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Sharing Space: Urban Sharing, Sharing a Living Space, and Shared Social Spaces

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Abstract

Although sharing city is by definition a "place-based" approach to understand sharing activities, and despite the fact that spatial proximity and configuration can affect the formation of sharing practices, neither the impacts of sharing activities on space nor the different spatial attributes, which in turn condition sharing activities and behaviors, have been adequately explicated. In this article, the sociospatial dimensions of sharing space are encapsulated through the following three vectors on different spatial scales—namely, urban sharing, sharing a living space, and shared social spaces—and described through the case examples of the dockless bikeshare program, sharing a domestic space, and the coworking space and hackerspace, respectively. These vectors are then framed as the contours of a general theory of sharing spaces.

Keywords

sharing cities, sharing economy, dockless bicycles, coworking space, hackerspace

Introduction: The Missing Spatial Dimension of Sharing in the City

The sharing city (Cohen & Munoz, 2016; Fedorenko, 2017; McLaren & Agyeman, 2015; Shareable, 2018; Sinning, 2017) is the most recent vision of the city after a long line that includes the resilient city (Vale & Campanella, 2005), the healthy city (Corburn, 2009), and the just city (Fainstein, 2010). A high population density and the ubiquity of information and communication technologies make cities conducive grounds for sharing activities (Cohen & Munoz, 2016). In tandem, sharing is also catching on as the modus operandi for many urban practices amid a relentless process of privatization and enclosure in the neoliberal city (Hodkinson, 2012). Today, popular categories of sharing in cities mainly include mobility, food, housing, work, finance, governance, technology, and waste (Shareable, 2018; Sinning, 2017). While the concept of the sharing city originally made its debut through the so-called sharing economy (see McLaren & Agyeman, 2015), more recent sharing practices have, however, evolved beyond the underpinnings of market exchange implied by the sharing economy. For instance, in Sharing City Seoul, sharing practices now include opening up municipal buildings for public use outside working hours, making available more than 1,000 data sets for public use, and creating tool lending

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libraries in different neighborhoods throughout the city (Cohen & Munoz, 2016). Or consider the case of Kitchen Share in Portland, Oregon, where kitchen appliances are shared with the goals of creating a community of like-minded home cooks and learning new cooking skills from neighbors (Weymes, 2018).

Although the sharing city is by definition a "place-based" approach for understanding sharing activities (Cohen & Munoz, 2016), and despite the fact that spatial proximity and spatial configuration are among the key conditions that can generate sharing practices (Widlok, 2017), neither the impacts of sharing activities on space nor the different cultures presumed in sharing a space have been adequately explicated even when space is, to borrow Benkler's (2004) phrase, a "shareable good." And even when space is presumed in all these sharing practices in the city, the effects of physical space—in various contexts, scales, and types—on sharing have yet to be systematically examined or charted. Furthermore, many emerging spatial typologies in the city have evolved directly from sharing social spaces, ranging, for instance, from the hackerspace and the makerspace (Davies, 2017), to the coworking space (Merkel, 2017). Yet these novel typologies can neither be further explained nor advanced in the absence of a general theory of sharing spaces. In projecting the possibility of this general theory of sharing spaces, not only is it more likely to discover why, and in particular, how certain sharing practices occur in physical space (see Warf & Arias, 2009), but existing sharing practices can also be distinguished based on how, and where, sharing activities are differentially purposed and situated within the city. If sharing and shareability have so far been narrowly conceived and perceived as economic transactions within the sharing economy (McLaren & Agyeman, 2015), it may be because the spatial dimension of sharing has been generally sidelined in the literature. Here, we argue that the spatial dimension of sharing is more important than is generally assumed. To consider this aspect at the outset may fundamentally extend, or even transform, present perspectives on conceptualizing sharing as a social and economic practice.

The Three Vectors of Sharing Space: Urban Sharing, Sharing a Living Space, and Shared Social Spaces

In underlining this knowledge gap between space and sharing, this article attempts to answer the following two primary questions: in what ways can space and sharing be theorized and how does the inclusion of the spatial dimension improve the present understanding of sharing behaviors and practices? If sharing is fundamentally defined as enabling others to access what is valued (Widlok, 2017), then sharing space in the city has to at least entail the following three primary scales of spatial access: the sharing of urban public spaces, the sharing of a living space, and the sharing of a social space. In this way, we propose three corresponding vectors that can better reflect these different scales: urban sharing, sharing a living space, and shared social spaces. Together, they begin to outline the theoretical contours of sharing spaces. Here, each vector will be briefly summarized in turn.

First, "urban sharing" describes sharing practices that are widely distributed (or dispersed) in operation and which also occur at the scale of a city. Moreover, urban sharing tends to be integral to the practice of everyday urban life. In contextualizing sharing as a spatial practice in the city, this vector then suggests that sharing practices are likely to affect urban spaces, and conversely, the urban topography is also likely to constrain these sharing practices. Novel issues and social challenges as side effects of sharing can be expected as well. In this article, we describe the salient case of the dockless bikeshare program (henceforth, BSP) as an instance of how sharing has become an urban spatial practice promising many new opportunities but also saddled with many intractable problems. The dockless BSP is premised on sharing, and it is also an urban mobility solution that has been adopted by many cities today. One major appeal of the dockless BSP is the freedom and convenience to leave, or park, the bicycles anywhere. But this same

benefit also comes at the cost of burdening and inconveniencing others—residents, pedestrians, and business owners—who share the same urban spaces where bicycles are often irresponsibly parked, or dumped, in the most bizarre and antisocial manner. Moreover, specific urban places, as well as the physical topographies of cities, also affect the effectiveness of bicycle sharing (Mateo-Babiano, Bean, Corcoran, & Pojani, 2016).

Second, evidence from the anthropological science suggests that spatial proximity, and in particular, the material setup of houses, can spur sharing behaviors and practices (Widlok, 2017). Across cultures, spatial permeability appears to affect social permeability, especially through the sharing of living spaces (Widlok, 2017). In these ways, sharing a living space tends to occur on a domestic scale that entails not only agreeing to and then committing to share spaces, but also because of the social or communal bonds that may be engendered by sharing behaviors, sharing is likely to transform the spatial configurations of these spaces. Furthermore, Widlok (2017) suggests that knowledge of how to share, and what to share, are usually picked up from those whom people share with and the situations that prompt sharing. But is the culture of sharing a space always situational and tacit? Is it possible to render the etiquettes or other specifications of sharing a living space more explicit, and if so, in what ways? In this article, we contrast the sharing of living spaces against two other ideal types of sharing with the goal of articulating a clearer and more specific definition of sharing spaces.

Finally, there is the emerging trend of sharing dedicated social spaces in many cities in the world today. Importantly, this form of sharing tends to occur at the scale of a community and is usually practiced in the discrete form of an organization or a community. Most notable among these "shared spaces" are the coworking space (Merkel, 2017), and the hackerspace (Davies, 2017, 2018; Williams & Hall, 2015). In contrast to the previous category, which is about sharing a (private) living space, these shared spaces instead facilitate the sharing of social lives and professional knowledge. The sine qua non of these shared spaces is a form of social sharing, which can spur commitment, collaboration, and cooperation within this discrete community. Not only are these shared spaces specifically designed to facilitate formal and informal sharing, but in the case of the hackerspace, sharing practices often shape the space itself (Davies, 2017). Furthermore, research on these shared spaces suggests that they could enable mutual learning (Merkel, 2017), collaboration, and socialization (Davies, 2017). Especially for the hackerspace, it is also a formative community space for many new social relations outside the home and the traditional workplace (see Davies, 2018). In this way, shared social spaces as the concretization of sharing behaviors then point beyond themselves to form the beginning of a new horizon of "transformed social relationship, cultural dynamics and normative framework" (Sützl, Stalder, Maier, & Hug, 2012, p. 8).

While all three vectors of sharing are spatially oriented, each is, however, premised on a different objective within the general theory of sharing spaces. If urban sharing demonstrates how sharing activities can affect urban spaces and, conversely, how urban spaces can come to condition further possibilities for sharing, then shared social spaces aim to describe how new and specific sociospatial types could be explained and sustained because of sharing practices. In contradistinction, sharing a living space is more conceptual. In spite of the prevalent practice of sharing living spaces with family members, close friends, and, also not uncommonly today, strangers, little systematic knowledge exists on how to better describe the sharing of living spaces. To address this, sharing a living space aims to better define and explain how the sharing of living spaces is distinguished from the more common forms of sharing material and nonmaterial goods, respectively. Separately, each vector then also presents a different scale and also a context, of sharing spaces in the city. But together as the summative framework of sharing space, they offer a modest contribution to a general theory of sharing spaces that is scarcely represented in spatial studies and that is furthermore underdeveloped in the context of a fast-growing discourse revolving around the sharing economy.

A Rising Skepticism on the Sharing Economy and the Contributions of the "Sharing-Space" Approach

Today, the sharing economy is ascendant. By one estimate, the five key sharing sectors—travel, car sharing, finance, staffing, and music and video streaming—could potentially increase from approximately $15 billion in global revenues to around $335 billion by 2025 (PricewaterhouseCoopers, 2015). In parallel, the number of articles indexed by the Web of Science citing "sharing economy" have soared from 451 in 2008 to 1,308 in 2016—marking nearly a 200% increase in slightly more than 8 years along an upward trend. Taken together, the sharing economy—which is an umbrella concept encompassing everything from collaborative consumption (Botsman & Roger, 2010) to peer-to-peer economy (Schor, 2014), to platform capitalism (Olma, 2016), to nonprofit 21-century commons (Bradley & Pargman, 2017), and more recently revised as "platform economy" (Schor & Attwood-Charles, 2017)—is anticipated to become even more economically significant, socially disruptive, and culturally relevant in the coming years.

Even so, this soaring trend has been gradually dampened by an emerging skepticism on the social benefits and promises of the sharing economy (see Schor & Attwood-Charles, 2017). Kulp and Kool (2015) have described a sharing economy that has entered into a "headache" phase. For instance, are corporations such as Airbnb or Uber service providers, where due obligations to labor rights, safety standards, and social responsibility apply, or are they merely digital platforms free from all these obligations? More recently, Schor and Attwood-Charles (2017) have revised the definition of the sharing economy to a platform economy, where instead of producing the various social benefits of sharing, this platform economy has merely been proliferating substandard work, which also has exacerbated the risk of work-related hazards and inequality. In highlighting these risks, Schor and Attwood-Charles hint at a wholesale reappraisal of the positive connotations associated with the sharing economy. Because of this development, the distinction between for-profit sharing platforms—which are better categorized under the platform economy—and nonprofit sharing cooperatives—which approximate altruistic or win-win sharing—has further sharpened.

While sharpening this distinction is one possible way to advance further research, our studies, however, point to an ambiguous and also underexplored area between for-profit platforms and nonprofit sharing cooperatives that is ripe for further exploration. Predicated on the variable of shared physical space, this underexplored area can be described in the following two ways. First, there are for-profit platforms that involve the *direct sharing* of a specific space, for example, the coworking space or certain hackerspaces. But because sharing a space often entails physical proximity, the proximity effect, and also the mere exposure effect (Goodfriend, 2009), increase the chances of interaction and attraction. In turn, repeated exchanges between people, especially in the case of the coworking space and the hackerspace, may precipitate in sharing that is strictly neither for-profit nor market driven. The prototypical coworking space, for example, extracts rent from workers; but it also rewards workers with serendipitous encounters and shared ideas that are naturally engendered by the physical proximity of a large group of diverse workers (Olma, 2016). In this way, the direct sharing of a specific space offers both colocation and copresence (see Merkel, 2017), which are necessary but not sufficient criterion for collaboration—only because collaboration also requires the formation of a "limited fraternity with others based on sharing an impersonal task" (Sennett, 2018, p. 260). Even so, these relational dividends that follow from the direct sharing of a specific space are sufficient to shift the coworking space beyond the frame of a for-profit platform into the margins of nonprofit sharing.

Second, there are sharing activities that involve the *indirect sharing* of spaces, where sharing space may appear either tangential or unapparent but is nonetheless, operationally, critical or necessary for effective sharing. Consider the example of the dockless BSP operating in many

cities today as a case in point. The dockless BSP usually operates on a for-profit sharing platform, but its success and effectiveness critically depend on sharing public spaces. For instance, idle bicycles tend to occupy the sidewalk, or any other urban spaces deemed convenient for parking, which are also shared by other pedestrians. These pedestrians may be irked by the presence of these dockless bicycles or may just as likely capitalize on their convenient availability. In other words, the success and effectiveness of the dockless BSP depend not only on how these bicycles are shared among riders, but, instead and critically, also on the extent to which these bicycles could be found when riders need them. This in turn presupposes that these bicycles must be able to flexibly and freely occupy—or share—spaces with people (and things) in as many places in the city as possible. In considering the indirect sharing of spaces this way, certain forms of sharing then inadvertently constitute the lived spaces of the city, which "obey no rules of consistency or cohesiveness" (Stanek, 2011, p. 131) but affect everyday life in the city.

Beyond this underexplored area of sharing, our approach also highlights both the negative and the positive externalities—or the undesirable and desirable side effects, respectively—of sharing spaces. Many of these externalities, especially as they occur in the city, are spatial in nature. Our approach, which highlights the spatial dimension of sharing, is therefore better able to capture these externalities insofar as they are also spatially manifested. For negative externalities, the example of the public nuisance caused by the dockless BSP, which will be discussed in greater details later, is salient. But insofar as positive externalities are concerned, our approach is built on a line of inquiry considering how spatial configuration can affect the formation of social capital (see Halpern, 2005). For example—and drawing from an earlier study by Baum and Valins (1977) on student housing—Halpern (2005) argues that a shared physical environment can affect the formation of social capital by constraining both the probability and the controllability of informal social interaction. Specifically, it is the range and quality of options for interaction, which are defined through the spatial design of this physical environment, that are important for developing positive relationships between people sharing this same space. As far as Halpern's work is concerned, positive and cooperative behaviors are not independent from the specific spatial configuration of a shared environment. But how does spatial configuration, beyond the studies that Halpern relies on, increase social capital? Also, how does higher social capital then lead to more frequent and beneficent forms of sharing? The subsequent discussion on the hackerspace and the coworking space as prototypical models of shared spaces aims to address these questions.

Urban Sharing: The Case of the Dockless Bikeshare Program

The most recent dockless BSP that has emerged in many cities today can be deemed as a fourth-generation model for bicycle sharing. The first BSP, called the Witte Fietsen (White Bikes), was launched in Amsterdam in 1965. This was followed by the second-generation BSP in Copenhagen in 1995, and then, subsequently, the third generation, which was characterized by a dedicated docking station where one could retrieve and return the bicycles (Fishman, 2016). Other researchers suggest a similar generational genealogy starting with the Witte Fietsen as the original BSP; however, they have elected to describe the second generation as a coin deposit system, the third generation as an information technology–based system, and the fourth generation as a demand-responsive multimodal system (Mateo-Babiano et al., 2016). Whichever framework is chosen, it is nevertheless clear that the present dockless BSP is unlike any of the previous three generations; the dockless BSP differs from the preceding generations by requiring riders to first download a smartphone app, which is then used to scan a code on the bicycle to unlock it. Because of this technology, this bicycle can be parked anywhere, and it can also be picked up at the same spot by the next rider. This dockless BSP has been framed as an environmentally friendly mode of urban mobility, which can be relied on to help cities attain transportation, health, and emissions goals (Mateo-Babiano et al., 2016).

But because so much attention has been focused on the technological artifact of the bicycle and the social goals of this sharing system, relatively little attention has been directed toward the urban environment where this sharing inadvertently takes place. Ideally, maximal efficiency of sharing can be attained when another rider immediately takes over a bicycle that has just been parked—or a scenario where the bicycle is constantly being shared and in uninterrupted use. But actual efficiency is empirically far lower than this maximal ideal, where bicycles are strewn about waiting for the next rider—often idle for hours if not days and sometimes can cause a public nuisance to others who share the same urban environment. In this way, the operational effectiveness of any dockless BSP has to count on treating the city as one big common "docking area," where one could freely park or retrieve a bicycle—a vital assumption of sharing space that has yet to be given due consideration in this sharing system. In the meantime, numerous complaints and allegations of irresponsible parking, as well as criminal acts of vandalism associated with these bicycles, have risen sharply since the debut of this fourth-generation BSP across the world (Rushe, 2017). In response, regulators are scrambling to address the mounting problems caused by the dockless BSP, while the BSP providers have started to introduce everything from geotagging the bicycles to ensure responsible parking and all the way to banning errant riders who have a history of abusing these bicycles.

However, more robust regulations and technologies—for instance, to get riders to park only in designated areas that are deemed more appropriate or responsible—may risk eliminating the very criterion of optimal efficiency (i.e., also success) for the dockless BSP, which has to assume an unhindered ability to maximize the factors of freedom, flexibility, and convenience for parking or retrieving a bicycle at any time and in any place. Inexorably, any measure used to combat errant or irresponsible bicycle usage behaviors is likely to restrict at least one, if not more, of these factors—all crucial to the efficient and effective operation of any dockless BSP. Truly, while the problem has been singularly framed as the lack of accountable behavior based on the unit of the dockless bicycle, the real issue is in fact a deeper problem of negligent sharing of both dockless bicycles *and* urban (public) spaces. Until the factor of sharing urban space has been taken into account, and until the corresponding civic ethos for parking bicycles within these urban spaces has been cultivated, any measure taken to discourage errant sharing behavior is likely to meet with some success—but not without also the likely cost of a diminished usage frequency of these dockless bicycles. To formulate this differently, the crucial criterion of free, flexible, and convenient parking and retrieval of dockless bicycles is a privilege, and not a right, of sharing urban spaces. However, in mistaking a privilege for a right, the dockless BSP has yet to factor in the cost to space as a shareable good, and moreover, it has yet to internalize the various civic obligations of sharing urban spaces into the overall ethics of this sharing system.

Beyond these considerations, researchers on the dockless BSP have also observed how this sharing practice can affect the city and, conversely, how the urban topography can also affect bicycle sharing. First, and as discussed earlier, the actual practice of dockless bicycle sharing is usually less than optimally efficient. This inefficiency not only leads to the various eyesores and inconveniences of irresponsibly parked bicycles, but for certain cities, this also entails what is known as the imbalance problem (see Pan, Cai, Fang, Tang, & Huang, 2018). For example, in many cities, travel patterns especially during peak hours are similar. This similarity then results in relatively fewer bicycles in the residential areas, which can suppress potential demand, while disproportionately inundating train stations and commercial areas with too many bicycles, paralyzing pedestrian traffic flow and causing major inconveniences (Pan et al., 2018)—if not also posing as a potential source of new hazard for commuters and motorists. Second, if dockless bicycle sharing becomes prevalent, this new form of urban mobility is likely to question present conventions of acceptable range of the catchment area of any major transportation node (see Mateo-Babiano et al., 2016). Widespread dockless bicycle usage is likely to render a far larger catchment area from any major node, and in this way, it is also likely to challenge present land

use conventions in city planning. For instance, a recent Mobike (2017) report shows that in the city of Shenzhen, a majority of Mobike trips cover an area within a radius of almost 10 minutes cycling distance (i.e., around 2,500 meters) from metro stations. As a result, the dockless bicycles have effectively filled a gap currently not covered by the public transit system (Mobike, 2017). Finally, even if the consequential impact of the dockless BSP is not as pronounced, researchers have noted that existing urban land use—for instance, residential density, land use diversity, street design, and urban topography—influences the riders' participation in the BSP and their choice of routes (Mateo-Babiano et al., 2016).

Sharing a Living Space: How Is Sharing Spaces Conceptually Unique?

Despite the prevalent practice of sharing a living space with family members, close friends, and also, not uncommonly, strangers, little systematic knowledge exists on sharing a living space. In line with Widlok's (2017) suggestion, sharing a living space depends on a skill that is acquired through situated learning in practice—where knowledge about sharing is picked up from the people that one shares with and through the situations that prompt sharing. It is possible to infer from Widlok's suggestion that it may be unnecessary to render more explicit the declarative rules and protocols for sharing space, or the "know-that" knowledge of sharing a space. After all, the tacit "know-how" of such sharing, which entails an intelligent disposition for pragmatic or situational accommodations (Ryle, 1984), already exists, and furthermore, this know-how has been transmitted successfully across generations. In this way, know-how has often precluded a need to make the know-that in the sharing of a living space more explicit.

This view of privileging the know-how over the know-that may be applicable in the most usual circumstances. However, Ryle (1984) also suggests that when innovation is demanded it is important to possess some know-that knowledge comprising of first principles and rules. In the context of sharing a living space, know-that knowledge may mean understanding the key principles or rules behind sharing this space. On this, there are at least two novel but contemporary situations that may require clearer know-that knowledge on sharing living spaces. First, there is a rising trend of people living alone but in cooperative-style settings (Klinenberg, 2012), which at least represents a departure from the usual routine of sharing a living space with close kin. While certain private living spaces are not shared in these settings, many other spaces are shared with "strangers" in common—spaces such as the kitchen, the garden, or even the bathroom. In these newer situations of shared living, know-how neither emerges intuitively nor is it easily transmitted among transient strangers. Second, and on a more projective level, Harvey (2014) argues that there is an impending limit to the infinite growth of the city. The compound rate of capital accumulation has created enormous expansions in physical infrastructures, workforces, consumption and production capacities, and urbanization (Harvey, 2014). The city cannot grow indefinitely, and there is a limit to this infinite expansion. At that point (and Harvey [2014] is clear that we may be close to this limit), to accommodate more people within a circumscribed geographical boundary, sharing practices, including the sharing of living spaces with strangers, are likely to become more widespread. This implies that homes that are presumably private properties now might be transformed into new spatial typologies predicated on shared living configurations. Shared—rather than privatized—ownership might become the norm rather than the exception. In light of this projection, drawing out the know-that of sharing a living space—rather than the situated and the tacit lived experience of know-how—then anticipates the future environmental and policy design that will likely build on this knowledge.

What then is the know-that knowledge on the sharing of living spaces? There are at least three key aspects to this knowledge. First, the sharing of living spaces overlaps with, but is categorically distinct from, the typical sharing of tangible, measurable, subtractable (or rivalrous), and

divisible goods. Insofar as the sharing of such goods is concerned, the total value of sharing is fixed as zero-sum sharing (John, 2017): the more one shares, the less one has, and vice versa. While the sharing of living spaces is also predicated on this law of subtractability—that is, space is subtractable and space can be subdivided and the more living space is shared, the less living space remains to be shared—it is nevertheless also true that unlike divisible goods that once shared become exclusive property of another, living spaces that are shared nevertheless remain as a commonly held entity. The fluid dynamics of sharing a common living space, as well as the give-and-take ethos implied by any sustained practice of sharing such a space, then calibrate and revise the law of subtractability at work in what is essentially also a case of zero-sum sharing. In other words, there is a greater margin for nonsubtractable (or nonrivalrous) sharing of spaces when compared with the sharing of other equally subtractable, rivalrous, and divisible goods.

Second, the sharing of living spaces also overlaps with, but is similarly categorically distinct from, the sharing of nonsubtractable, nonexcludable, and indivisible goods. Insofar as the sharing of these goods is concerned, the total value of sharing is never fixed. In other words, this is a form of non-zero-sum sharing, where more frequent sharing may increase the overall value of what is being shared. The sharing of information, knowledge, news, and sentiments are prototypical instances of this type of sharing. Because the sharing of a living space obeys the law of subtractability to a certain extent, it is, therefore, dissimilar to this type of sharing. However, because sharing a living space also entails the sharing of experiences, knowledge, and sentiments—or in any case, "goods" that are nonsubtractable, nonexcludable, and indivisible—it nevertheless overlaps with this type of sharing. Importantly, for any sustained practice of sharing space, good will or beneficence has to be repeatedly demonstrated, or shared, between people in this space. Widlok (2017) has repeatedly emphasized from empirical data that sharing is not a matter of reciprocity, and where sharing does not necessitate any reciprocal returns (i.e., in any sharing system, there are usually net providers and net receivers). Nevertheless, it is also true that beneficent sharing can create a sentiment of gratitude and rectitude (Gouldner, 1960), which is likely to spur a positive cycle of sharing that is overall not dissimilar to sustained reciprocity over a long period of time.

Third, and in positioning sharing a living space between these two better known ideal types of sharing, space is a malleable entity. For this reason, space can prompt new agency—a kind of "spatial agency" (Awan, Schneider, & Till, 2011) that aims to change the existing for the preferred (Simon, 1996) and, furthermore, can catalyze cooperative behaviors to transform living spaces that are better able to accommodate even more ideal living arrangements. In other words, not only is the agency that individuals possess in sharing spaces distinct from the sharing of other material or nonmaterial goods but also that this spatial agency can drastically transform the constitution or the morphology of what is being shared. For instance, a shared living space between two roommates now could be transformed by design into a space that can accommodate three more roommates. To have divided this shared living space into five equal shares might satisfy the demand for fairness but would have directly led to five tragically tiny and unworkable subdivisions that would benefit no one. Instead, amicable and cooperative spatial agency is likely to transform this entire space into a common space appropriate and desirable for five individuals, which then can be interchangeably converted into a common sleeping space in the evening. In sum, spatial agency can prompt spatial design to change the existing for the preferred state.

Shared Social Spaces: The Coworking Space and the Hackerspace

In many cities today, specialized and dedicated shared social spaces have emerged. Most prominent among these shared social spaces are the coworking space and the hackerspace. While the former has come about because of structural changes in the labor markets (Merkel, 2017), where an accelerated accumulation regime has normalized a flexible workforce comprising of independent workers operating under swift production cycles and engaging in short-term projects, the latter has,

however, appeared as a result of the widespread proliferation of digital fabrication technologies and tools (e.g., the 3D printer and the laser cutter) (Davies, 2017). The coworking space, which primarily functions as a shared workspace for different independent workers mostly engaging in desktop work, is, therefore, distinct from the hackerspace, which is associated with a workshop where one spends leisure time to translate conceptual ideas into physical items (see Schmidt, Brinks, & Brinkhoff, 2014). However, both are similar to the extent that they maintain conditions of colocation (i.e., where people share the same space and amenities) and copresence (i.e., where people work in the presence of others)—and they also aim to spur collaboration, solidarity, and a sense of community through these conditions. In other words, both the coworking space and the hackerspace aim to leverage sharing behaviors within these shared social spaces to create the social capital that is necessary, and also desirable, for sustaining these spaces. However, neither their spatial qualities nor their mechanisms of engendering a sense of community are similar. It is therefore important here to delineate how, in spite of these differences, social capital could be created in these shared social spaces. We first describe the coworking space and then the hackerspace.

First, the coworking space is an emerging community-based approach to workplace organization (Merkel, 2017); it brings together a group of heterogeneous workers in the context of sharing spatial facilities and common workplace amenities with the aim of reducing risks and costs to the individual worker, on the one hand (who, for instance, otherwise might have to bear the risk of social isolation and the higher costs of full-office space rental on his or her own), and, on the other hand, with the hope of facilitating the production of creative and innovative ideas based on an ensemble of different workers (Merkel, 2017; Olma, 2016). Furthermore, Merkel (2017) suggests that coworking space depends on two general types of strategies to foster collaboration. The first takes the form of material strategies that focus on the design of shared spaces and how these spaces can facilitate community and encounter. Importantly, this facilitation has been perceived as a vital obligation: Olma (2016) argues that offering a high probability of serendipitous encounters is a way of compensating for the independent workers' lack of organizational and institutional support. The second takes the form of social strategies that are enabled by the material strategies. For instance, Merkel (2017) accounts for how hosts of a coworking space, with a synoptic view of the heterogeneous needs and potentials of these workers, would organize informal events to connect different interests and needs. On this, eating together has been noted as "the most effective socialization mechanism" (Merkel, 2017, p. 579). In anticipating a more coherent fit between disparate interests and expertise among these workers, the hosts of coworking spaces have also began to curate their coworkers based on their professional fit with other coworkers within a specific coworking space (Merkel, 2017). In staking this trend, these emerging models of coworking space then question the extent of just how open, or democratic, sharing is in any curated coworking space.

Importantly, the underlying assumption of any effective coworking space is how physical proximity—colocation and copresence—can trigger mutual learning and innovative processes (Merkel, 2017). Physical proximity refers to the proximity or close physical distance of one person to another (Reis, 2007). Beyond close physical distances, proximity can also refer to functional distance, which refers to the likelihood of a person coming into contact with another person. In shared social spaces characterized by physical proximity, one can expect to see the "proximity effect" at work, which suggests a positive correlation between physical proximity and attraction (Goodfriend, 2009). Such an attraction is likely to lead to friendship (Reis, 2007). This is how the initial physical proximity of a coworking space can engender into the relational proximity of friendship within this shared social space (Merkel, 2017). In turn, because of friendship as a form of bonding capital (Putnam, 2000), sharing can be sustained and further spurred.

In contradistinction, hackerspaces are community-operated physical places where individuals get together to build things (Williams & Hall, 2015). Unlike the relatively more "curated" and increasingly enclosed coworking spaces, hackerspaces aspire to an equality of access to space

and equipment with no predefined limit. Furthermore, dissimilar from the usually for-profit platform of sharing coworking spaces, hackerspaces are usually private social organizations created to provide the valuable resources of a shared space (Williams & Hall, 2015), and other pooled resources comprising of technological tools and components (Davies, 2017), to "hackers" or "makers"—like-minded enthusiasts who otherwise are unlikely to afford these spaces and tools independently. Importantly, hackerspaces are distinguished from the coworking space by their ad hoc organization, where governance, or the running of this shared space, is not really organized at all (Davies, 2017). Discussions, negotiations, and compromises—all active forms of modus vivendi—therefore, undergird social relations in the hackerspace (Davies, 2017).

Sennett (2018) observes that a limited sense of fraternity with others arises when people do something together rather than being together. This act of sharing a task together is the sine qua non of hackerspaces, where collaboration is key and where people share knowledge to help the other out when he or she is stuck on a particularly tricky problem (Davies, 2017). For this reason, the hackerspace may be the shared social space that simultaneously approximates the ideals of colocation, copresence, and collaboration. Importantly, the hackerspace also exemplifies a spatial practice of sharing that cannot be replicated, or even substituted, by a digital community of practice if only because a key part of the pleasure of using the hackspace for many is sharing this physical space with others—and getting to know and working with them (Davies, 2017). In underscoring this cognitive and visceral element of pleasure (or happiness) that is triggered by sharing, the hackerspace then exceeds the coworking space that is still operating within the paradigmatic bounds of engendering collaboration and innovation by physical proximity.

While these are key benefits of the hackerspace as a shared social space, there are also at least two clear tensions for sharing spaces that are elicited by this spatial typology. First, even when a sense of community is central to hacking and making, maintaining this sense of community in practice and ensuring that the participants of this hackerspace are also actively seeking to do this are, however, challenging (Davies, 2017). Because the hackerspace prides itself as an open and democratic sociospatial typology promising equal access to all, equity and liberty are often prioritized ahead of organizational clarity and institutional goals. As a result, people have been observed to exploit the hackerspace for many things except for making and creating, which detract from the original purpose of this shared spaces. These behaviors can also never be openly and institutionally sanctioned because of the ethos of the hackerspace. Inexorably, a lived space—shared among the plural many with their divergent scope of interests and values—which has neither cohesiveness nor consistency, is only to be expected. But this can, however, contradict the relatively singular vision of the hackerspace, which is to make, produce, and create. Second, because the hackerspace tends to operate on the model of common-pool resources (CPRs) (Williams & Hall, 2015), a hackerspace is likely to confront many of the challenges of maintaining a sustainable urban commons. On top of the usual problems of free riding, the hackerspace as a CPR also faces the many threats posed by a market-driven urban practice bent on capitalizing, and enclosing, free commons (see Harvey, 2012). While reports of theft or misuse of equipment are still relatively few (Davies, 2017), it is crucial to note that the systematic study of hackerspaces remains nascent and inconclusive on the possibilities of irresponsible exploitation of its subtractable but nonexcludable CPR.

Conclusion: The Contours of a General Theory of Sharing Spaces for the City

In this article, we have highlighted a need to render more explicit the spatial dimension of sharing practices in the city. The justification for this need is twofold. First, existing discourses on the sharing economy have largely neglected the theoretical possibilities and also the practical stakes that accompany a spatial discourse on sharing. If our arguments on these three different scales of

sharing in the city—urban sharing, sharing a living space, and shared social spaces—are sound, then there exists a vast theoretical territory on space and sharing that remains relatively unexplored. In addition, our nascent exploration undertaken in this article suggests that a spatial discourse on sharing has something for everyone. For the researchers who are working on the sharing economy, the suggestive vectors on the spatial dimension of sharing in this article may present a fresh perspective—or even many new possibilities—on engaging with existing frameworks or ideologies. For other researchers who are actively seeking novel connections within the paradigmatic sharing economy, this article then suggests a new research agenda in a milieu where the city has become a primary site of analysis for many theoretical and empirical research questions concerning sharing activities and practices.

Importantly, these three vectors also suggest that space is neither a monolithic concept for sharing nor does the spatial discourse, in relation to sharing, need to be framed in any singularly determined approach. Instead, space is observed to affect sharing differently at different scales, and conversely, different scalar spaces also condition sharing activities and practices differently. In each of the three vectors in this article, only the most representative relations and impacts have been delineated. In the vector of urban sharing, we describe how sharing as a distributed practice could affect urban spaces, while, at the same time, also becoming constrained by these same spaces. In the vector of sharing a living space, we delineate how sharing a living space could be more systematically defined in contrast to the known ideal types of sharing in the literature and, through this, distinguish the category of sharing spaces from the typical sharing of either material or nonmaterial goods. Finally, in the vector of shared spaces, we identify two empirical spatial types that could be defined and explained by emerging sharing behaviors and compare them based on their common goal of creating high social capital. What has yet to be done is a correlational study between these different scales—especially when sharing at the scale of the shared social spaces also affects sharing as an urban spatial practice. Especially for the coworking space, the spillover effects of workplace sharing on the larger urban environment exist. An example of this is the Downtown Project in Las Vegas (Meisterlin, 2014), where a circumscribed vicinity encompassing of a few urban blocks has been intentionally turned into one enormous urban coworking space. Future work in this area may consider the many intermediate spatial scales and overlapping relations that exist between the three anchor vectors delineated in this article.

The research in this article—especially for the vectors of sharing a living space and shared social spaces, respectively—also suggests that sharing behaviors (or activities) can be the means to, as well as the goal of, strong social relations. Where sharing behaviors are the means to building strong bonding and bridging social capital, they are often reinforced by physical proximity and also by the proximity effect as discussed. While existing research has been reluctant to make any causal connection between sharing and reciprocal behaviors (see Widlok, 2017), the empirical research on the coworking space and especially the hackerspace appears to suggest that even if sharing does not immediately lead to direct reciprocity, it does promote the practice of what McLaren and Agyeman (2015) refer to as *indirect reciprocity* or *karmic altruism*, where the beneficiary of sharing pays forward by helping other members of a wider community, rather than directly repaying or reciprocating the original contributors. On this, Davies's (2017) account is corroborative: A hackerspace is a space where people are expected to be generous with their time, knowledge, and expertise. If someone has a question, then "there was really no question about the fact that you would do your best to help them out" (p. 69). While this may still conform to what Widlok (2017) perceives as the reality of net givers and net receivers in sharing, this generosity, however, does establish in the hackerspace an ethos of help that is freely offered to any member that seeks it. Because sharing has yet to be empirically studied as one of the demonstrable means toward high social capital in the city, our account in this article is at best indicative that a hypothesized positive correlation exists between beneficent sharing and social capital in these shared social spaces. Further empirical research is needed to confirm or falsify this hypothesis.

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