buying stuff.

Discussion

The aim of this paper was to explore (1) what kind of collective resources are designed and emerge in DIY, (2) how the initiatives and key collective resources are reproduced over time, and (3) how they support and cultivate alternative practices and relations among participants.

First of all, I want to discuss the collective resources, such as the commons and skills that were created. Common to all three cases was the provision of a space, a website, and a set of physical tools, as well as "amateur expert" knowledge. In the case of making and repairing objects (but also organizing workshops and making decisions, which happened in all cases), we might count this as second-category commons, that is, knowledge commons (Marttila and Botero, 2016). After all, these are skills which at some stage were more broadly distributed in our societies and should be accessible to all. In this regard, the organizers of Temporary highlighted their space as a place for people to start experimenting and organizing things without any pressure regarding money and success, similar to studies highlighting the low-barrier nature of DIY (Kuznetsov and Paulos, 2010). If we count the infrastructuring efforts to provide this space as design work, then design could indeed help to locate commons or make them more accessible.

The availability of simply a free-of-charge space in which to come and be, learn and interact, might itself be seen as part of activist commons, which focus more on new means of provisioning resources than on the shared resource itself (Marttila and Botero, 2016). This holds especially true when taking into account the relatively decentralized process of governing the space in Temporary and to some extent it is also the case in Trial & Error and Sewing Cafe Dietsenheim. The spaces—while not being free from capital, as in Raboud's definition of *autonomous struggles* (2015)—are arguably the central condition required for these DIY practices to unfold. In the cases at hand, the space was either provided by the local authorities for temporary use (Sewing Cafe Dietsenheim), or the rent was paid through cultural funding and later by the members of the initiative (Temporary and its successor) or through

a mix of cultural funding, workshop fees, and collaboration with other initiatives (Trail & Error). As a result, their existence is highly uncertain, similar to alternative design practices working with commoning (Elzenbaumer, 2013). In exchange, all cases provide niches for relating differently to the self and others and resemble Elzenbaumer's (2013) call for designing material and social support structures. As one of the organizers from Temporary put it: "You are going to be precarious anyway, but would you not rather be precarious in a system of your own design?"

This points to the question of how the initiatives create conditions to remake the resources and themselves (Escobar, 2017). In the cases of Sewing Cafe Dietsheim and Temporary we should consider how the organizers are trying to enable their longer-term future. This happened either by handing over responsibilities to locals (in Sewing Cafe Dietsheim) or by creating a malleable infrastructure for the participants, like the Biathlon system in Temporary. This was created to enable the democratic participation of everyone and explicitly to open it up for others to develop further (Ehn, 2008; LeDantec and Disalvo, 2013). However, it appeared that providing a system and space to make use of was not enough in the case of Temporary, presumably because the ownership was not seen as equally distributed. It will be interesting to follow up on the renewed, co-operative model and see whether having financial stakes, or at least more responsibility, will increase commitment.

In terms of ownership, at Temporary, the subsystem of "open time" was designed in order to make the space available to everyone, almost all of the time, again catering to their needs. In particular this example resembles a process of the constant alignment of the various actors (Björgvinsson *et al.*, 2012). Making use of the ID cards and the website to provide this simple distribution of the responsibility for the space relates to the infrastructuring concept of an "installed base" (Star and Bowker, 2002). In much the same regard, the purpose of Trial & Error needed to flexibly adapt according to the changing locations, the surrounding needs, competences, and materials. It needed to build upon these in order to continue existing. All the organizers described the constant work that needed to be done in order to keep the initiative running. Especially the continuous personal dedication of a person to hold things together was mentioned in several instances across the cases. In the case of Trashlab at Temporary, some had shown an interest to take over, but nobody eventually did. Here, we can see a connection to the debate on how infrastructures only become visible either when breaking down or upon innovation (Pipek and Wulf, 2009). The work done by the organizer(s) can be taken for granted or not noticed until it is needed. With regard to the appropriation of infrastructuring within PD for communities, I would like to speculate that DIY, or rather DIT (Meyer, 2017), as such can be seen as infrastructuring, as the organizers try to work with an installed base of what the participants want and which skills and materials are available.

This is a crucial point. Certainly, a case like Trial & Error has the means to steer its development through, for example, regular meetings where the different ideas of the initiative need to be aligned or through simple thriftiness in finding resources. However, due to the constant financial

pressure and uncertainty, we cannot witness autonomy as described by Raboud (2015) or Escobar (2017). In Temporary the means of self-organization seem to be more advanced and, with regard to the possibility of replication, somehow future-proof. However, even when formed as a co-operative, where the members pay a relatively small membership fee to collectively pay the rent for the next four months, nobody knows whether it will still exist after that time. The same applies to Sewing Cafe Dietsheim, although arrangements with local authorities and residents for a more permanent use sound promising. Here, we can see more dedication and a more close-knit community, potentially due to the rural context and missing alternatives. The above-mentioned means of supporting the long-term existence of the initiative are crucial for developing new practices of being with others into routines. While, from a practice-theoretical point of view, such routinized practices are in themselves enabling the existence of the initiatives, the comments above point out how the long-term future of the community is not guaranteed, despite the DIY practices being useful to the people.

This brings me to the final point of the discussion, that is to recount which practices of relating to oneself and others have been enabled by the DIY initiatives. Throughout all the cases it was pointed out how the meanings attached to the practices are variegated (Atkinson, 2006) and, in some instances, it was reported how they had changed. To give an example, within a food fermentation workshop, such as those that have happened in Temporary or Trial & Error, the skills of cutting or mashing and the sterilization of glass jars, as well as the materials (food, glass jars, bacteria, and practitioner), are the same as back in the day. However, the reasoning for the activity has maybe changed from being based on necessity to being based on self-development, collective work, or an invigorated interest in our surroundings.

The first relates to what has been described as the fulfilling aspects of self-development (Warde, 2005) or generally relating to oneself. The second—with regard to the supportive relationship among the participants in all cases, the alternative means of organizing the space in Temporary, and the frictions of different understandings of the initiative as hobby or work in Trial & Error—makes the case for different ways of being with others. The third, finally, emphasizes that the practices at hand not only enabled a different relationship with oneself and with other humans, but also enabled a renewed relationship with the non-human material around us. As reported in all the cases, a general curiosity in how things work arose due to the confrontations through the efforts and complications related to the making and repairing of our everyday products, which we all too often take for granted. These are observations I also made during the MAKE SMTHNG Week mentioned at the beginning of this article. By providing an adaptable workshop instruction and visual language, local and self-organized material and social support was enabled. Most likely though only for the duration of that week.

Conclusion

In this article, I have tried to shed light on the workings of contemporary, collective DIY initiatives, as well as on the

role of design and autonomy in them, by using both infra-structuring and PTs as lenses of analysis.

First, it can be stated that all the initiatives provide the collective with crucial resource pools. They include physical tools and equipment, but also more intangible resources like know-how. The latter can be described as knowledge commons in cases where traditional or new knowledge about production and repair processes are made available to people (possibly again). With respect to the most important resource, namely the “free” space, as a practice-enabling condition, we can also talk about activist commons. This highlights the means of governing and provisioning of the space, rather than the resource itself.

Therefore, second, the notion of infrastructuring can help to uncover how design supports the making and repairing of these initiatives by creating means of steering their processes, as seen especially in the case of Temporary. For all three initiatives it is necessary to cater to different levels of skillfulness, as well as to available materials and time. Similarly, the necessity for constant alignment with a possibly changing context and the handing over of responsibilities to the actors in order to keep the initiative running become clear. While their existence is still precarious due to the uncertainty of the spatial condition, this constant work can certainly be seen as a design contribution to these initiatives. The process of coming up with both suitable activities as well as systems to support these activities, while facing a shortage of financial resources and possibly time resources, actually resembles the thriftiness central to DIY practices themselves. In both cases (creating and adapting the space for making artifacts and planning of how to make the artifacts) design has helped to enable people pursuing different senses of the self as well as of the collective.

Third, this point underlines the main change in DIY practices within dedicated initiatives today. While the skills and materials remain the same, in most cases the meaning of the practice has changed from being a necessity towards being about self-development, community-based pleasure, or reconnecting with the material world around us. The practices are politicized through emphasizing the material and time-intensive process of making, and in some cases, also notions such as the commons, especially with regard to the provision and governance of the space. Therefore the notion of places for making and repairing should be extended to include not only the repairing of an object but also making and repairing our relations to the natural world, other humans, and ourselves.

Fourth and finally, while these clearly emphasize DIY initiatives' potential for autonomy, it remains difficult to assess the broader impact of them in people's everyday life. Longer-term observations regarding if and how people stay committed in the community and build routines of relational ways of being with others would be necessary in order to study this. So far, studies on DIY initiatives or cultural labs often fail to account for the difficulties of maintaining the initiatives and the fact that commitment to flat, bottom-up structures will create tensions regarding responsibilities and ownership. One direction for further research is to see how designed artifacts and processes relate to members committing time, money, sweat, or what

they deem equivalent. Equally important would be to better understand how people become members in the first place. More specifically, the apparent tension between how closed an initiative has to be for it to act as a community, sharing certain values and ideals, versus how open it can be in order to act as a truly democratic learning platform, should be explored further.

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