

Making Maker Space: An exploration of lively things, urban placemaking and organisation

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abstract

This visual ethnographic study, which was conducted at Newcastle upon Tyne's Maker Space, explores the organisational and placemaking processes that emerge from a passion for making things. Placing a particular emphasis on this lively engagement, it examines how makers get beneath the surface of everyday objects and perceive their potential for transformation. Tracing the intimacy that makers develop with materials and the surrounding sense of social vitality and possibility that this gives rise to, the study examines how place and organisation are continually renegotiated and given new meaning. The analysis contributes to the literature on sustainable ways of organizing that emerge from the interstices of everyday life and adds to a growing literature on space and organization. It infuses the metaphor of 'parkour organisation' (where parkour is conceived as a disruptive and sensual mind-body engagement with urban space) with a material sensibility drawn from scholarship on lively materials (a fluid conception of things as materials in movement) and ecological sustainability. The organisation that emerges from the needs of makers to engage in a fluid conversation with materials is posited as a sometimes tense yet fruitful negotiation that characterises Maker Space as vibrant and distinctly alive. This process is evaluated as in keeping with approaches to urban development that disrupt 'non-place', promoting critical awareness of one's surroundings, and of civic life, through sensual, richly textured engagement.

Introduction

We entered Maker Space by the smaller room where a man was mending a ukulele and two guys were bent over the laser cutter, which was printing dinosaur shapes while giving off a smell of burning wood. In the bigger room, some of the makers were having a bubble-making evening, figuring out any way to make them – string, wire, tennis rackets, fans hooked up to computers; the place was jumping with creative energy and someone handed us a tennis racket to join in. Towards

the end people had spilled outside to the parking lot, ferrying the bubble mixture in and out and gathering at moments to watch the big soapy bubbles bounce across the tarmac. (Maker Space fieldnotes, 2014).

Maker Space is a community-run resource in Newcastle upon Tyne that occupies a former storefront on a run-down block in the city's shopping district¹. Focused on many aspects of making things from 3D printing to hand sewing, it offers members access to tools, workbenches and a friendly roomful of like-minded makers. This visual ethnographic enquiry explores the organised space that emerges from the activity of making things. It shows how, via a lively engagement with materials, Maker Space becomes a space of possibility that enriches the streetscape and wider city, supported by an emerging organisation that balances fluidity with structure (see Figure 1).

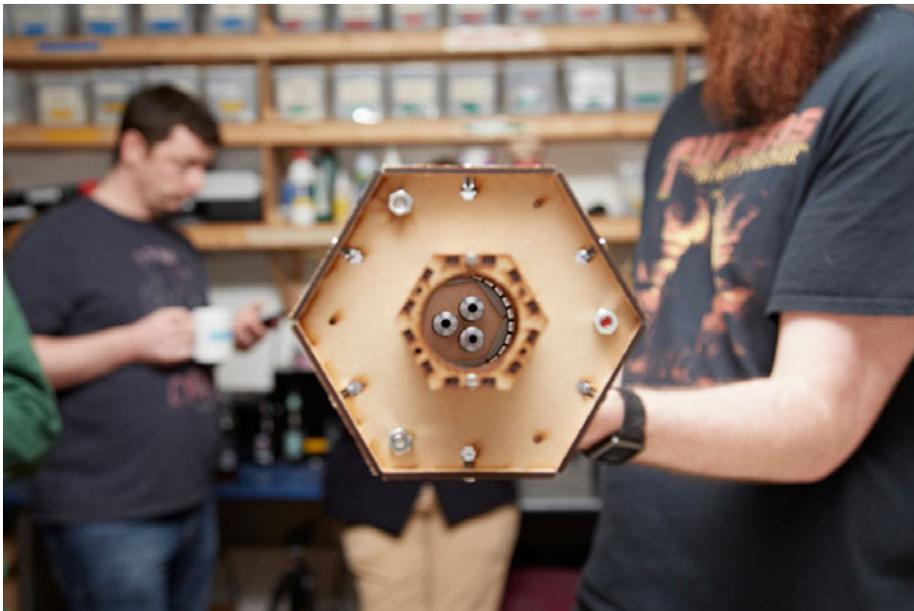


Figure 1: The creation of fascinating objects extends fluidly to the physical and social structure of the space.

This article connects scholarship on organisation and space to recent conceptualisations of the making of the material world, focusing on the urgent need to revitalise ‘non-places’ (Augé, 2008). Specifically, it brings together makers’ sensitivity to the ‘liveliness’ of materials (Carr and Gibson, 2016) with a disruptive, sensual notion of organisational placemaking (Daskalaki et al., 2008). Whereas existing scholarship on maker/hack spaces has tended to emphasise an explicit, shared political vision as a means by which such spaces might transform

¹ Maker Space has since relocated to another space in the city centre.

society, this research focuses more on the type of space that emerges from the tinkering itself, arguing that a passion for unfettered meddling with objects can agitate, even in the absence of a grand political vision, towards a more sustainable mode of organising and inhabiting urban space.

Carr and Gibson (2016) argue that over-emphasis on the financialised knowledge economy in the Global North has muted discussion of how the material world is produced. Upholding that those who make things hold the key to orienting society toward more sustainable outcomes, they call for micro-level analysis that re-focuses attention in this area. As such, they urge, 'ecological crisis demands more, rather than less, attention to materials and making processes' (298). With an emphasis on organisation and place, this article takes up Carr and Gibson's call for researchers to examine the connection between microspaces of making and broader debates about sustainability. Sustainability is considered here as a socio-cultural as well as ecological concept (Bontje, 2004; Hagan, 2015), defined around vibrant sociality, rich civic engagement and a mode of production that connects us meaningfully and respectfully to our world.

Connecting these ideas to organisation studies, the lively connection with materials that flourishes at Newcastle's Maker Space is considered here as an embodied, parkour-like engagement that restructures space 'as a realm of interaction and possibility, rather than a closed system' (Daskalaki et al., 2008: 60). Daskalaki et al.'s meditation on the radical inhabitation of 'an-aesthetised' (Dale and Burrell, 2002), homogenised non-places (Augé, 2008) urges organisational scholars to attend to unconventional practices that 'trick' such space into 'yielding creative possibilities and a sense of one's own body and humanity' (Daskalaki et al., 2008: 56). The contribution of this article is thus to infuse debate on organisation and space with a richer material sensibility, tracing the organisational and spatial processes that emerge, in this non-commercial interstice of urban life, from the passion for making.

The following section describes Newcastle's Maker Space, situating it in relation to the wider maker movement and scholarship on maker/hackspaces. This is followed by a brief literature review, which identifies aspects of the scholarship on lively materials that are relevant to sustainable organisation and draws out, from the literature on organisation and place, the relevance of sensual and embodied engagement to critical thinking and social transformation, arguing that attention to materials/making can enrich this scholarship. The methodology is then described, followed by a narrative drawn from photography, interviews and participant-observation in the setting. Returning to the literature, these findings are analysed in the concluding discussion.

Contextualising Newcastle's Maker Space

Newcastle upon Tyne's Maker Space is an independent, community-owned and operated workshop with 52 members² but is part of a maker phenomenon that has seen the growth of many such spaces globally. Worldwide, there are approximately 1,400 active makerspaces with around 500 located respectively in Europe and North America (Lou and Peek, 2016). A makerspace can be broadly defined as 'a collaborative work space inside a school, library or separate public/private facility for making, learning, exploring and sharing that uses high tech to no tech tools' (Makerspaces.com). Within this very broad container there is some debate about whether a distinction should be drawn between terms such as 'makerspace' and 'hackerspace' (Cavalcanti, 2013), however, the terms are often interchangeable – we therefore use the term 'makerspace' here to denote both. Organisationally, such spaces are diverse, including for-profit makerspaces such as the 'Techshop' chain, therefore the terms do not necessarily denote a collectivist or non-profit ethos. Alongside this heterogeneity, best-selling publications such as *Makers* (Anderson, 2013), as well as the popular Maker Faire events, promote the idea of a broadly unified worldwide maker movement oriented to reviving the art of tinkering as a hands-on, sociable way of transforming the world for the better (Dougherty, 2012). Notably, these somewhat evangelical claims have been tempered by recent critical analysis that situates making as primarily a leisure activity or personal lifestyle choice rather than one that is centrally oriented to social or political transformation (Davies, 2017).

Recent scholarship has explored many facets of the 'Maker Movement', from its role in education (Halverson and Sheridan, 2014) to its potential to transform supply chain design (Waller and Fawcett, 2014). Ethnographic study of hackerspaces has produced textured accounts of making practice, showing infusion of hacker norms with feminist (Rosner and Fox, 2016) and Chinese cultural (Lindtner, 2015) characteristics. Focusing on cities, Richardson et al. (2013: 150), suggest that maker networks are reinvigorating cities 'transforming the architecture of industrial-era corporatism to reflect a new wave of maker values'.

While aspects of this literature connect making to social transformation, makerspace ethnographies tend to emphasise the existence of a shared political vision in driving such effects, rather than examining closely the organisational impact of working with materials in the space. For example, Lindtner's (2015: 861-862) account of the co-created Shanghai hackerspace XinCheJian, emphasises a shared commitment to upholding Chinese values while

2 Figure supplied during the period of study.

challenging normative career paths. Similarly, Rosner and Fox's ethnography of Mothership Hackermoms highlights the shared vision of gender equality undergirding the space, focusing on the type of space and organisation for making that emerges out of the 'dark, unromantic, slightly humiliating side of modern motherhood' (2016: 5). Also, Richardson et al.'s (2013) article observes the impact of making in Detroit but lacks a fine-grained analysis of how this occurs, calling for further sociological study of the processes via which making nurtures urban resilience.

The fluid relationship between making things, organisation and place-making thus warrants closer theoretical unpacking. Drawing on work that examines the relationship between materials, awareness that the world can be transformed and critical thinking about organisation and place this article therefore seeks to construct a more explicit link between this sensual engagement with making and emergence of a place-based organisation that is oriented to sustainable outcomes such as vibrant sociality and urban revitalisation. Specifically, the type of place that is created is found to be consistent with a mode of urban development that involves people more richly in their local environment, militating against the political amnesia and social atomisation that occurs in overly corporatised urban centres.

Theoretical characterisations of materials, making and disruption of non-place provide a useful starting point for reflecting on the buzzing activity that goes on at Maker Space. The research was conducted in a largely inductive fashion, meditating on the link between the critical scholarship of making physical things and that of place-making/organisation – the intention here is to 'set the stage' in terms of this literature – the findings are presented and evaluated against these theoretical ideas in the following sections.

Lively materials and sustainable placemaking

This article draws on a conception of materials and making that emphasises the ability of makers to treat their world as fluid and changeable. Critical of the hylomorphic model of subject-object that has dominated Western thought, Ingold (2012: 438) distinguishes 'leaky' *things*, conceived as 'gatherings of materials in movement', from 'stopped-up' or 'completed' *objects* which 'stand over and against the perceiver and block further movement.' Rooted in a Heideggerian conception of the thing, materials here are regarded as lively rather than passive and inert (Bennett, 2010), as lines of flow (Deleuze and Guatarri, 2004: 451-452) where 'being something is always on the way to becoming something else' (Ingold, 2011: 3).

Within this conceptualisation, making, defined generally as ‘the composition and/or manipulation of materials that brings into being new or revised objects’ (Carr and Gibson, 2016: 302), becomes very distinctly a conversation rather than the imposition of pre-conceived notions of form on inert matter. Making is a fluid, ultimately political correspondence that pays attention to materials in a way that ‘transcends their configuration as things or objects at a singular point in time’ (Carr and Gibson, 2016: 302). Those who make, it is implied, are able to shift from what *is* to what *could be*; they are well equipped to deal creatively with the contingencies thrown up by ecological crisis, countering a high throughput production model where everyday life is enacted – rather emptily – through ‘finished’, readily disposable objects.

Undergirding Carr and Gibson’s analysis is the notion that hegemonic capitalist interests have generated a mode of production that cuts off the vitality of materials and obscures the provenance of the things we use and too readily get rid of, cutting us off from, in Hudson’s (2012: 374) terms, the ability to ‘imagine alternative ecologically sustainable and socially just visions of the economy.’ Linking this scholarship on materials and making to the socio-political dimensions of place-making, Paton (2013: 1084) argues that, where sensual, creative interaction with materials prevails, making is a mode of familiarity that keeps space relatable, rendering hard surfaces porous and accessible to the senses. For Paton, this familiarity, which comprises an ‘accumulation of bodily knowledges, where dense and fibrous relations with spaces and materials grow’ (*ibid.*: 1076), can be easily broken and disengaged by economic and technical upheaval. However, if nurtured, this intimate relation can foster a sensual relationship that connects us richly and meaningfully to place.

Organisation studies, non-place and the ‘parkour organisation’

Drawing on the above conception of materials/making, this article seeks to infuse Daskalaki et al.’s (2008) metaphor of the ‘parkour organisation’ with a material sensibility. A growing body of work has drawn attention to the relevance of lived space and place to organisational theory (Burrell and Dale, 2003; Clegg and Kornberger, 2006; Guillen, 1997), upholding the interplay between the built environment, workspaces and the dynamics of managerial control or capitalist hegemony. Adding to this scholarship, Daskalaki et al. are specifically concerned with the radical inhabitation of homogenised, corporatised urban space as a means to disrupt non-place through a deeply reciprocal engagement of the body and the built environment.

Resonating with scholarship on materials and making, Daskalaki et al.’s (2008) analysis centres on a problematic derived from the deadening, closing down and

disengagement from place that derives from smooth, inviolable surfaces. Following the practice of *traceurs* and using their physical engagement with the city as a metaphor, this mode of organisation is conceived as challenging – through the body in movement – the pacified veneer of non-place.

The sense of non-place (Augé, 2008) resulting from contemporary urban development has been widely theorized (Jacobs, 1992; Relph, 1976; Sennett, 1990; Sudjic, 1993). Our cities are increasingly characterised by homogeneity and repetition and the relationship of the individual to place is contractual and objectified. Furthermore, loss of an intimate, vibrant sense of place numbs critical-thinking skills (Paterson, 1997), producing isolated individuals with limited potential for civic engagement. Loss of connection to place reduces the capacity for imagination of the possible, instigating a vicious cycle of political amnesia and environmental degradation (Farrar, 2011). The predictable retail and leisure offerings that prevail in urban centres too often epitomise this ‘placelessness’.

Breaking through the ‘superficial formalism’ of placeless places, Daskalaki et al. (2008) argue for parkour-style interventions that physically and sensorily engage the body in space, yielding creative and critical potential. Again, the concern of this article is to infuse the metaphor of the parkour organisation with a material sensibility whereby a sense of possibility is transmitted via the sensual engagement with materials in the space. Making, as a sensual breaking-down and building up of things in a setting that itself becomes richly textured and storied through making processes can contribute to the notion of parkour organisation. The making of Maker Space can thus be considered in relation to theoretical insights around materials and making as well as suggesting a meditation on scholarship that highlights our need to connect with and co-create spaces that disrupt the anesthetising dynamics of the high street.

Methodology: Photographing and talking Maker Space

The study was inspired by the palpable creative energy experienced at Maker Space’s publicly accessible Welcome Wednesdays (see Figure 2).

The largely inductive and interpretivist methodology involved participant-observation on Welcome Wednesdays over a two-year period by the author and a more intense period of semi-structured interviews and photography (with the photographer) during December 2015-January 2016. We sought to explore the relationship between makers and their creations, the surrounding texture of sharing and organisation, and the impact of Maker Space on the streetscape. The

author has been a member of Maker Space since March 2014 (after being coaxed through the door by her curious eight-year-old son) and has received many hours of guidance on various construction projects from Maker Space members. The research is therefore also informed by a reflexive meditation based on fieldnotes from her research diary, reflecting her participation in the space as a somewhat daunted ‘outsider’ while also explicitly aiming to capture the contagious excitement and enthusiasm arising from her subjective encounter with the Maker Space.



Figure 2: Welcome Wednesday, where the social buzz of the space is palpable from inside and out.

Maker Space has no single gatekeeper and permission to conduct the study was sought/granted by posting the details of the planned research activity on the Maker Space-admin mailing list (which is open to all members), fielding any questions, and being permitted to proceed in the absence of objections. Several members immediately volunteered to participate in the research as part of this discussion process while other participants were part of a convenience sampling process based on those who were around during the photographic engagement. As a result of the discussion-list-based recruitment, the interviews attracted members who have a founding or very active role in the space. All except one of those interviewed are male (which is broadly representative of the male-female gender ratio of the membership – this imbalance was outside the scope of this study but would make an interesting future research project).

The photographic engagement took place on Welcome Wednesday at the Maker Space Christmas party. Recognising that photographic meanings are contingent and subjective (Pink, 2014: 75), we aimed at a strategy of looking (Lyon, 2013: 25) that was casual and responsive to the direction of makers, using photography as a ‘can-opener’ (Collier and Collier, 1986) that facilitated makers’ sharing their feelings during the social flow of the party and helped establish a conversational rapport in the subsequent interviews. Initially, the photographer created collaborative portraits with individual makers, intentionally focused away from the face to emphasise our interest in the sensual hands-on aspects of making. These photos were aimed at understanding members’ feelings about the things they had made, through their manner of holding their creations and the features they wanted to show to the camera. The analysis of the photographic data, which was informed by interview conversation about the images during and after the photographic engagement, paid particular attention to how made things are handled; the juxtaposition of individual making and sociality; and the sensory ‘marvelling’ that accompanies the handling and display of these creations.

As part of our emphasis on understanding the sensorial dimension of place, we also combined photography and movement, in the form of ‘walk-arounds’ that ‘attend to elements of the ways that people experience and give meanings to their environments’ (Pink, 2014: 81). Julian (the photographer) was guided around the space by different makers, capturing aspects of the language of objects and signage (Sudjic, 2009) in the space that were meaningful to them. Drawing on Abby’s (the author) reflection on Maker Space’s impact on the street and how it feels to approach Maker Space from the outside, Julian also photographed the movement and energy of members as transmitted through the windows.

Informed by the photographic engagement, ten audio-recorded interviews of 25-40 minutes were conducted at Maker Space or – when the space was too noisy – across the street at the City Library, which overlooks Maker Space. After transcription, these were shared with participants for their validation. Given the reflexive and ethnographic nature of the research, the interviews were conducted in an informal conversational style, exploring meanings and impressions that attach to the space and to making practice. This two-way process has also involved ‘bouncing ideas’ off some of the makers with regard to the analytical/theoretical focus of the paper (especially the framing of making in relation to ‘lively materials’).

As in much ethnography (Duneier, 2000; Van Maanen, 1991) the author/photographer’s subjectivities were treated as an integral aspect of this research and, rather than trying to excise it, the write-up focused on articulating feelings and experiences in a way that makers would read as a reasonable

interpretation of their world. Drawing on Pink (2009) the research design drew on an emplaced sensory methodology, acknowledging the 'sensuous interrelationship of body-mind-environment' (Howes, 2005: 7) in the space. Interviews were conducted in the space wherever possible so that machine noise and social interruptions worked their way into the conversation and the transcripts.

As such, we aimed to generate richly textured data based on a fluid engagement with the space. The transcribed data, fieldnotes and photographs were coded using NVivo with emergent themes identified using techniques drawn from grounded theory (Strauss and Corbin, 1990). The interpretation of the data, while somewhat inductive, is also deeply informed by the author's critical theoretical orientation, which is in turn entangled with her efforts to learn how to solder and use a drill. The study aims to respect this layered interpretation of social reality and, within the constraints of article-length, tries to retain the richness and enthusiasm with which makers expressed their passion for making things, resisting the tendency to reduce or resolve its contradictory aspects (Van Maanen, 1988: 116).

Findings

Maker Space's main room, on a Wednesday evening, offers a pleasant mix of individual concentration, as makers huddle over their projects, and warm interaction. The white workbenches in the main room are in close proximity – the front one, which is at dinner table height, is often abuzz with quadcopter activity. The taller worktables in the rear are more suitable for woodwork, while another station to the side is set up for soldering, however these lines are blurred and it is not unusual to see, at the same bench, a maker poring over delicate circuitry side by side with another who is cutting out cloth or sawing wood. Amidst the enticing boxes of hackable bits and bobs and the boards hung with hand tools (each with its own silhouette to remind everyone to put things back in the right place), makers focus on their projects with an enviable level of absorption, punctuated by currents of banter and show-and-tell that permeate the space with a friendly vibe.

The following sections explore how the space emerges physically and organisationally around the act of making, with a fluid, unfinished quality that extends from individual making projects to the making of a richly textured and storied space. The findings are organised into four sections, exploring a) the emphasis on getting beneath the surface of materials and everyday objects; b) the realm of interaction and possibility that emerges around making activity in the

space; c) the extension outwards of the space in revitalising the streetscape and wider city; and d) Maker Space's emergent organisation as an engaging, lively making project.

Getting beneath the surface

Armed with a cutting board and rotary cutter, Ben³ was cutting out fabric for bags, measuring, coaxing the material quickly into shape with dexterity. He has only recently started dabbling in sewing but now runs Maker Space's sewing nights, learning how to do things with speed and focus. Recently, he has also become interested in quilting, and he showed me a photo of a unique, collage-style quilt he had made from pieces of clothing that his kids had grown out of. Now that the quilt is finished, he's onto another experiment with the bags, just to get to know the fabric and tools and see what can come out of it. (Maker Space fieldnotes, 2016)

When asked why they make things, many of the makers privilege the satisfaction of 'making to learn', highlighting the types of new skills and knowledge that they acquire through setting themselves a making task and becoming absorbed by it. Phil, one of the co-founders, who spends long hours on painstaking and fiddly projects, coaxing tiny components into or out of place with delicate tools, compares the thrill of successfully making something to summiting a mountain peak. Another keen maker, Rob, noted that he sometimes purposely avoids using existing tutorials in order to set himself more of a challenge and learn more directly, finding his own way to a solution.

This process can take on its own momentum leading to a sustained hands-on engagement and intimate familiarity with the materials at hand, with makers showing extreme tenacity in puzzling over a problem until they find a workable solution. As Rob, who has devoted huge amounts of hands-on time to projects such as the Christmas window display (which involved uncooperative moving penguins and precise mathematics) comments, 'you get so far along and you've got to finish it because if you stop then it would be silly.'

Re-purposing and re-using found objects is an ideal outlet for this curiosity about pushing boundaries and problem solving. In the space, this process is encouraged by the use of loosely organised scrap containers which offer a scavenger's cornucopia of obsolete circuit boards, cast-off kids' toys, plastic tubes and scrap wood that members are free to rummage through (see Figure 3). These are complemented by the more organised (yet full of surprises) rows of boxes of 'Stepper Motors', 'Bulbs (Working)' and 'Phone Bits' (see Figure 4), as well as more specialised hacking equipment such as the device Phil uses for extracting

³ Pseudonyms have been used for Maker Space members.

soldered components from circuit boards (see Figure 5). Some of the makers described their making process as setting out from a discarded, superfluous or broken object and playfully feeling out the possibilities, handling and contemplating it to figure out how it might be re-used. For example, John, an expert upcycler, is re-purposing an old hospital stretcher as a radio mast, while Ben, another of the makers, regularly constructs toys for his children from things he has found lying around. For found objects as well as those that are purchased, the emphasis is on getting beneath the surface, redefining functionality or, as Phil puts it, ‘breaking things apart to take their design function away and use them in different ways.’



Figure 3: One of many ever-changing boxes of free ‘hackable’ scrap items that makers can rummage through.



Figure 4: Maker Space Consumables: Colour-coded boxes provide order to shared resources in the space while preserving a rich sense of variety and treasure-hunting to those who scavenge their contents.

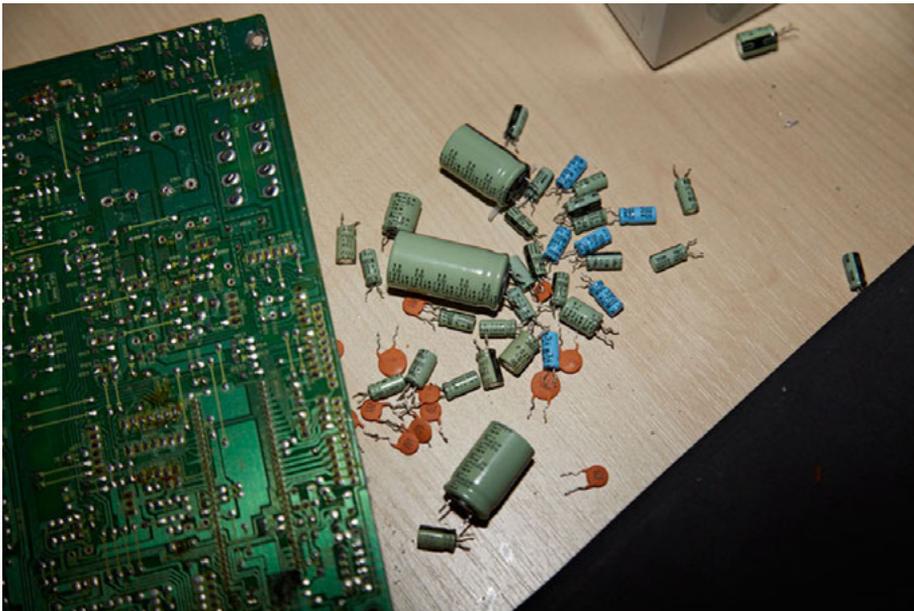


Figure 5: Components painstakingly extracted from old circuit boards, ready to be re-used in new maker projects.

While none of the makers expressed a particular ecological drive behind their making practice, the importance of making a well-built object of known provenance is a value that surfaced in several of the interviews. In particular, Ben regrets that things are no longer built to last, contrasting this with something he

has made, which ‘you don’t want to just throw away because you know you’ve invested a lot of time and effort into making it.’ Working with Ben to create a photographic portrait of the wooden toy bus he has made for his children particularly highlighted the sense of beholding and marveling that results from this making process. In the photo, he holds the bus solidly and proudly like a sumptuous dish; reflecting on the deep satisfaction that derives from knowing the craft that has put into it, he muses, ‘You can pick it up, you can show people you’ve got something there that you’ve made, that you can keep forever’ (See Figure 6).

The pleasure that makers derive from the things they have created is tangible and often transcends the need for instrumental value. This was evident in the photoshoot, where makers turned their creations over in their hands for the camera, marvelling at the playful or aesthetic qualities. Rob, who has created a number of impressive objects including a laser-cut Perspex model of the Tyne Bridge and a complex cube comprising hundreds of white LEDs, celebrates the mathematical poetry of his beautiful creations. Creating the photographic portrait of his LED cube, he held it at angles that displayed the complex array of lights to the camera, joking, ‘They serve no purpose at all whatsoever’ (see Figure 7). Things are also valued for their storied quality and for the funky and sensual way in which they have come into being. Evie, who is relatively new to the space, particularly relishes the idea of giving her friends gifts of the one-of-a-kind things – such as laser-cut felted wool coasters (see Figure 8) – that she has crafted herself. During the production process, the laser-cut felt gave off an interesting, slightly singed aroma (in the photographic portrait we spent time celebrating and trying to capture the blackened edges visible in the photo) that, we agreed, enhanced its uniqueness.



Figure 6: A one-of-a-kind toy bus: ‘You can pick it up, you can show people you’ve got something there that you’ve made, that you can keep forever.’

This emphasis on getting beneath the surface of everyday materials, surrounded by boxes of scavengeable bits and bobs, creates a place defined around surprise and fluidity – this open-ended, messy yet focused, emerging quality makes the space feel richly alive and creates a palpable energy that is explored further below.

A realm of interaction and possibility

We were playing with this rubbery stuff called Sugru this evening – someone had gotten hold of a ton of little packets of it and about seven of us were gathered around the workbench, fiddling with it, stretching it, sticking it onto things, combining it with bits and bobs from the boxes, and chatting about our ideas. My brain felt sluggish and I created a round blue blob that I took shamefully home, feeling less able than the others, who worked fluently and creatively with the material, bouncing ideas around and discerning its properties and potential – one of the guys made a little bendy reading lamp that impressed everyone. (Maker Space fieldnotes, 2014).



Figure 7: Rob shows off his beautiful LED cube: ‘They serve no purpose at all whatsoever.’



Figure 8: Laser cut felt and jewellery: ‘I think the drive to do it comes from the satisfaction of just being able to teach myself to do something.’

Integral to this pleasure in crafting unique things is a high level of interaction focused around knowledge sharing and inspiration, as makers work cheek-by-jowl on their projects in the small space. This ‘buzz’ infuses the space with a flow of social energy as well as providing a continual feast of things to handle, puzzle

over and admire. Showing made things to others, whether Maker Space members, passers-by, or members of the wider community is a central trope of much of the activity that goes on in the space.

Social interaction at Maker Space is, as Ben puts it, like having ‘a peer support network around you.’ Knowledge flows quite openly in the space, helping people solve tricky challenges such as unusual soldering issues or finding just the right component to upcycle from one of the scrap bins. As Tim, a regular to the space, comments, ‘there’s always somebody out there with a completely off-the-wall idea that sometimes will just do the trick for you.’

This knowledge sharing, rather than feeling transactional, is embedded in a pleasure that derives from physical engagement with materials while hanging out and chatting in the space with like-minded people. Bill, a long-time maker who is currently working on a miniature arcade game, notes that although he has access to the tools he needs elsewhere, he comes ‘for the social aspect of the Maker Space, to meet people, to share ideas we have in common.’ Similarly, Tim makes a point of coming in to socialize, ‘if I don’t come in the rest of the week one day I’d like to try and make it in is a Wednesday these days, just to come in and chat to people,’ while Rob enjoys the fact that due to the esoteric technical knowledge of many of the members, ‘there’s loads of people I can waffle on to my heart’s content.’ Interestingly, although specialist virtual discussion forums are plentiful, several of the members expressed their preference for face-to-face social interaction over virtual community and exchange, and were drawn to the hubbub of activity that takes place on a Wednesday evening.

Rather than simple information transfer, excitement and buzz about what is being made often becomes tangible in the space through the flow and form of things taking shape – as Evie comments, ‘Everybody’s got really creative ideas for things. I think that excitement carries throughout the community.’ This produces ‘crazes’ as makers get interested in and build off each other’s projects. As part of this contagion, 3D printers have multiplied – an assortment of them adorn the window ledge and are a highlight of the Maker Space ‘tour’ (see Figure 9, which was captured during the photographer’s guided walk around), and the quadcopter craze has sprouted an ‘obstacle course’ of empty picture frames that hang from the ceiling to test flying skill when the space is not too busy. Wednesday evenings, as noted earlier, are often the focus of this buzz of curiosity and sensory experimentation – the small space may be filled with a noisy juxtaposition of diverse activities – from sewing theatrical costumes to drilling holes in scrap metal. During moments such as the launch of Tim’s quadcopter at the Christmas party, such activity takes on the character of an ‘event’ – a shared moment that we were invited to record with the camera. In reflecting on the

photo, Tim described the launch as a moment of ‘dread and excitement’ – in such moments at Maker Space, there is a highly playful and celebratory atmosphere tinged with a thrilling edge of mechanical danger (see Figure 10).

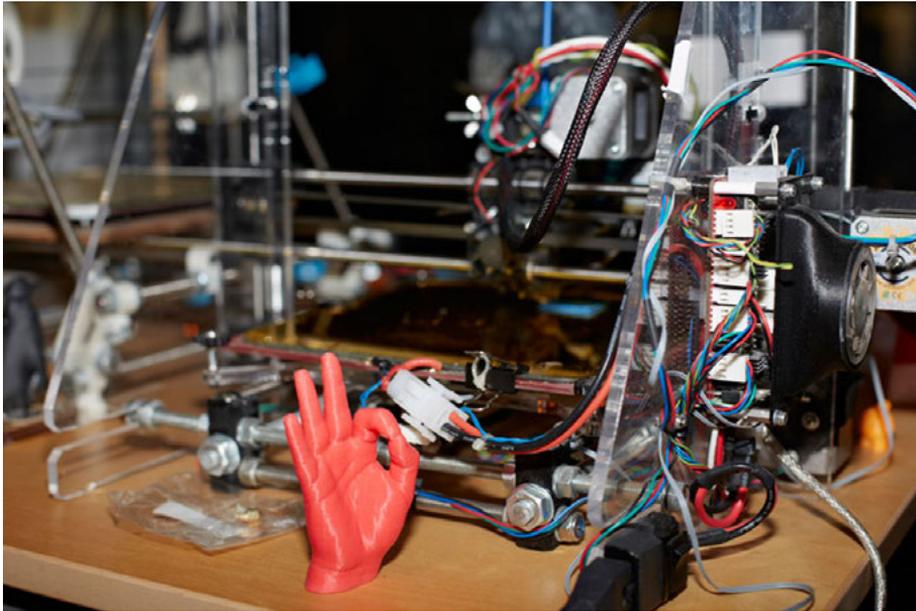


Figure 9: One of several 3D printers displayed in one of the windows: Excitement over particular technologies creates ‘crazes’ at Maker Space.

Extending outwards

As we dawdled outside, we were joined by a small boy of about four who had gotten away from his mother, who was loath to leave her shopping bags unattended at the grimy bus stop to come after him. He admired the plastic ducks in the window and seemed to have an already established favourite, possibly from previous deviant excursions from the bus stop. I couldn’t blame him for being attracted by the evolving array of colourful, peculiar objects that make this window a lure for the curious on an otherwise grim stretch. (Maker Space fieldnotes, 2015)

Maker Space members are keen to spread their excitement and knowledge outside of the space itself through display of the things they have made, as well as engaging members of the wider public in making. The large, shop-style windows that face the busy thoroughfare capture the attention of passers-by and those waiting for buses at the nearby bus stops. As Ben comments, ‘we have a lot of things that we make displayed in our window and we do get a lot of families, a lot of kids, looking in and really enjoying what they’re seeing through the window.’ The display of plastic ducks in the window is a particular favourite with children and the 3D printers on display often lure in curious outsiders. At Christmas-time, the window display of penguins traversing Rob’s laser-cut Tyne

Bridge served as a festive attraction, livening up a dreary section of the street. In warmer weather, as happened with the bubble-making evening (see opening fieldnote) the making activity literally spills out of the space onto the tarmac outside.



Figure 10: Members gather round for the quadcopter launch at the Christmas party – a moment of ‘dread and excitement’

This bright yet non-commercial presence in the city centre complements the library opposite as an urban space that is not just focused around shopping and, importantly, is about inviting others to participate in getting beneath the surface of everyday objects. Makers also carry their practice to other venues, participating in library-based events, community arts projects and the annual Newcastle Maker Faire with enthusiasm. During the fieldwork, co-founders Phil and Seb were working on a shouting camera and ‘self-hearing headphones’ collaborating with an arts project that helps kids conceptualise making ideas. As Malcolm, an active committee member who is currently designing a 3D printing slicer notes, ‘I like the idea of changing the community that we live in ... helping it grow, and this is one way to do that. I think it enriches the city to have this type of thing going on.’ Bill enjoys giving people ‘permission’ to take dead or unused machines apart, commenting that he particularly enjoys Maker Space’s community involvement in showing ‘people that anyone can make things, anyone can create things, and you don’t have to have an engineering background or a scientific background’.

Appropriate organisation for making Maker Space

Please put half the cups one way up and half the other way up: We are never going to agree if cups should be stored bottom up or bottom side down. One way dust can get in, and the other the rims will get gunk from the shelf. It is a lose-lose situation. The solution is to do both. Don't be selfish. It is not the Maker Space way. (Notice inside the kitchen cupboard, Maker Space, 2016)

Generating an organised physical space that supports the creative autonomy and sociality at the heart of making is in itself a making project. Challenges of organisation, such as balancing 'messy' open-endedness with the need for rules (as in the case of health and safety), create a dynamic but productive tension – another puzzle for makers to solve – that promotes engagement in the space and fuels urban vitality.

Maker Space has a flat organisational structure in which, as Mark – a multi-talented maker who is currently working on a 3-D printed robot hand – puts it, 'Anybody is free to do anything with the space as long as it doesn't impact on other people's use of it' so that, in effect, 'no one really runs Maker Space'. A committee exists largely for legal reasons but emphasis is on openness and accommodation of different opinions with a commitment towards getting along and getting things done. As Seb, one of the founding members says, 'I like to keep things so everybody can have a say and everybody can have an opinion, but we don't have to get everybody to agree'. The general lack of coercion in the organisation's structure is balanced by the willingness of members to pitch in and take on less desirable tasks, and this process appears to work relatively smoothly.

This normative framework seems to support makers' interest in being left to get along with the creative flow of their projects, without things becoming too locked down or stalled. At the same time, in areas such as health and safety, or in organising resources for communal use, structure and regulation are evident but humour and a homemade aesthetic help to uphold these rules in a non-dogmatic fashion (See Figure 11). Situations have arisen, such as the storage of dangerous chemicals in the fridge or the acquisition of more powerful tools, where it becomes apparent that tighter regulation is needed, however, as Malcolm points out, this can produce tension as 'people don't feel that they want all that organisation'. While not without its frustrations, this tension between messiness and organisation unfolds dynamically and productively, appearing to support the fluid continuum between autonomy and collaboration that members need to support their lively conversation with materials.



Figure 11: Safety warning on the laser cutter: humour and homespun signage 'soften' the regulatory features of the space.

This open-endedness extends to the membership model. Unlike some other hackspaces, Maker Space operates an open membership policy where anyone can join and pay the monthly membership fee of ten pounds (those who wish to pay more or less are able discreetly to do so), and non-members are invited to come and use the space for free on Wednesday evenings. Beyond the financial side of membership, the makers feel that the norms and culture of the place act as a natural filter, appealing to like-minded people who are interested in making objects in a supportive community of peers.

Those who are too anti-social or who are not sufficiently interested in making would not tend to hang around for long. As John says, 'It's like because we know the people that are coming in are interested in the sort of stuff we're doing or they wouldn't come through the front door.' Building on this openness, the welcoming atmosphere on Wednesday evenings is a considered and intentional effort on the part of members (See Figure 12). Noting the slightly aggressive feel of some techie spaces, Seb says about co-founding the space, 'I wanted it to be a space I would feel welcome and want to go to, like the theme tune to *Cheers*, kind of thing.'

While the fluid, open-endedness of making extends to a welcoming and inclusive set of social norms, and supports members in getting involved in those projects that interest them, there are limits and challenges in the current organisational framework. The open-door policy on a Wednesday runs up against possible

insurance issues and there have been occasional ‘characters’ who appear to be quietly scoping the place out for possible theft. The popularity of Wednesdays has also sometimes been a problem, creating social overload, particularly when visitors appear to want makers to do things for them rather than making things themselves. Normatively, members also distinguish their hobby-based activity from the more entrepreneurial and contractual ‘Fab Lab’ model, and tend to direct business-oriented enquiries elsewhere. Oriented to self-directed creation of tangible things, these checks and balances on openness arguably protect Maker Space from becoming more instrumental and commodified.



Figure 12: Makers have worked to create a welcoming atmosphere, inviting the public into the space on Wednesday evenings.

The organisational and physical form of Maker Space is a work-in-progress and perhaps because of the challenges and tensions involved, it appeals to these avid problem solvers. Noting the similarity between Maker Space’s machinations and the Houses of Parliament, Malcolm notes that this building process has made him feel engaged with the political situation and why this is not working correctly, ‘So from my experiences I’ve certainly learnt about community and how it works right now, our community, our society, whatever you care to call it.’

Discussion: From lively materials to revitalised place

This meditation on Newcastle upon Tyne’s Maker Space has traced the emerging organisation and place-making efforts that arise from members’ making desires

and practices. As such, the makers' efforts to break through the hard 'stopped-up' surfaces of the things we use are characterised as a materially infused form of parkour organisation. This sensual engagement, via making things, between the human body and place, interrupts structural expectations of this former retail-space, encouraging 'chance, interaction, possibility, imagination, creativity and change' (Daskalaki et al., 2008: 51) that spills over into the street and the wider city.

The study identifies fluid connections between making activity in the space and disruption of non-place, exploring how the creation of fascinating objects extends fluidly to the physical and social structure of the space. This was reflected in some of the photos, which convey the micro-scale of making (and the pride in showing things off) against a backdrop of social interaction and shelves stacked with rich resources (see Figure 13). The excitement and self-fulfilment that derives from crafting a unique model of the Tyne Bridge or a wooden bus and the structuring of the space around lively interaction and surprise are richly intertwined. The creative inspiration and learning opportunities that derive from intimate familiarity with wood, cloth, and electronic circuitry, much of this focused on re-purposing of found objects, creates a lively conversation with materials in the space but also an awareness that place might be continually renegotiated and infused with new meaning. Fascination with problem solving in the realm of 3D printers and felt coasters also connects seamlessly to an engagement with tweaking and finessing the organisation to support the creation of these quirky, personal, one-of-a-kind things – playfully navigating the continuum between looseness and regulation – the political, social, spatial and material project of making Maker Space itself.

This intermingling of self with the things we create and the anchoring in memorable and richly textured place (Paton, 2013) that radiates outwards from this has deep implications in the political and ecological realm. Bland and repetitive cities dull our ability to appreciate our interconnectedness and 'retard our capacity for imagining future, better places by instituting a paralyzing uniformity' (Farrar, 2011: 727) that diminishes political engagement. By contrast – as evidenced by makers' interest in designing a fluid, workable organisation – memorable spaces that we can deeply connect to are politically engaging, fomenting a radical democracy that is 'unruly, uncertain, unfinished, collaborative, alive' (Farrar, 2011: 732).

Maker Space, as well as being dynamic and engaging, has a playful sensibility that extends from the free-wheeling exuberance of the bubble-making evening to the humorous yet purposeful notices that prevent coffee mug disputes or protect eyes from laser damage. This an open-ended position that, in Paterson's (1997:

90) terms, contains the seeds of its own existence. Such a process is disruptive in terms of challenging the imagination to consider what *could be* rather than being imprisoned in what is (Carr and Gibson, 2016), suggesting the type of physically and socially vital spaces as well as the kinds of re-use of materials that are possible in cities. Such a process, which agitates toward re-inventing our relationship to materials and making as well as our engagement with place, ‘speaks of possibilities and, as with all notions of life, it can be said to be joyful’ (Paterson, 1997: 90). In terms of creating a fluent dialogue with materials that negotiates place as an unfinished and lively making project, this suggests a realm of endless possibility and, in Paterson’s terms, a continuous future.



Figure 13: Members devoted countless hours to devising this elaborately constructed moving Christmas window display of 3D-printed penguins crossing a laser-cut Tyne Bridge.

In keeping with Dale and Burrell’s (2002) assertion that the relationship between organisation and space has been under-researched, Maker Space’s intervention in the urban environment, rooted in the sensual, sociable, unfettered-yet-organised creation of tangible things, is an intriguing example of the vitality that can take root in the interstices of a homogenised landscape. As a materially infused contribution to the notion of parkour organisation (Daskalaki et al., 2008), this study urges greater attention in organisation studies toward examining practices that break through the surface of things, ‘tricking’ space into yielding new possibilities while restoring us to a richly interconnected sense of self. In such interventions – against the corporatised, anesthetised, commodified city – ‘human agency and the performativity of the everyday, are capable of

transforming the otherwise alienating non-places, to grounds of possibility, creativity and civic identity' (Daskalaki et al., 2008: 49). In these parkour-like forms, which re-negotiate the meanings of the structures in which we are embedded, disruption of the status quo is possible and greater attention from our field is warranted.

references

- Anderson, C. (2013) *Makers: The new industrial revolution*. New York: Random House Business.
- Augé, M. (2008) *Non-places*. London: Verso.
- Bennett, J. (2010) *Vibrant matter: A political ecology of things*. Durham: Duke University Press.
- Bontje, M. (2004) 'Sustainable new economic centres in European metropolitan regions: A stakeholders' perspective', *European Planning Studies*, 12(5): 703-722.
- Burrell, G. and K. Dale (2003) 'Building better worlds? Architecture, space and organisation', in M. Alvesson and H. Willmott (eds.) *Studying management critically*. Sage: London.
- Carr, C. and C. Gibson (2016) 'Geographies of making: Rethinking materials and skills for volatile futures', *Progress in Human Geography*, 40(3): 297-315.
- Cavalcanti, G. (2013) 'Is it a hackerspace, makerspace, techshop, or fablab?'. [<http://makezine.com/2013/05/22/the-difference-between-hackerspaces-makerspaces-techshops-and-fablabs/>]
- Clegg, S. and M. Kornberger (2006) 'Organising space', in S. Clegg and M. Kornberger (eds.) *Space, organisations and management theory*. Copenhagen Business School Press: Copenhagen.
- Collier, J. and M. Collier (1986) *Visual anthropology: Photography as a research method*. Albuquerque: University of New Mexico Press.
- Dale, K. and G. Burrell (2002) 'An-aesthetics and architecture', *TAMARA: Journal of Critical Postmodern Organization Science*, 2(1): 77-90.
- Davies, S.H. (2017) 'Characterizing hacking: Mundane engagement in US hacker and makerspaces', *Science, Technology and Human Values*, Online First, DOI: 10.1177/0162243917703464.
- Daskalaki, M., A. Stara and M. Imas (2008) 'The "parkour organization": Inhabitation of corporate spaces', *Culture and Organization*, 14(1): 49-64.

- Deleuze, G. and F. Guatarri (2004) *A thousand plateaus*. London: Continuum.
- Dougherty, D. (2012) 'The maker movement', *Innovations: Technology, Governance, Globalization*, 7(3): 11-14.
- Duneier, M. (2000) *Sidewalk*. New York: Farrar, Straus and Giroux.
- Farrar, M.E. (2011) 'Amnesia, nostalgia, and the politics of place memory', *Political Research Quarterly*, 64(4): 723-735.
- Guillen, M.F. (1997) 'Scientific management's lost aesthetic: Architecture, organisation, and the Taylorized beauty of the mechanical', *Administrative Science Quarterly*, 42(4): 682-715.
- Hagan, S. (2015) *Ecological urbanism: The nature of the city*. New York: Routledge.
- Halverson, E.R. and K.M. Sheridan (2014) 'The maker movement in education', *Harvard Educational Review*, 84(4): 495-504.
- Howes, D. (2005) 'Introduction', in D. Howes (ed.) *Empire of the senses: The sensual culture reader*. Oxford: Berg.
- Hudson, R. (2012) 'Critical political economy and material transformation', *New Political Economy*, 17(4): 373-397.
- Ingold, T. (2011) 'Introduction', in T. Ingold (ed.) *Redrawing anthropology: Materials, movements, lines*. Farnham: Ashgate.
- Ingold, T. (2012) 'Toward an ecology of materials', *Annual Review of Anthropology*, 41: 427-442.
- Jacobs, J. (1992) *The death and life of great American cities*. New York: Vintage.
- Lindtner, S. (2015) 'Hacking with Chinese characteristics: The promises of the maker movement against China's manufacturing culture', *Science, Technology and Human Values*, 40(5): 854-879.
- Lou, N. and K. Peek (2016) 'By the numbers: The rise of the makerspace'. [<http://www.popsoci.com/rise-makerspace-by-numbers>]
- Lyon, D. (2013) 'The labour of refurbishment: Space and time, and the building and the body', in S. Pink, D.E. Tutt and A. Dainty (eds.) *Ethnographic research in the construction industry*. Oxford: Routledge.
- Makerspaces.com 'What is a makerspace?' [<https://www.makerspaces.com/what-is-a-makerspace/>]
- Paterson, D.D. (1997) 'Community building and the necessity for radical revision', *Landscape and Urban Planning*, 39(2-3): 83-98.

- Paton, D.A. (2013) 'The quarry as sculpture: The place of making', *Environment and Planning A*, 45(5): 1070-1086.
- Pink, S. (2009) *Doing sensory ethnography*. London: Sage.
- Pink, S. (2014) *Doing visual ethnography*. London: Sage.
- Relph, E. (1976) *Place and placelessness*. London: Pion, Ltd.
- Richardson, M., S. Elliott and B. Haylock (2013) 'This home is a factory: Implications of the maker movement on urban environments', *Craft + Design Enquiry*, 5: 141-154.
- Rosner, D.K. and S.E. Fox (2016) 'Legacies of craft and the centrality of failure in a mother-operated hackerspace', *New Media and Society*, 18(4): 558-580.
- Sennett, R. (1990) *The conscience of the eye: The design and social life of cities*. Norton: New York.
- Strauss, A. and J. Corbin (1990) *Basics of qualitative research: Grounded theory procedures and techniques*. London: Sage.
- Sudjic, D. (1993) *The 100 mile city*. San Diego: Harcourt Brace & Co.
- Sudjic, D. (2009) *The language of things*. London: Penguin.
- Van Maanen, J. (1988) *Tales of the field: On writing ethnography*. Chicago: The University of Chicago Press.
- Van Maanen, J. (1991) 'The smile factory: Work at Disneyland', in P.J. Frost et al. (eds.) *Reframing organizational culture*. Thousand Oaks: Sage.
- Waller, M.A. and S.E. Fawcett (2014) 'Click here to print a maker movement supply chain: How invention and entrepreneurship will disrupt supply chain design', *Journal of Business Logistics*, 35(2): 99-102.

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