EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES

vol.2, n.2 2019
ISSN 2612-0496

THE NEW SPACES OF THE COMMON. SPATIAL AND POLITICAL MODELS OF "MAKING"

Edited by Manola Antonioli

Manola Antonioli, Tom Cahill-Jones, Andrea Cattabriga, Olindo Caso, DK Osseo-Asare, Donna Cohen, Ioanni Delsante, Chiara Carolina Donelli, Alessandra Gerson Saltiel Schmidt, Ivano Gorzanelli, Charlie Hailey, Steve Harding, Cécile Houpert, Tim Ingold, Bastian Lange, Massimo Menichinelli, Serena Orlandi, Michele Trimarchi.

Arnold Eagle (American, 1909 - 1992), Man reaches his hands into a machine, about 1940–1942, Gelatin silver print - Digital image courtesy of the Getty's Open Content Program

CPCL

EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES

n.**2** 2019
vol.**2**

ISSN 2612-0496
https://cpcl.unibo.it/
https://doi.org/10.6092/issn.2612-0496/v2-n2-2019

THE NEW SPACES OF THE COMMON. SPATIAL AND POLITICAL MODELS OF "MAKING"

Manola Antonioli,
Tim Ingold,
Ivano Gorzanelli,
Massimo Menichinelli,
Alessandra Gerson Saltiel Schmidt,
Bastian Lange,
Steve Harding,
Tom Cahill-Jones,
Andrea Cattabriga,
Donna Cohen,
Charlie Hailey,
DK Osseo-Asare,
Ioanni Delsante,
Serena Orlandi,
Chiara Carolina Donelli,
Michele Trimarchi,
Cécile Houpert,
Olindo Caso

CPCL

EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES

n.**2** 2019
vol.**2**

ISSN 2612-0496
https://cpcl.unibo.it/
https://doi.org/10.6092/issn.2612-0496/v2-n2-2019

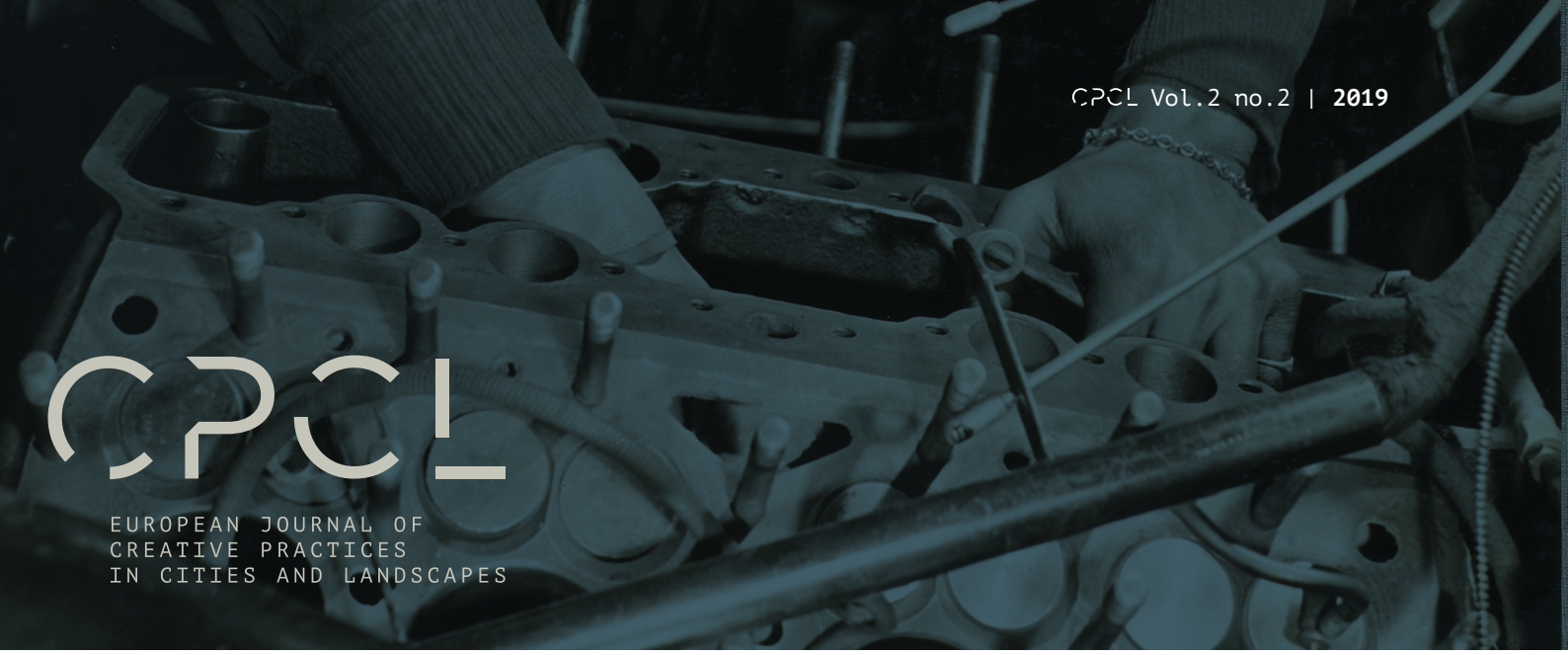
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730280.

European Journal of Creative Practices in Cities and Landscapes (**CPCL**) is scientific journal recognized by ANVUR (Italian National Agency for Evaluation of Universities and Research Institutes) for disciplinary areas 08 and 11.
The Journal is indexed in the following databases and search engines: ANCP, BASE, Google Scholar, ROAD, Worldcat.

CPCL

n.2 2019
vol.2

EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES



CPCL Vol.2 no.2 | 2019

CPCL
EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES

EDITORIAL

The New Spaces of the Common: Spatial and Political Models of "Making"

Manola Antonioli — Ecole Nationale Supérieure d'Architecture de Paris La Villette (France)
antonioli.manola@wanadoo.fr

KEYWORDS
Making; Design; Architecture; Common; Third Spaces.

https://doi.org/10.6092/issn.2612-0496/10629
ISSN 2612-0496

Today we are experiencing, in the fields of architecture and design but also in the context of emergence of a social and solidarity economy, a renewed interest for "making" and for a revival of the tradition of *Do It Yourself (DIY)*. These issues concern the professionals of culture as much as the representatives of the civil society. We are rediscovering craftsmanship, but in the current context characterized by the power of the new digital tools, so that numerous observers can speak of a new "digital" or "industrial" craftsmanship.

Especially in urban areas, "third places" appear, creating intermediate spaces between the private and public domain, relational spaces where the meetings which occur have more importance than the things produced, places which build themselves around new links, so that "making" becomes again a way to act in common.

This issue of CPCL aims at building a typology of these places and their functions in contemporary spaces. It is very difficult to propose a mapping of these new places, because they appear, are transformed and disappear at high speed and because they associate physical places with virtual spaces. What are the commonalities, but also the differences and the specificities of places as diverse as cafés, business incubators, spaces of manufacturing, spaces for meetings or work, which nevertheless recognize themselves every under the still very vague label of "third places"?

In 1958, in *The Human Condition*, Hannah Arendt explored the opposition between "making" and "acting" as two different modalities of the *vita activa*, an opposition established on the division between public and private spaces. Labor locks the workers in the private space of their activity and excludes them from the common, while action (in particular in its political shape) produces a shared space and establishes the network of human relations. How can "third places" contribute to redefine these traditional boundaries between "making" and "acting," between labor, work and action (to resume the three Arendt's fundamental categories)?

The discussions on the ways to "make in common" are an essential component of "third places" and makerspaces: within them, creators and users think collectively about the way in which "making" can produce new definitions of the common. What is the nature of these debates which spread around "making"?

The issue opens with a contribution by the anthropologist Tim Ingold, whose thinking has contributed to a deep change in the way we think about "making," in its relationship with the environment (human and non-human). Ingold starts with an analysis of *savoir-faire* (know-how) as a fruit of a *habitus*. This term does not refer in this article to Bourdieu's theories, but rather to the way Marcel Mauss used it in his essays on "Techniques of the Body" in 1934. In this sense, the habit of craftsmen, artisans, designers but also scholars or musicians is a form of embodied knowledge. Ingold shows—thus overcoming the classic dichotomy between work and words, action and language—that this knowledge is never silent and mute, but is accompanied by words, by the ability to say it and tell it. According to him, therefore, "craft is a way of telling," and "making" is a processual and haptic narrative (open to others and open to the world).

The article by the philosopher Ivano Gorzanelli crosses Richard Sennett's theories on the "open city," Tim Ingold's on "making" and Bruno Latour's critique of modernity and its false dichotomies between the respective fields of "Nature" and "Culture." These three contemporary thinkers draw, each from their own point of view, a moving, processual reality in which the nature of the project (landscape, architecture, design, etc.) must be radically rethought, particularly in the context of a new "modesty" on the part of the designer, called upon to create connections between humans and

non-humans (materials, natural resources, technical artefacts) instead of playing the role of a demiurge free of all constraints.

These three perspectives call, each in their own way, for new thoughts and practices of what Ingold calls the "in-between": porous borders, interstices, membranes (Sennett). The question that guides the article is therefore the following: "what remains of the project?" in a context of global redefinition of our links to the world, to nature, of the impact of our techniques on our environment, of the meaning of "making" (inseparable from that of "thinking" and "feeling"). A question that obviously remains open, but which pertinently identifies the problems that today's designers (creators of artefacts, networks, relationships, buildings or spaces) are confronted with.

The Maker Movement has contributed in recent years, at the international level, to this reflection on the evolution of "making," by creating new spaces with hybrid functions where artisans of a new kind operate and meet. The article by Massimo Menichelli and Alessandra Gerson Saltiel Schmidt proposes a cartography of this galaxy with shifting contours, which brings together a vast typology of spaces and practices (FabLabs, Makerspaces, Hackerspaces, etc.) that share the desire to closely associate new ways of making with the political ambition to create democratic spaces for sharing and pooling knowledge.

The following article by Bastian Lange, Steve Harding and Tom Cahill-Jones restricts the focus to the European models of the movement and the emergence of a policy making practice that is gradually developing in various cities. It thus shows the multiplicity of actors (local administrations, universities, educational institutions) involved in these processes at the European level and the importance of the role of universities, which implement in their relations with third spaces their "third mission" (after the two missions of teaching and research). Third mission includes cooperation projects with partners outside the higher education landscape and creates new forms of collaboration between education, research and civil society. Andrea Cattabriga then analyses these transformations in one of the Italian regions more open to innovation, Emilia-Romagna. The regional makerspace network in Emilia-Romagna is aimed at connecting local makerspaces, Fab Labs and hackerspaces, in the context of innovation.

The last paper, authored by Donna Cohen, Charlie Hailey and DK Osseo-Assare, presents a project which rethinks architectural work in the context of waste (the Repurpose Project). Located in a university town in Florida's north region, the Repurpose Project promotes reuse of materials and presents itself as a "spatial common" that questions architectural practices, in order to make them evolve towards an approach that consumes fewer resources and materials, focused on co-creation experiences.

All of these texts (supplemented by the "Miscellanea" and "Practices" sections and the case study analyses they contain) show how closely

the new spaces of commons associate spatial models, models of making and political ambitions. They thus become an opportunity for the emergence of new porosities in urban spaces—where they are currently concentrated—for combining local dynamics with global dynamics, and actively contribute to the emergence of new paradigms of production and consumption, as well as to contribute to the political debate on the nature and scope of the common and commons goods.

In conclusion, the whole issue can be seen as an attempt to answer collectively the question posed at the beginning by Ivano Gorzanelli: "what remains of the project?" We must understand the full polysemic scope of the word "project," which extends from design practices to political ecology. This work has been prepared in advance by a collective debate in two phases: an Italian-French research workshop which took place in Paris, at the Ecole Nationale Supérieure d'Architecture Paris Val de Seine on May 13 and 14, 2019 and a seminar with Tim Ingold at the University of Bologna on October 8, 2019 on his book *Making. Anthropology, archaelogy, art and architecture*.

Special thanks to the anonymous peer reviewers who made this issue possible with their comments and insights: Lucia Baima, Alice Borchi, Saveria Boulanger, Amanda Brandellero, Nancy Couling, Ioanni Delsante, Valentina Gianfrate, Vincent Jacques, Viviana Lorenzo, Victor Muñoz Sanz, Valentina Porcellana, Jörg Schröder, Emanuele Sommariva, Antonella Tufano.

Manola Antonioli received her PhD at the École des Hautes Études en Sciences Sociales (EHESS) in Paris. Since 2015 she is Professor of Philosophy at the École Nationale Supérieur d'Architecture de Paris La Villette. She has published numerous articles on the philosophy of architecture and the city, aesthetics, and the theory of design. Among her latest publications: *Machines de guerres urbaines* (Paris: Éditions Loco, 2015), *Paysages Variations,* with Vincent Jacques and Alain Milon (Paris: Éditions Loco, 2014) and *Théories et pratiques écologiques* (Nanterre: Presses universitaires de Paris ouest, 2013).

CPCL Vol.2 no.2 | 2019

Fig. 291. Surface relief in simplest form of intersection.

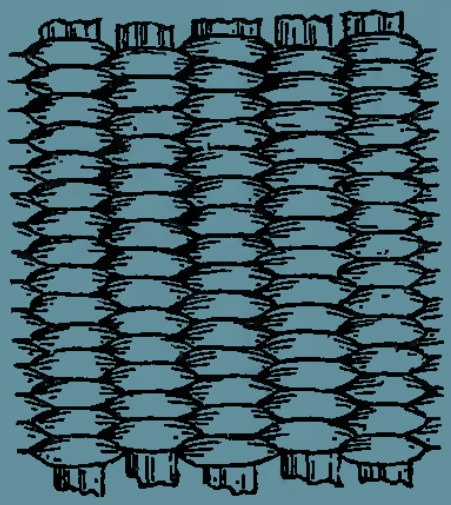


Fig. 292. Surface relief produced by horizontal series crowded together.

Fig. 293. Surface relief produced by wide fillets set close together.

CPCL
EUROPEAN JOURNAL OF CREATIVE PRACTICES IN CITIES AND LANDSCAPES

POSITION

Of Work and Words: Craft as a Way of Telling

Tim Ingold — University of Aberdeen (United Kingdom) — tim.ingold@abdn.ac.uk

ACKNOWLEDGMENTS

The following text reproduces in an abridged form the lecture that Tim Ingold gave during the workshop organized by Andrea Borsari and Ivano Gorzanelli on behalf of the Department of Architecture---University of Bologna and its PhD program in Architecture and Design Cultures, October 8, 2019 at DAMSLab in Bologna. The author has revised the text before publication.

ABSTRACT

This chapter takes issue with the notion of embodied knowledge by focusing on habit—the habit of craftsmen, artisans, musicians and scholars. The argument has two components. The first is to show that the habits that enable practitioners to move on in the accomplishment of their tasks are neither tacit nor sedimented in the body but generated and enacted in an attentive and kinaesthetic correspondence with tools, materials and environment. This correspondence is not silent and still but noisy and turbulent, open and alive to the world. To describe it, we adopt the notion of hapticality. In the domain of hapticality, thinking is the churn of a mind that stirs and is stirred by the sounds and feelings of the milieu. This why habitual action is also thoughtful, characterised by an awareness that is not so much cognitive as concentrative. This leads to the second part of the argument, which is to show that words, too, are living things, immersed in the currents of hapticality. Thus we refute the opposition, built into the constitution of the academy, between verbalisation and embodiment. Work and words, we insist, are animate. They both unfold in habit and afford ways of telling.

KEYWORDS

Making, Hapticality, Habitus, Embodied Knowledge, Telling.

https://doi.org/10.6092/issn.2612-0496/10447
ISSN 2612-0496

Personal knowledge and the *habitus*

The greater part of what we know, we cannot explain. This is savoir-faire, or know-how. The philosopher Michael Polanyi[1] called it "personal knowledge"—knowledge that adheres so closely to the person of the practitioner that it cannot be held up to scrutiny or posited as an object of reflection or analysis. Without it, Polanyi argued, nothing could be practicably accomplished. We could not tie our shoelaces, beat an egg, hold a pen, or ride a bicycle. But nor, for that matter, could we design a building, solve an equation, or compose a symphony. It is not that there are no rules at all. But rather than furnishing the pegs that underpin the landscape of action, they more resemble signposts in the landscape itself, which point us in the direction we need to go. They are what we call rules of thumb, offering guidance without specification. In practice, they are more ostensive than prescriptive. Once set upon a course, we rely upon the reservoir of personal knowledge to carry on.

Now here as elsewhere, Polanyi could hardly have been more emphatic that what his inquiries had disclosed was a realm of *mind*—a "mental domain"—the existence of which had been previously unacknowledged, or that until then, had not been accorded its due. Yet his discovery was destined to suffer an ignominious fate at the hands of subsequent social theory which had, albeit belatedly, realised that human beings are only present in the world because they have, or rather *are*, their bodies. This realisation is commonly traced back to an influential essay on "Techniques of the body," penned by the ethnologist Marcel Mauss in 1934.[2] Drawing attention to the sheer diversity of postures and gestures involved in such everyday tasks as walking, carrying loads, eating and sleeping, Mauss realised that there is more to this than the kind of idiosyncratic variation that marks one individual from another and that in French would be called *habitude*. It is not just a matter of what you might happen to pick up or, conversely, of what you might improvise for yourself. Some children, Mauss noted, are more inclined than others to imitate the behaviour they observe around them, yet both weak and strong imitators, if they belong to the same society, are similarly educated by example and correction into forms of bodily comportment deemed proper to their age and status. To denote these forms, socially imposed rather than individually acquired, attributable to education rather than imitation, and thus enshrined in a tradition, Mauss co-opted the Latin term *habitus*.[3]

---

1. Michael Polanyi, Personal Knowledge: *Towards a Post-Critical Philosophy* (London: Routledge and Kegan Paul, 1958).

2. Marcel Mauss, "Techniques of the Body," *Economy and Society* 2, no. 1 (February 1, 1973): 70–88.

3. Ibid., 73.

Thus when some forty years later, sociologist Pierre Bourdieu[4] reintroduced the *habitus* as the centrepiece of a theory of practice centred upon the dispositions of the body, few recalled that he was following the precedent set by Mauss—nor did Bourdieu go out of his way to acknowledge the fact. Perhaps it was as well that he did not, since he took the term in a quite different sense. By *habitus*, Bourdieu means a kind of practical mastery—a capacity to improvise conduct strategically attuned to the conditions of its production—that is neither picked up haphazardly, as one might pick up an infection, simply through personal contact, nor deliberately inculcated through precept and prescription. "Every society," Bourdieu writes, "provides for *structural exercises* tending to transmit this or that form of practical mastery."[5]

The silence of explication

Here I want to take issue with the notion of embodied knowledge, by focusing on what I shall call *habit*—the habit of craftsmen, artisans, musicians and scholars. My argument has two components. The first is to show that the habits that enable practitioners to move on in the accomplishment of their tasks are not so much sedimented in the body as generated and enacted in an attentive and kinaesthetic correspondence with tools, materials and environment. And the second is to insist that this is as true of working with words as it is of working with non-verbal materials. To reach the domain of habitual practice, then, does not mean giving up on words, or probing beneath them. But it does mean giving up on the techniques of intellectual distillation that allow words to float to the top, and habits to sink to the bottom, of some imaginary column of consciousness.

"Whereof one cannot speak," concluded Ludwig Wittgenstein in the *Tractatus Logico-Philosophicus*, "thereof one must be silent."[6] Taken literally, this austere pronouncement would consign to an ocean of silence all ways of knowing and doing, all wisdom and experience, save that which can be expressed, linguistically or mathematically, in the form of logically interconnected propositions. Now it was Polanyi's contention, of course, that these expressions amounted to no more than the tip of an iceberg, the overwhelming mass of which lay submerged beneath the waves. His purpose was not to denigrate this submarine dimension but to highlight its contribution to thought and practice. The things, of which we cannot speak, he would say, are also things without which we cannot do. Derived from the Latin *tacere*, "to be silent," it refers in the first place to that which remains unvoiced. Yet voiced sounds need not be verbal, and verbal

4. Pierre Bourdieu, *Outline of a Theory of Practice*, trans. Richard Nice (Cambridge, UK: Cambridge University Press, 1977).

5. Ibid., 88.

6. Ludwig Wittgenstein, *Tractatus Logico-Philosophicus* (London: Kegan Paul, Trench, Trubner, 1922), 90.

utterances need have no explicit propositional content. What are we to make, for example, of a song without words? And what of an utterance the force of which illocutionary—such as a warning, a greeting or a direction? Conversely, of many things that could be stated explicitly we may prefer to keep our mouths shut, for reasons of discretion or security.

So what does Polanyi mean by explication? Two terms keep cropping up in his account of what it entails, namely, specification and articulation (see, for example, Polanyi 1958, 88). To specify means to pin things down to fixed coordinates of reference, to articulate means to join them up into a complete structure. Thus we specify when we plot dots on a graph, enter values in an equation, or type words on a page; we articulate when we join them up: dots with lines. As these examples indicate, explication is not limited to verbal forms; it may also be algebraic or mathematical, or expressed in the peculiar language of symbolic logic. And it may also occur in the conventions of musical notation, where each note is specified by a dot, and where the dots are joined into phrases by ligatures. What do the graph, the mathematical equation, the written sentence and the scored phrase have in common? They are all absolutely silent. Where everything is pinned down and joined up, nothing can move. And without movement there can be no sound. Specification and articulation, while they may be the keys to logical explication, lock the doors to movement, to sound and to feeling. Indeed, *it is the explicit that is tacit*, not the reservoir of habit or know-how for which Polanyi reserved the term. Habit, on the other hand, is turbulent and sometimes noisy. It swirls around in between the points that explicit knowledge joins up, like waters flowing around and between the islands of an archipelago.[7]

Habits, in short, are not embodied; rather the body—in its habitation of a world—is ensounded. Consider what happens, for example, when I play a single note on an open string of my cello. On the score the note is specified by a dot, crossed by a stave line. There it is, silent, lifeless and inert. But as soon as I begin to play, it erupts into sound, into life. The notated point becomes a sustained and vibrant line. This is no simple matter, and to succeed in it my body must be finely balanced and tensed throughout, with an acute awareness of its immediate environs, while my right arm, elbow and wrist undergo a controlled movement to ensure that the position where the bow touches the string, between bridge and fingerboard, remains more or less constant. The sound arises from this complex choreography of highly attentive, mutually attuned movements. Indeed in bowing a note on the cello as in any other task, as even Polanyi acknowledged, we "feel our way forward."[8] Yet in the appeal to the tacit this entire domain of feeling is blanked out; silenced and stilled.

---

7. Tim Ingold, *Making: Anthropology, Archaeology, Art and Architecture* (Routledge, 2013), 111, see Figure 3.

8. Polanyi, *Personal Knowledge*, 62.

Telling in the zone of hapticality

Tacit, in short, is a misnomer for the dimension of habitual practice. By what better term, then, should it be known? I would like to borrow a concept from educational theorist Stefano Harney and literary scholar Fred Moten, namely *hapticality*. It lies, in their words, in "a feel for feeling others feeling you."[9] In effect, hapticality fills the void of the tacit. Where the tacit is silent, the haptic is noisy; where the tacit is embodied, the haptic is animate; where the tacit is sunk into the depths of being, the haptic is open and alive to others and to the world. Nor need this be limited to the sphere of human relations. Other kinds of beings, or other phenomena, make their presence felt in manifold ways, and we should attend to them too.

Does hapticality, then, lie on the far side of speaking, of telling? Only if, with Wittgenstein, we limit speaking to logical expression or, with Polanyi, limit telling to literate articulation. Yet in truth, no words could be spoken, nor could any story be told, without feeling. At this stage of my argument I want to focus on telling, and will return to speaking in due course, when I move on from works to words. I want to argue, to the contrary, that we can tell *all* we know, but only because there is more to telling than articulation.[10] "To tell" is one of those ancient verbs that comes to us already densely packed with multiple layers of meaning. Originally, it was to count or to reckon, as does the teller who tots up the bill, whose modern representative is the accountant. An account rendered in words rather than numbers, however, is a narrative, a story. What, then is the difference between the accountant and the storyteller?

One adds up; the other goes along. Storytellers are wayfarers. It is through having their stories told that novices learn to attend to things, and to what they afford, in the situations of their current practice. Contrariwise, it is because of the resulting feel for things—a kind of intimacy that comes from sharing a life together—that experienced practitioners can tell their stories. The capacity to tell, in these twinned senses, is critical to the practice of any craft, and it is perhaps the principal criterion by which the master can be distinguished from the novice. On the one hand, stories allow practitioners to tell of what they know *without* specifying it. They carry no information in themselves, no coded messages or representations. They rather offer guidance or directions which listeners, finding themselves in a situation similar to that related in the story, can recognise and follow. On the other hand, the feel for things allows practitioners to tune their movements to the ever-varying conditions of the task as it unfolds. This, and not in the practised ability to execute standardised movements with greater speed or ergonomic efficiency, is where real skill resides.

---

9. Stefano Harney and Fred Moten, *The Undercommons: Fugitive Planning and Black Study* (Wivenhoe: Minor Compositions, 2013), 98.

10. Ingold, *Making*, 111.

In both senses, then, craft is a way of telling. It is a way, however, that abhors explication.

In short, haptic telling is a process of what I have elsewhere called "interstitial differentiation."[11] It is a differentiation that proceeds along the way, in a cycle of attention and response. In wayfaring, in playing a musical instrument, in the practice of any craft, decisions have continually to be made: one decides to veer in this direction or that. But while every decision entails a cut, this cut goes along the grain of action rather than across it, splitting it like an axe through timber. This is what skill is about: not imposing form on matter but finding the grain of things and bending it to an evolving purpose.[12]

Vortices of thinking and of sound

All this attention and response, all these decisions, are surely proof that craft practitioners are thinking. Indeed, it has become almost a cliché to say that musicians or craftspeople think with their fingers, with their hands, their wrists, lungs and trunk, indeed with the whole body. But have you ever wondered why we should think that thinking should be silent? Or that it should be invisible? Surely, if thinking is not tacit but as haptic as feeling is, if it is not buried in the body but overflows into the environment, if it unfolds in the telling, then it can be just as noisy. And we can watch it too. The alleged silence of thinking is perhaps the legacy of a Cartesian division between cognition and action that continues to plague much theorising on these matters. For they are perfectly capable of thinking, even of reflecting on what they are doing and of assessing their work, *without ever breaking away from performance*. "Reflection," as anthropologist Anna Portisch writes, "is a constitutive aspect of all levels of practice."[13]

Portisch pitches her critique against many students of craft practice, myself included,[14] who have argued that the frequent need to reflect on progress, or to stop-and-check, is typical of novice practitioners, giving their work a jerky or stop-go character which gradually disappears with increasing mastery of the craft. In this view, the more fluent the practitioner, the less reflective the practice. But from her own study of women's crafts in Mongolia, Portisch concludes, to the contrary, that reflection and assessment are integral to the practices of novices and accomplished craftswomen alike. Learning a craft, she argues, is at every level a process

---

11. Tim Ingold, *The Life of Lines* (Abingdon-on-Thames: Routledge, 2015), 23.

12. Tim Ingold, *Being Alive: Essays on Movement, Knowledge and Description* (Taylor & Francis, 2011), 211.

13. Anna Odland Portisch, "The Craft of Skilful Learning: Kazakh Women's Everyday Craft Practices in Western Mongolia," in *Making Knowledge: Explorations of the Indissoluble Relation Between Mind, Body and Environment*, ed. Trevor H. J. Marchand (Oxford: Wiley Blackwell, 2010), 69.

14. Tim Ingold, *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill* (London: Routledge, 2000), 415.

that is both dynamic and responsive, involving a continual dialogue with one's environment.[15] I am persuaded by her argument, but I still wonder whether reflection and assessment mean quite the same thing for the novice as for the old hand. It seems to me that the difference lies in the extent to which the practitioner has incorporated the tools and materials of her trade, as well as other salient constituents of the environment, into the dialogue itself. True, the old-hand is as thoughtful, as meditative and reflective, as the novice, if not more so. But perhaps she is thinking *with* things more than she is thinking *about* them, letting them in as accessory to her own reflections. Perhaps her thinking is that of a mind that is not confined within the body but that extends outwards to include tools, materials and surrounding conditions, or what philosopher of cognition Andy Clark calls its "wideware."[16] Could the measure of enskillment lie in the distal extension of the mind, radiating outwards from its seat in the body? The answer depends on how we choose to describe the mind.

For Clark, the mind is essentially a computational device that works to produce solutions to problems posed by the environment, on the basis of information received. But this device may include extra-somatic components. A mathematician, for example, may use pencil and notepad to perform a calculation, and a navigator takes up ruler and compass to plot a course. To explain what he means by the extended mind, and by way of analogy, Clark asks us to consider the prodigious talents of a fish, the bluefin tuna. Why, Clark asks, can the tuna swim so fast? The answer is that it couples its own bodily energies to the fluid dynamics of the water through which it swims, setting up eddies and vortices through the swishing of its tail and fins which themselves exert a propulsive momentum beyond any muscular force of which the fish alone is capable. Swimming, then, is not an achievement of the fish alone but of what Clark calls a swimming machine, comprised by "the fish in its *proper context*: the fish plus the surrounding structures and vortices that it actively creates and then maximally exploits."[17] Thus, strictly speaking, it is not the fish that swims, but the fish-in-the-water. Clark's point is that the cognitive machine, in the human case, is extended in just the way that the swimming machine is for the fish.

I am not so sure that even swimming can be understood in such mechanical terms. After all, eddies and vortices cannot exactly be connected up like the wheels, cranks and pistons of an engine, in such a way as to deliver propulsion as a motor effect. They are energetic movements in themselves, as indeed is the fish. To borrow an expression from philosopher Stanley Cavell, the fish-in-the-water—like every other living

---

15. Odland Portisch, "The Craft of Skilful Learning: Kazakh Women's Everyday Craft Practices in Western Mongolia," 71–73.

16. Andy Clark, "Where Brain, Body, and World Collide," *Daedalus* 127, no. 2 (1998): 257–280.

17. Ibid., 272.

being in its proper medium—is a "whirl."[18] It is not an object that moves but the emergent form of a movement. Might the fish, then, offer a better analogy for why the thinking that goes into craft practice *cannot* be understood in computational terms? Perhaps we could say of this thinking, too, that it is a churning of the mind, as it stirs up and is in turn stirred by the sounds and feelings of its milieu. The mind, then, is not so much a computational device as a vortex in the mix. How else can a player armed only with a cello make such an immense and variable sound? Not, surely, because the practitioner's brain, body and instrument, joined together, make up a machine for playing.

In playing the cello, the anatomical unity of practitioner plus instrument gives way to a hapticality of sensory awareness and vital materials. It is for this reason that I believe we should resist the temptation to describe mind, body and world as overlapping circles which, in their enlargement, are inclined to encroach upon or even encompass each other's domains.

The principle of habit

We have come a long way from Bourdieu, and from his understanding of the *habitus* as a set of dispositions that both generate the mastery of the skilled practitioner, and are in turn generated by it, all beneath the radar of conscious awareness. For what we have discovered, on the other side of explicit logical articulation, is not a lack of awareness but *an awareness of a different kind*. It is the awareness of feeling others feeling you—or in a word, hapticality. This explains why craftspeople, absorbed into their tasks, by their own report tend to experience their own presence and movement, and the presence and movement of the persons and things with whom and with which they engage, with heightened rather than diminished intensity. Colloquially, the word we use for this is *concentration*. By this, we don't mean the kind of cognitive processing that delivers solutions for implementation. It is not the operation of a joined-up computational mechanism, whether inside the head or extending beyond it. Concentration lies rather in the affective unison of haptic and kinaesthetic awareness with the movement and vitality of materials. The recognition of this other form of awareness, concentrative rather than cognitive, haptic rather than explicit, allows us at last to resolve a question to which the answer has long eluded us. For there is no doubt that many things we routinely do involve no concentration at all. In principle, automatic operations could just as well be done by machine, and indeed in the history of technology they have often been among the first to be mechanised. The question is: how are we to distinguish such automatisms from the practised mastery of a craft?

---

18. Stanley Cavell, *Must We Mean What We Say? A Book of Essays* (Cambridge, UK: Cambridge University Press, 1969), 52.

You would think, from reading much of this literature, that there is not much difference between touch-typing and performing a Rachmaninov piano concerto. It may be that the latter is a lot more difficult, and takes a great deal of practice that none but the most dedicated musician would willingly endure. In both cases, however, we are led to believe that it is all a matter of leaving the fingers to take care of themselves, freeing the mind for higher things. But if the pianist is truly thinking with his fingers, if his thought flies with the sounds of the keys, if he feels the presence of listeners whose ears stretch to catch every passing sound, and if he and they are truly moved by the experience, then there is all the difference in the world between his performance and—say—that of a player-piano that has been mechanically programmed to reproduce the same piece. And the difference is simply this: the master-pianist's performance unfolds along a way of telling, the machine performance does not. The ossification of telling in the language of embodiment, its reduction to a kind of sediment, has its parallel in the way we tend to speak of habit. It has become common to treat as habits the things we do unthinkingly, and without consideration. They are often regarded as the unwanted detritus of ordinary activity, behaviours that have fallen out of active commerce with the world and become stuck in repetitive patterns that may have meant something once but no longer have significance today. They do not require to be learned so much as unlearned. Usually they are judged to be bad. When did you last hear anyone talking about their "good habits"? And what is most particular to it is the way the practitioner is *inside* the action. Do we make our habits or do our habits make us? The problem arises so long as we are forced to choose between the active and the passive voice of the verb, that is, between what we do and what we undergo. But in his reflections on *Art as Experience*, philosopher John Dewey argued that we would do better to understand habit in terms of the relation between the two. Neither in front of what we do nor behind it, we are in the midst: our doing is also our undergoing, what we do is also done in us. In our intercourse with the world, Dewey explained, we also inhabit the world.[19] Or in a word, we *dwell* in habit. This, perhaps, is as good a definition as any of what it means to practise a craft. A way of telling is also a way of dwelling, of inhabiting. Moreover, it is also a way of using.

Beyond verbalisation and embodiment

For most of us, as we go about our lives, words furnish our principal means of telling. With them, we invite others to gather round, converse with them, join our own life-stories with theirs, attend and respond to what they say and do. Enriched by the patina of everyday use, ever-varying in

19. John Dewei, "Art as Experience," in *John Dewey: The Later Works, 1925-1953, Vol. 10: 1934*, ed. Jo Ann Boydston (Carbondale, IL: Southern Illinois University Press, 1987), 109; cf. Tim Ingold, *Anthropology and/as Educatio*n (Abingdon-on-Thames: Routledge, 2017), 21–22.

texture, they rise up in the gestures of the mouth and lips in speech, or spill out onto the page in the traces of the writer's hand. As philosopher Maurice Merleau-Ponty once put it,[20] they are so many ways we have of singing the world and its praises. We could say that words mediate a poetics of habitation. Yet as we look around, it seems that something has gone seriously wrong in our relations with words. It is as though they have turned against us, or we against them. We routinely hold them to blame for the suppression of feeling, or for failing to account for the authenticity of experience. To get to what it really feels like, we insist, we have to get beneath the words, or behind them. Words, it seems, are no longer our habit, our custom or our dress. Rather, they have become the means by which we dress things up, coating them with a gloss that obscures the truth these things might otherwise tell if left to be themselves. Of course there are still people who use words to plumb the depths of human feeling. But they have become the purveyors of a specialist, and for many an arcane, craft. Instead of inhabiting the world poetically, we have created a little niche in the inhabited world for poets.[21]

Perhaps no contemporary community has developed more of an antipathy towards words than that which principally works with them. I mean the community of scholars, and above all, those scholars who would regard themselves as academics. In the surgery of academic thought it is essential that categorical boundaries are maintained, and it is the job of words to do so: to put things at a distance, to pin them down, to impose a discipline, and to hold an otherwise unruly world to account. This is what they mean by objectivity, and words are the means by which they achieve it.

This is why academic words so often sound neutered, their force annulled by a triple lock of suffixes: *-ise, -ate*, and *-ion*. Thus does "use," for example, become "utilisation." As I have already mentioned, to use something, and be used to it, is to draw it into your custom. Not so, however, with utilisation. For to utilise an object is to turn it to one's benefit while holding it at a remove. It is to deny any affective involvement, or common feeling. The same goes for many other weapons of the academics' armoury. If they never use anything if not to "utilise"; then nor do they say anything if not to "articulate," mean anything if not to "signify," tell anything if not to "explicate." In short, the academic is an articulator of verbal compositions. To articulate, as we have already seen, is to join things *up*, not to join *with* them. It is because of this penchant for articulation that the idea of word-processing, anathema to the writer's craft, found such a warm reception in the land of academia. If words are objects, to be arranged at will, what could be more natural than serving them to a machine for processing?

---

20. Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Colin Smith (London: Routledge & Kegan Paul, 1962), 187.

21. Alfred Gell, "The Umeda Language-Poem," *Canberra Anthropology* 2, no. 1 (April 1, 1979): 61.

The appeal to signification, likewise, is a way of holding the world at a distance. To find what things mean, you only have to work with them. But in a world of signs we never touch anything directly; feeling is interrupted. Signification breaks the link of direct perception, just as articulation breaks the link between hand and word. If meaning is hands-on; signification is hands-off. So it is, too, with explication. It is not enough for the academic to tell of what he knows. It must be explicated, spelled out in a joined-up sequence. Every such sequence is a sentence. For their sentencing of words, however, and the repression of feeling it entails, most academics feel a shadow of guilt. Their tendency, however, is to shift the guilt onto their accessories, onto the words themselves. For having first used words to put things at a distance they then accuse not just *their* words but *all* words of setting up obstacles, of getting in the way of the unmediated relation with lived experience for which they yearn.

The result is the opposition between verbalisation and embodiment, the one allegedly explicit, the other tacit, that so much academic analysis has taken as its starting point. My objective, to the contrary, has been to restore both words and habits, ways of speaking and ways of telling, to haptically. Habits are no more sedimented in the body than words liberated from it; rather, both words and habits are *animate*. They are ways of being alive. Let's not be afraid, then, to meet the world with words. Other creatures do it differently, but verbal intercourse has always been our human way, and our entitlement. Words are human things. But let these be words of greeting, not of confrontation, of questioning, not of interrogation or interview, of response, not of representation, of anticipation, not of prediction. This is not to say that we should all become poets or novelists, let alone that we should seek to emulate philosophers who, when it comes to their worldly involvements, have signally failed to practice what they preach, and for whom neither coherence of thought nor clarity of expression has ever been among their strongest suits. But it does mean that we scholars should work our words as craftspeople work their materials, in ways that testify, in their inscriptive traces, to the labour of their production, and that offer these inscriptions as things of beauty in themselves.

Tim Ingold is Professor Emeritus of Social Anthropology at the University of Aberdeen, and a Fellow of the British Academy and the Royal Society of Edinburgh. Following 25 years at the University of Manchester, Ingold moved in 1999 to Aberdeen, where he established the UK's newest Department of Anthropology. Ingold has carried out ethnographic fieldwork among Saami and Finnish people in Lapland, and has written on environment, technology and social organisation in the circumpolar North, the role of animals in human society, issues in human ecology, and evolutionary theory in anthropology, biology and history. In his more recent work, he has explored the links between environmental perception and skilled practice. Ingold is currently writing on issues on the interface between anthropology, archaeology, art and architecture. He is the author of *The Perception of the Environment* (2000), *Lines* (2007), *Being Alive* (2011), *Making* (2013) *The Life of Lines* (2015), *Anthropology and/as Education* (2017) and *Anthropology: Why it Matters* (2018).

References

Bourdieu, Pierre. *Outline of a Theory of Practice*. Translated by Richard Nice. Cambridge, UK: Cambridge University Press, 1977. https://doi.org/10.1017/CBO9780511812507.

Cavell, Stanley. *Must We Mean What We Say? A Book of Essays*. Cambridge, UK: Cambridge University Press, 1969.

Clark, Andy. "Where Brain, Body, and World Collide." *Daedalus* 127, no. 2 (1998): 257–280.

Dewei, John. "Art as Experience." In *John Dewey: The Later Works, 1925-1953, Vol. 10: 1934*, edited by Jo Ann Boydston. Carbondale, IL: Southern Illinois University Press, 1987.

Gell, Alfred. "The Umeda Language-Poem." *Canberra Anthropology* 2, no. 1 (April 1, 1979): 44–62. https://doi.org/10.1080/03149097909508635.

Harney, Stefano, and Fred Moten. *The Undercommons: Fugitive Planning and Black Study*. Wivenhoe: Minor Compositions, 2013.

Ingold, Tim. *Anthropology and/as Education*. Abingdon-on-Thames: Routledge, 2017. https://doi.org/10.4324/9781315227191.

———. *Being Alive: Essays on Movement, Knowledge and Description*. Taylor & Francis, 2011.

———. *Making: Anthropology, Archaeology, Art and Architecture*. Routledge, 2013.

———. *The Life of Lines*. Abingdon-on-Thames: Routledge, 2015. https://doi.org/10.4324/9781315727240.

———. *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*. London: Routledge, 2000.

Mauss, Marcel. "Techniques of the Body." *Economy and Society* 2, no. 1 (February 1, 1973): 70–88. https://doi.org/10.1080/03085147300000003.

Merleau-Ponty, Maurice. *Phenomenology of Perception*. Translated by Colin Smith. London: Routledge & Kegan Paul, 1962.

Odland Portisch, Anna. "The Craft of Skilful Learning: Kazakh Women's Everyday Craft Practices in Western Mongolia." In *Making Knowledge: Explorations of the Indissoluble Relation Between Mind, Body and Environment*, edited by Trevor H. J. Marchand, 62–69. Oxford: Wiley Blackwell, 2010.

Polanyi, Michael. *Personal Knowledge: Towards a Post-Critical Philosophy*. London: Routledge and Kegan Paul, 1958.

Wittgenstein, Ludwig. *Tractatus Logico-Philosophicus*. London: Kegan Paul, Trench, Trubner, 1922.

CPCL Vol.2 no.2 | 2019

CPCL
EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES

MAIN SECTION

Traces for an Idea of Project: Discussing the Contribution of Richard Sennett, Tim Ingold and Bruno Latour

Ivano Gorzanelli — University of Bologna (Italy) — ivano.gorzanelli3@unibo.it

ABSTRACT
The purpose of the text is to show the reader how a specific thought movement, represented by Richard Sennett, Tim Ingold and Bruno Latour, has critically discussed and de-constructed the same basis of projecting (i.e. designing) according to 20th-century logics.

KEYWORDS
Project; Making; Ingold; Sennett; Latour.

PEER REVIEWED
https://doi.org/10.6092/issn.2612-0496/9645
ISSN 2612-0496

Intention

The purpose of the text is to show the reader how a specific thought movement, represented here by Richard Sennett, Tim Ingold and Bruno Latour, has critically discussed and de-constructed the same basis of projecting (i.e. designing) according to 20th-century logics.

Richard Sennett starts from the historical separation between la *cité* and la *ville* writing a contribution that helps us understand the relationship between function and form, urbanism and social spontaneity. In search of porosity looking for what today is the possible "open city," his proposal investigates how the citizens can be involved in the *cité* and how la *ville* can facilitate an active and competent behaviour. The purpose of this author is to put together these two spheres and retrieve an idea of open city that gets over the dichotomies, that hit urbanism in the 20th century. On his part, Tim Ingold has come up with a very radical research on the meaning of materials and the need to reconsider in terms not only cultural the activity of the world as a *process*. Now, the question which is interesting for our research about the project is: "Why should people think with artefacts alone? Why not with materials? And ground, mountains and streams, and other living beings?" Ingold talks again about the separation between material and form by proposing a morphogenetic relationship not determined by a *chaîne opératoire*, but by a movement, a dance instead. Bruno Latour proposes the question in a different way: his interpretation, focused on a re-interpretation of the concept of modernity, aims to rethink on an epistemological level the "ideology of nature" itself and its scientific bases. The research of a new political ecology should have as premise the "end of nature" and should be characterized not as crisis of nature, but as crisis of objectivity. After the season of the neat borders, well-known properties, randomness, it is time to deal with new objects, reticular and rhizomatic. Latour helps us rethink the relationship between the interior and what "surrounds us" by substituting the hard cores of the *essence* with a thousand tentacles and connections, passing from the "objects" to these "almost objects." This essay is an illustration of these authors' position and it underlines the loss of meaning and centrality of some concepts and methods of understanding and representing reality. The question, the very subject/materials of projecting, is the stability and solidity of the ideas: soil, materials. Is the mind a mirror of the world? Our ideas about the reality do not represent what lies "out there." Like Karen Barad wrote, what we need is not a theory of cultural representation or cultural forms, but a theory that "allows matter its due as an active participant in the world's becoming." It is a methodological, but at the same time an ontological problem. The conclusions, even if they are temporary, are focused on the images and ways of thinking that the authors give us to make us understand how designing today means a different position or cognitive sensibility; a different sensibility that *corresponds* more to

the reality and movement that surround us. The reality ceased to be the theatre of permanence, where men used to show their creativity, but it started to react, or, it is better to say that it has never ceased to react. The text, therefore, tries to investigate some radical results of the reflections by Sennett, Ingold and Latour, asking how we can give readability to a living material which lives in-between what Tim Ingold defines as an "ongoing process." It is important to note that these authors offer us not only a theoretical way by which to think about nature or the "nature" of object, but also recommend to seek beyond above a new way of perception. For example, both Sennett and Ingold discuss the role of designer in terms of "self-effacing," a kind of *modesty*. This is not only a rare virtue, a moralist approach, but more specifically a topographic question, an ontological question about materials that becomes a question of position, more precisely a *political position*. The radicalism of these position will help us to find a critic of the idea itself of project, that has the merit to organise a double movement: deconstruction and reconfiguration of the theoretical bases of drawing.

Richard Sennett on designing (membranes)

In the third and final piece of the trilogy dedicated to the technical skills we use in everyday life, Richard Sennett has identified the creation of membranes as the most interesting challenge for the designer today starting from an ecological difference. We will also consider later the model that inspired Sennett while defining the figure of the designer. What is most important now is to clarify what we mean by this "ecological simile," what the membranes can do and, as a consequence, what "to design" really means.[1]

Borders represent, regardless of their volume and their impact, a porous edge, an element where different groups interact. Boundaries, on the other hand, can be walls, traffic flows, buffer zones where the different and many forms of the city are delimited and divided. The contemporary metropolis seems to take the shape of enclosed and close controlled residential neighborhoods, which set precise limits. The city that, like an octopus, absorbs spaces and reproduces its own security guarantees is the perfect model of this idea. A practical example is Delhi, the Indian capital city.[2]

Sennett, however, has a different idea in mind, the idea of an open city, a more spontaneous city than the one ruled by a centralized planning: a city where the mixture and melting of many social classes, migrants, citizens from different backgrounds and tourists can generate social relations.

1. Richard Sennett, *Building and Dwelling, Ethics for the city* (New York: Farrar Straus e Giroux, 2018), 222.

2. Ibid., 220.

The metaphor of the membrane gives greater density and coherence to the opposition between boundaries edge and border. In Sennett's opinion a membrane, like a city, must work by combining porosity and resistance: it must be able to make something come out of itself and, at the same time, it must allow something to enter it. This is one of the first features that the act of design should have: it has to be able to embrace the membrane form as an element that stays and remains within the paradox of generating "forms" while creating disorder at the same time. If we wanted to theorize this movement (or trend), we could say that the highest point in the capacity of the city-system lies precisely on the edge between order and disorder.

Through a series of historical examples, case studies and personal reflections, Sennett leads the reader to the understanding of design as an activity that does not dictate or impose anything on the citizen, but stimulates the creation of common tasks instead. The reference goes to the Dutch urbanist and architect Aldo van Eyck, whose interventions within the urban context produced what Sennett calls "liminal edges": transitional moments, places in which the city connects and binds together poor and rich neighborhoods, workplaces and leisure/recreational areas.[3]

It is not just a matter of linking parts together and bringing citizens together, but a problem to modify their reality. The liminal and transitional moments actually mean to force, to put pressure and stress for a metamorphosis of the urban pattern. Metamorphosis precisely means transforming forms according to logics that consolidate and give meaning to the common living. While planning, the claim for a too precise and accurate definition and organization is what will certainly be questioned and debated. Urbanism has a lot to learn from poor people and the way they are forced to work with incomplete forms: the flexibility and synchronicity of places will have to be protected and guaranteed so that too detailed and closed forms will soon become obsolete. Against the idea of places purely prescribed for preordained, standardized individuals, Sennett is a supporter of a reflection that, paradoxically, makes reference to a precise form while actually denying it, because he recognizes its own possible distortions. The creation of "type-forms" is a possible solution to the inevitable death of urban and architectural forms when they become too "finished." To vary, to modify, to replace: these are the qualities and pros of open type-forms that inspire modifications, improvisations, new and more effective activities.[4]

Sennett defines himself as a philosophical mind and we can add that his peculiar argumentative ability also comes from a meaningful use of images, similarities, parallels and examples not always centered and precise but certainly fruitful. Some of the examples he uses in order to help us better understand his idea of "project" are his images of the cultivated

3. Ibid., 224.

4. Ibid., 227.

field and the planting season, as well as the idea of the musical score. In each of these images lies the idea of the city as a material, open, paradoxical reality, suspended between the design ideas (with their cultivated and artificial aspects) and growth and improvisation (with their more spontaneous side). More practically, if we examine the previously mentioned examples: the seed thrown by the farmer does not sprout according to a precise and predefined planning logic, it often follows different timing and ways. The same thing happens with musical variations on a theme, that lead us to better understand the theme itself and to interpret it differently. The metaphor that probably can help us better understand this conceptual itinerary is the organic one: in Sennett's thought the city cannot design itself exclusively through an ordered set of functions and distances, but it breathes, it expands and shrinks, it is made of exchanges with the external world and tensions at its own borders. The city changes by modifying itself. The land, and more precisely the image of a cultivated field, gives us the idea of something that combines intentionality and spontaneity, naturalness and cultural enterprise. To this extent tacit knowledge becomes essential, crucial. "Tacit knowledge" means something that cannot be spread or instilled through a procedure and that touches our knowledge from within the realties we frequent: the atmosphere.[5] It is the atmosphere of the places that gives us back the ability of these same places to host heterogeneous and non-fixed realities. In his texts on technical abilities Sennett refers constantly to the ability to involve side and peripheral visions of the places so that we can grasp their capability to generate sociality, more than their formal aesthetic qualities. The kind of knowledge that the designer must then possess is actually something broad and differentiated, since he or she must be able to respond to the metamorphosis as a principle of adaptability and ability to see from within.

So this is the crucial point: who inspires Sennett while outlining the features of the designer? As we can deduce from the considerations just made, the artisan is his inspirational source. In this figure Sennett finds some of the peculiar characteristics that also a good designer must possess: he owns a "physical," concrete experience and he generates knowledge after diving into the matter.

Just as the designer must be able to know from within the fabric of the city and the places he wants to modify, so the artisan must possess the ability to relate to his own materials from within. Sennett says that technical intelligence develops through imagination and similarly the designer's ability must be to imagine the life of cities as they change: metamorphosis and adaptability are essential features of the craftsman's work that the designer must have, too. The work of the craftsman contemplates the error and actually needs it, because only through

5. On the concept of *Sensory Thought, and the role of Craftsman: Juhani Pallasmaa, The Thinking Hand. Exsistential and embodied Wisdom in Architecture* (Hoboken, NJ: John Wiley & Sons, 2009); André Leroi-Gourhan, "Le Geste et la Parole (Paris: Albin Michel, 1964).

experience he can improve his own abilities.[6] At the same time the relationship between failure and successful work should guide the experience of the designer. For both figures not only the final result is important but it is also important the sense of variation and the action showing the form without necessarily completing it. The job of both of them is represented by the dialectic between conclusion, completeness and openness. In the path that Sennett outlines to describe the sense of the craftsman's work, the most significant part, to us, is represented by the case of Erin O'Connor.[7] Mrs O'Connor is a glassmaker and philosopher who developed some considerations on the meaning of making, starting from her personal experience of producing a glass suitable for Barolo wine. What O'Connor had to learn while trying to produce a glass worthy of this name was above all the movement, the rhythm: every time she started the acting process, the practice, she had to modify her body quality, her moving as an object. She had to develop a better awareness of her own body in relation to the rest of the environment. In doing this, she had to improve her ability to imagine and guess where the material she was dealing with was going, what changes it underwent, what relationship it had to establish to make this relationship fruitful, and herself with it. As a result, she understood that it was not a matter of relationship, but of convergence instead, a meeting point: a game of resistance and adaptation in which she developed a body awareness in the relationship with the glass paste.

Both artisan and designer must extend their ability on movement and rhythm to their hand and to their eye as well. In other words they must produce a sort of "physical/concrete anticipation" by imagining where the material is going and which directions it will take. This ability is at the same time "corporeal/physical,"[8] because it is connected to the handcraft, and intellectual, because it is linked to the production of ideas through the eye. Because of that, this ability itself brings us back to the image of the cultivated field: it is a matter of working a material trying to understand its evolution, by considering the intents as well as approximation and spontaneity. The shape that the craftsman produces emerges from the symbiotic relation between the body of the craftsman and the materials. It is the story of this relationship that conveys a shape to the city. Its history, its social fabric, its movements and spaces, connect to the designer's work creating new metamorphoses, new liminal spaces, new forms of sociality. Only here, Sennett says, the city lives and reproduces itself. What the craftsman needs is the same quality needed by the street and project: modesty as position.

---

6. Ibid.,162.

7. Richard Sennett, *The Craftsman* (London: Allen Lane, 2008), 173–5.

8. Ibid., 175.

Tim Ingold: the design as an enigma and tension

Tim Ingold has been reflecting for more than twenty years on the meaning of making and the relationship between producing, designing and knowing.[9]

Ingold thinks that knowledge does not come from our distancing from the world by objectifying it, but it comes from the fact that we are and live inside the world. There is no difference between participation and observation: we are the travelling companions of all things and beings that are beside and around us. What is the relationship between producing and thinking? Artisan allows knowledge to develop starting from our practical and observational engagement with things and beings that surround us: this kind of art is called "art of inquiry."[10] And what does this art of inquiry or investigating consist of? It basically means two different but deeply related things: following and responding. In the art of investigating we do not represent the world, nor do we simply describe it. We rather open our perception to what happens, to facts, and this way we try to respond to it in a relationship of *correspondence*. Ingold therefore focuses his attention not on the finished product but on the movement, on how things and projects happen and take shape. It is precisely in this space that he criticizes our habit of thinking about "producing" as a project.

According to an established practice, "to plan" means having an idea in mind, to which follows the research for suitable materials to put it into practice. The planning ends when the chosen materials take the desired shape. The basis of this vision is the hylomorphism, the doctrine that sees in the act of doing the application on an inactive, motionless reality, created by the matter of theoretical and conceptual contents in our mind; Ingold's challenge is instead to rethink the act of "producing" as a growth process.[11] This means seeing in the author (the designer) a participant observer in a world made of active materials. During the creation process, the author joins his forces with those active materials, gathering them, separating them, making a synthesis in the anticipation of what could derive from it.

Ingold suggests a radical change in our idea of producing which also anticipates and informs the idea of designing: if we read the production act as a process where forces and materials merge rather than the transposition of a mental image to an object, the coordinates of our process change and become morphogenetic, while the distinction between artifact and organism becomes much fainter and subtler. From this perspective the form is not imposed on the surrounding reality but it emerges from the

---

9. Two of the most important contributions are: Tim Ingold, *Being Alive: Essays on movement, knowledge and description* (Taylor & Francis, 2011); Tim Ingold, *Making: Anthropology, Archaeology, Art and Architecture* (Abingdon-on-Thames: Routledge, 2013).

10. Ingold, *Making*, 6.

11. Ibid., 21.

relationship between forces: the materials with their activity and resistance, the environmental conditions, the hands of the craftsman, his tools. The materials, whatever form or formal destination they have in a precise moment, are substances fundamentally in progress that never stop in any established form.[12]

As Karen Barad writes, materials are like an ongoing story where the main interest is more on the act of becoming rather than the one of being. A response of the materials comes from our gestures in given conditions.[13] We ask and they respond according to a logic, not following interaction but correspondence. In this sense, each material is a line of thought and a set of potential responses and trajectories. What does "build" mean, then, and what is the meaning of "planning" with reference to creating a building? Ingold actually addresses the problem of designing and building in the fourth and fifth chapter of his essay on *Making*. It is a common idea in the professional sector of architects that much of the creative work of making a building is represented by the design, where the next phase of realization is nothing but putting into practice the ideas that the designer has thought of. The idea that guides the discipline seems to be "permanence/continuity." To this extent Ingold undertakes a study on the relationship between carpenters and architects, getting to the conclusion that in the past intellectual work was essentially indistinguishable from manual work (the work on a construction site). However, the two activities have been separated from a certain moment and as a consequence the architect has become a much more theoretical figure, able to organize the design guidelines. The carpenter and the bricklayer, instead, become the symbol of someone who puts into practice what the architects think.

The thought represented by Vitruvius and Leon Battista Alberti promotes the idea of a design that takes care of developing the features of a building and its external appearance in an early and independent way. Ingold points out that in many European languages the verb "to draw" corresponds to the verb "to design." At the same time, this shows how during the Middle Ages the figure of the craftsman/carpenter owed his mastery to learning directly on working sites: the craftsman did not use to acquire theoretical principles to be put into practice later. It was a kind of constructive geometry. This digression is necessary in order to understand—and to ask ourselves—whether in the past the construction of majestic and important cathedrals or buildings required or not defined and detailed projects. The answer obviously remains pending, but Ingold's conclusion is fundamental for our discussion: in the end there was no radical distinction between the act of drawing and that of building. The design was not separate from

12. Tim Ingold, "On building a House," in Ibid., 47–59.

13. Karen Barad, "Posthumanist Performativity: Toward an Understanding of How Matter comes to Matter," *Sings* 28, no.3 (2003): 801—31, https://doi.org/101086/345321. A different point of view, criticized by Ingold is represented by: Lambros Malafouris. *How Things Shape the Mind: A Theory of Material Engagement* (Cambridge: The MIT Press, 2013).

the building and bricklayers and craftsmen who intervened on site were both designers and executors. Here we find the quality of Ingold's work: his purpose is to unite ontological, perceptive and epistemological reflections in a unitary perspective. His vision re-evaluates the materials and our involvement in reality, and it allows us to reconsider the difference between the artifact and the organic, moving it to a less certain and more liminal area. At the same time, by scattering subjectivity into the flow of matter, he prevents us from crystallizing the organized reality of ideas and concepts. The result is the impossibility of recognizing the project as a pure intellectual emanation, independent from the flow of becoming. In the relationship between design and realization, Ingold uses the insights of the geographer and sociologist David Turnbull.[14] In Turnbull's opinion the topic of the project explains "too much and too little at the same time," because each project needs workforce that operates and that cannot follow the coherence and rigidity of imposed rules. Turnbull develops an interesting parallel between the construction of a cathedral and a modern, advanced research laboratory, getting to the point that it is not the initial project (however detailed and precise) that determines the final form, but the convergence, as in a laboratory, of different contributions, coordinated forces with different, localized and contingent timings. It is not a matter of responding to predefined conceptual lines but of solving problems as they arise.[15] It is a question of meeting Richard Sennett once again, with his definition of the artisan as someone who looks ahead, not in the sense of looking at the present towards a given future, but looking inside the future by opening a path and improvising a way within it. The author must bring together the set of pieces that gradually fit together. Individual pieces need what Ingold calls an *empathic involvement*, so that they begin to match and correspond. The question, which at this point is certainly rhetorical, could be: if the world keeps on evolving and changing, what difference is there between designing and building? Ingold's proposal is to try to rethink the very idea of design. If we think of drawing as a transcription of a mental image we remain in the consolidated tradition, but if we think of drawing as a thread *intertwining* in the fabric or like carving a stone, everything changes. The lines of the drawing in this case would no longer be needed to connect fixed points, but to indicate a possible movement. Through this vision, designing has to do with the suspension of the final goal and it becomes an anticipatory action that in some way "regulates" the ever complex relationship between imagination and resistance (of materials and the world). To sum up, designing means to remain inside this tension by producing something.

---

14. David Turnbull, *Mason, tricksters and cartographers: Comparative Studies in the Sociology of Scientific and Indigenous Knowledge* (London: Psychology Press, 2000). In the first part of *Making*, Chapter 2, *Materials of life*, Ingold quotes also an important contribution in this direction: Gilbert Simondon, *L'individuation à la lumière des notions de forme et d'information* (Grenoble: Editions Jérôme Million, 2005).

15. Ibid., p 53–87.

The anticipatory view that both Sennett and Ingold offer in their contributions raises the question of the position of the designer: in order to understand this, it is necessary to lower ourselves to the level of things and merge with them somehow. It is not a matter of materialism, but of the search for a perceptive sensibility and an epistemological proposal at the same time. The things we talk about here are not just objects but practices, subjectivities, materials. The change of the point of view inevitably matches the change of epistemological perspective, as the question is exactly the following: what does a designer need to design? To answer this question, first of all we must adopt the correct perspective, that is to say: we must dismantle the idea that in order to build something it is necessary to proceed through linked and hierarchical activities. Humans have always used patterns and geometries in their activities, but what Ingold and—partially—Sennett help us understand through their investigations is that this activity of cognitive organization that produces intellectual categories and patterns does not lie in our mind, but it lies in things. Here "things" mean the set of materials in relation to forces. The geometry that the inhabitants of the city often use is the one of their own bodies and their own creations, just as artisans use their hands and the morphology of the proportions of their body to produce forms. The scheme is to be found at the street level. Once again we notice how the form is scattered: it seems to escape from where we have always thought: we could find it inside our mind or in the materials, then. To be more precise, the form is actually in our mind, but it seems to have been embodied and organized with materials, with the passing of forms and life. What we will call form, or result of a project, is the never ending crystallization of an uninterrupted flow of expert practices that follow one another. Where should the distinction between form and matter lie in this vision? It should lie nowhere, of course, since in a world in progress in which we are part and in which materials with their specific qualities move, the fundamental relationship of the practice called "project" is between forces and materials.[16]

Bruno Latour and the objects

In his extensive investigation of the foundations of modernity, Bruno Latour reflected on the meaning of doing and on the concept of project.[17] While doing so, he did not focus much on the project as an architectural or design practice, but as an epistemological relationship of the objects with the categories that we use to interpret them.[18] We want to follow this path—a quite insidious one, not easily and precisely circumscribable—because in Sennett, Ingold and Latour's reflections we witness a change

16. Ingold, *Making*, 128.

17. Bruno Latour, *Nous n'avons jamais été modernes* (Paris: La Decouverte, 2006).

18. Bruno Latour, *Cogitamus. Six lettres sur le humanités scientifiques* (Paris: La Decouverte, 2010).

that concerns especially what we must and can consider in the project and in the action, i.e.: things, their status, their definition and their activity. In fact, Latour's refined research is not directed towards a search for a new system of values that preserves the inviolability of Nature in its objectivity, made up of incontrovertible units to which we will oppose our practices and our values.[19] The research instead expresses a critique of the very epistemological foundation of our knowledge. Latour questions our own project, modernity, and consequently our doing. He does this by inviting us to abandon objects without risk in favour of attachments at risk: if in the former we found sharp edges, a precise essence and the set of laws of causality such as efficiency, profitability and truth, in the latter—objects provoking a crisis in the system that until now has represented them—we do not have clear boundaries between the hard core, an essence, and what surrounds them; on the contrary, these new objects form rhizomes and they are reticulated. In these ruffled products, according to Latour's expression, we find the clearly visible implications of the "making." Producers are easily recognizable, everything becomes compromised and involved considering that the act of producing has become an integral part of their definition since the beginning. If the first objects seemed to belong to a pure universe of essences unrelated to production, the latter are tentacular and generate knots and twines. These are almost objects, maybe they are *things*. Latour directs us towards an objectivity that no longer distinguishes between the social world and the world of nature. Then the whole nature is made of objects at risk that can no longer be released from the unexpected consequences that they will produce even at great distances and in different periods. In other words, these objects can no longer be naturalized. Moving from the certainty of the separation between things and people to the uncertainty of relationships, according to Latour we should deal with the myriad of dirty and intertwined relationships. The risks are no longer countable, the consequences not so predictable, the dispersions not only possible but certain.

What remains of the idea of project? Membranes, ruffled objects and meshwork

Although with a different vocabulary and with significant conceptual differences, we can agree that Latour, like Ingold and Sennett, re-discusses the dual status of reality, or the division between subjects and objects. Epistemological, ontological and anthropological investigations contribute to the possibility to overcome this disabling dichotomy, that is unable to explain the thousand turns and diffractions that our making produces. Released from the idea that there is a motionless reality with stable laws just waiting to be represented, we can therefore make a brief statement. In each of the abovementioned points of view, designing seems to meet

19. Bruno Latour. *Où atterrir? Comment s'orienter en politique* (Paris: La Decouverte, 2017).

a dissociation similar to what Latour finds in political ecology. In these reflections there seems to be a certain distance between theory and practice. Where does this fracture come from and how is it consumed? Sennett conducts his inquiry through the often personally documented exposition to failures, i.e. ideas that seemed strong at the beginning but that turned out to be big disappointments in the end. Sennett's research is led in the field of encounters with life in its most real and disordered form. Every limit, fixing and abstraction is punctually knocked down or exceeded. The wisdom that lies in the act of building and living, along with the intelligence of the hands, seems to be the strongest ally of the designer. Sennett invites us to imagine, with the people who will live in those places and through a political use of the ecological metaphor of the membrane, a project idea that physically moves more and more away from the designer's theoretical idea. He wants to stay at the street level without giving up the idea of project and planning: porosity concerns both the relationships between individuals and groups and the relationship between materials and individuals. Ingold as well seems to be moving away from the theory of the project to make us reflect on the need to consider our own experience as a growth process, where the designer is within a world of active materials. The craftsman joins forces with materials and tries to anticipate what could arise, according to a much humbler point of view than the one that sees the great designer stand aside and impose his preconceived forms to the world. In Ingold's world, an extension of cognition substitutes the primacy of the gaze. Things, here conceptually different and separated from "objects," act with us and through us. Also in this case we see the figure of the designer expanding beyond traditional boundaries, losing at the same time the centrality that made the project the point of departure and arrival of each making. If we look at a design line intertwining to form unstable ties and frames, we should therefore rely on the matter-flow, on the thought that doesn't think of or with the body, but from the body. If until now we have thought of the project as something that encompasses and incorporates shapes and spaces, where the fundamental relationship that guided us was the one between people and things, today we should think of our own body; even the body of the project, like "a thing." Similarly to Sennett, the metaphor also seems to take an ecological turn: even if people, the bodies, are to be considered active things in a context of active materials, both bodies and things need an exchange with the outside to survive and be preserved. Ingold asserts: as we must look after a vase in order to have it resist metamorphosis and dissolution, so a body must be supported and fed. Things exist in opposition to the subjects in a stable and prefixed world, the world well represented by abstract geometries; in reality they are already united by their external appearance to the productive processes, they are in need of attention, they are enmeshed in the social, exactly as Latour describes the matted, tentacled, rhizomatic objects (almost objects). Just as Sennett's membrane breathed by attracting something to itself and expelling

something to the outside, so things and bodies breathe and change in a continuously unfolding field of forces. Sennett and Latour show us from different points of view the intrinsically political quality of the natural order and at the same time they seem to represent the most evidently political part of Ingold's research.

To sum up this short path we went along, the question we should ask ourselves is: what remains of the project? Indeed, many of the conditions that inspired at least theoretically its feasibility and possibilities seem to have disappeared. On different but almost complementary levels, in fact, the authors mentioned here do not operate a generic deconstruction of planning, but undermine its foundations on an ontological, practical, epistemological and, in the end, political level. This is even more interesting because this subtraction of land does not involve new theories or technology, but "making" itself. It is the investigation of the requirements for the act of "doing," of its very nature, of the extensiveness of the mind, of the intelligence of the hand, of the fundamentals of knowledge and of the impossibility of distinguishing between artefacts and craftsmen that led the project to dissolve. The world that seemed designed until recently and that in fact needed to be outlined in detail does not seem to have the same boundaries as before. It is simply inaccurate to offer the image of a world assembled in blocks or procedures. In this sense, Ingold offers us a further image: the world is not a network of meanings, where each line establishes a relationship between joints and points of arrival, but it looks more like a quilt, a *Meshwork*,[20] where irregular parts are held together by stitching, tangles, especially woven lines that do not have and end and stretch elsewhere. The lines Ingold talks about do not represent anything, they do not connect, they do not draw outlines. The lines stop being geometric constructs and delimiting forms because they are ruled by movement and growth. Membranes, strange ruffled objects and quilts. These images all together lead us to an idea: the world that helps us interpret these authors, the world with which they invite us to cooperate and work, each of them from their own perspective, is no longer comprehensible through optics but only through a haptic, tactile, more tangible and practical perception. What will a project be then? Perhaps we can draw a brief and minimal conclusion from the set of images and reflections of Sennett, Ingold and Latour: the world that awaits us will be designable if we are able to feel it, if, despite the many defeats and evidence, we will find a different kind of subjectivity, maybe a more careful, more sensitive one.

20. Ingold, *Making*, 132–3.

Ivano Gorzanelli was born in Vignola, Modena. He holds a PhD in Philosophy (2006) with a dissertation on Schiller, Nietzsche and the aesthetic education of man. Currently, he is a PhD candidate in *Architecture and design cultures* at the University of Bologna. He has published several articles in Italian and international reviews and he took part to research groups working on cultural memory and the city. Today, his work focuses on the concept of morphology and the relationship between lines and forms in the contemporary reflections of the Scottish anthropologist Tim Ingold. He is also interested in the early 20th-century German culture in the work of authors like Walter Benjamin and Siegfried Kracauer

References

Barad, Karen. "Posthumanist Performativity: Toward an Understanding of How Matter comes to Matter," *Sings* 28, no.3 (2003): 801–31, https://doi.org/101086/345321.

Ingold, Tim. *Being Alive. Essays on Movement, Knowledge and Description*. Abingdon-on-Thames: Routledge, 2011.

———. *Making. Anthropology, Archaeology, Art and Architecture*. Abingdon-on-Thames: Routledge, 2013.

Latour, Bruno. *Nous n'avons jamais été modernes*. Paris: La Decouverte, 2006.

———. *Politiques de la nature. Comment faire entrer les sciences en démocratie*. Paris: La Decouverte, 2004.

———. *Cogitamus. Six lettres sur le humanités scientifiques*. Paris: La Decouverte, 2010.

Pallasmaa, Juhani. *The Thinking Hand. Existential and embodied Wisdom in Architecture*. Hoboken, NJ: John Wiley & Sons, 2009.

Sennett, Richard. *The Craftsman*. London: Yale University Press, 2008.

Sennett, Richard. *Building and Dwelling. Ethics for the City*. London and New York: Penguin Random House, 2018.

David Turnbull. *Mason, tricksters and cartographers: Comparative Studies in the Sociology of Scientific and Indigenous Knowledge*. London: Psychology Press, 2000.

Leroi-Gourhan, André. *Le Geste et la Parole*, Paris: Albin Michel, 1964.

Malafouris, Lambros. *How Things Shape the Mind. A Theory of Material Engagement*. Cambridge, MA: The MIT Press, 2013.

Simondon, Gilbert. *L'individuation à la lumière des notions de forme et d'information*, Grenoble: Editions Jérôme Million, 2005.

CPCL Vol.2 no.2 | 2019

EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES

MAIN SECTION

First Exploratory Geographical and Social Maps of the Maker Movement

Massimo Menichinelli — RMIT University (Australia) — massimo.menichinelli@rmit.edu.au
Alessandra Gerson Saltiel Schmidt — IAAC | Fab Lab Barcelona (Spain); AGS Invest (Brazil) — alessandra@agsinvest.com

ABSTRACT

The Maker Movement emerged in the last decades through a mix of both bottom-up and top-down initiatives, promotions, communities and companies, informal experimentations and rigorous research projects. The result is a global system of design and making actors localized in community places of Maker Laboratories such as Fab Labs, Makerspaces, Hackerspaces, DIYBio Labs, Repair Cafes and so on. This contribution explores the first maps of the Maker Movement in terms of geographical distribution and of architecture of social networks of its Maker Laboratories and proposes a specific data analysis for each of these two directions. This article draws an overview of the social, local and global nature of the Maker Movement and of its laboratories, with the overall aim to provide spaces for democracy, participation and citizenship.

KEYWORDS

Maker Movement; Geographical Distribution; Social Network Analysis; Mapping; Community.

PEER REVIEWED
https://doi.org/10.6092/issn.2612-0496/9640
ISSN 2612-0496

1 Introduction

The development and application of digital technologies have already been in expansion for several decades, with relevant social and economic impacts. The Dotcom bubble was a clear example of the extreme enthusiasm towards such technologies, a phenomenon that has probably never completely disappeared[1] since the rate of digitalization, datafication and financial investments and economic impact has not decreased. However, the explosion of the bubble also triggered a backlash against an innovation focusing only on the digital dimension, showing the dangers of forgetting the physical, local and making dimensions of innovation.

An example of such newly-found interest can be found in the Maker Movement, which emerged in the years immediately after the Dotcom bubble. The start of the Maker Movement is usually associated with the launch of the MAKE Magazine by Dale Dougherty in 2005, conceived with the goal of promoting technology, creativity and fun.[2] Since the beginning, the term was chosen to be as broad and appealing as possible, shaping a global community, a movement, and a market at the same time. The Maker Movement emerged then through a mix of bottom-up initiatives and top-down promotions, communities and companies, informal experimentations and rigorous research projects, resulting in a global system of design and making actors. The social and local dimensions have always been a key trait of the movement, for example in collaborative efforts such as local events (Maker Faires, for example) and in laboratories that provide access to digital fabrication technologies: Fab Labs, Makerspaces, Hackerspaces, DIYBio Labs, Repair Cafes, Sewing Cafes and so on.

If the Maker Movement is particularly relevant for mixing digital and analog, global and local, competitive and collaborative issues through a social movement, how could we understand them? How can we move away from talking about the social and local dimensions of the Maker Movement as one-dimensional points on a vague map, and move towards a more nuanced, layered and complex understanding of its architecture? This article explores these questions. It reviews the first maps of the Maker Movement, its geographical distribution and the architecture of social networks, drawing an overview of the social, local and global nature of the Movement and its laboratories. The overall aim is to understand where and with which social structure the Maker Movement is distributing spaces for democracy, participation and citizenship. This contribution explores the general research question (RQ0): how can we design maps of the Maker Movement? This broad research question is operatively organized into two sub-questions:

1. Ben Geier, "What Did We Learn From the Dotcom Stock Bubble of 2000?," *Time*, March 12, 2015. Accessed January 21, 2020, http://time.com/3741681/2000-dotcom-stock-bust/.

2. The Blueprint, "An Interview with Dale Dougherty," The Blueprint, May 13, 2014. Accessed June 14, 2016, https://theblueprint.com/stories/dale-dougherty/.

1. (RQ1) How can we map the geographical distribution of the Maker Laboratories?
2. (RQ2) How can we map the social structure of the Maker Laboratories?

Ultimately, addressing these research questions could improve our understanding of where makers are and how they are connected, in turn contributing to more refined definitions of the Maker Movement. Maker Laboratories are the main focus of this research, considered as a proxy of both the Maker Movement, being largely constituted of laboratories and because makers often meet in such laboratories. This article adopts a mixed methodology for each question, consisting of a literature review of previous analyses, and a data analysis of existing datasets from online platforms.

After this introduction (1), the next section (2) details models that can be used as conceptual maps for navigating the complexity of the Maker Movement and for understanding how to best map its distribution and structure. The geographical distribution of Maker Laboratories is analyzed in the following section (3) replying thus to RQ1, through a literature review of existing contributions and through a custom analysis of a dataset containing data of the distribution of Fab Labs, DIYBio Labs and Hackerspaces from three different platforms. The social structure of the Maker Laboratories is analyzed in order to reply to RQ2 (4), with a literature review first and then with the replication of an early analysis of Maker Laboratories on Twitter in order to investigate the evolution of the community after several years. The results are then contextualized within the limitations of this research and with potential future endeavors (5).

2 Conceptual models of the Maker Movement as exploratory maps

2.1 Models of maker roles and identities

The literature review of this section revolves around conceptual models of the Maker Movement presenting conceptual maps as another type of exploratory maps. These are models of who and where makers and their laboratories are and how they could be found, analyzed and understood, in a sense-making effort for orienting their exploration. The first model depicts the roles and identities of makers as the starting point for understanding the nature, distribution and social dimension of the Maker Movement.

The definition of maker proposed by Dougherty and MAKE Magazine is broad and fuzzy enough to promote the growth of a global phenomenon,

but less clear for analyzing and organizing it.[3] Chris Anderson improved the definition with specific practices and principles based on: a) digital design and prototyping; 2) a shared practice of collaboration and sharing of projects; 3) digital fabrication technologies and spaces.[4] Makers can be considered (and often are) designers or a new kind of designers, be them formally trained and employed or informally active and self-taught. Often working with open, peer-to-peer, distributed and Do It Yourself (DIY) approaches in a collaborative way,[5] makers adopt digital fabrication technologies[6] and work often for cultural change,[7] educational[8] and social[9] purposes, beside entrepreneurial ones.[10]

If anybody can be a maker,[11] then the identity of a maker is likely to result from the integration of different profiles, roles, knowledge, practices and identities. Therefore, an exploratory approach to start addressing the complexity of makers' profiles can be developed through a simple model[12] that enables to view the roles and identities of makers in a more nuanced and layered way. Within this model, the makers' identity is the result of the integration of different roles and practices that concur for the same common purpose of their initiatives **[Fig. 1]**. Depending on the nature of the common purpose, several versions of this model of makers' identity could be elaborated: for example one for makers working with social innovation;

---

3. Dale Dougherty, We Are Makers (TED@MotorCity, 2011), accessed January 21, 2020, http://www.ted.com/talks/dale_dougherty_we_are_makers; The Blueprint, "An Interview with Dale Dougherty."

4. Chris Anderson, *Makers: The New Industrial Revolution* (New York: Crown Business, 2012).

5. Yekta Bakırlıoğlu and Cindy Kohtala, "Framing Open Design through Theoretical Concepts and Practical Applications: A Systematic Literature Review," *Human–Computer Interaction* 0, no. 0 (February 22, 2019): 1–45; Massimo Menichinelli, "A Framework for Understanding the Possible Intersections of Design with Open, P2P, Diffuse, Distributed and Decentralized Systems," *Disegno—The Journal of Design Culture* III, no. 01–02 (2016): 44–71.

6. Neil Gershenfeld, "How to Make Almost Anything: The Digital Fabrication Revolution," *Foreign Affairs*, 2012; Neil Gershenfeld, *FAB: The Coming Revolution on Your Desktop--From Personal Computers to Personal Fabrication* (New York: Basic Books, 2005).

7. Elizabeth Garber, Lisa Hochtritt, and Manisha Sharma, eds., *Makers, Crafters, Educators: Working for Cultural Change*, 1 edition (New York, NY: Routledge, 2018).

8. Lee Martin, "The Promise of the Maker Movement for Education," *Journal of Pre-College Engineering Education Research (J-PEER)* 5, no. 1 (2015): 4; Sylvia Libow Martinez and Gary S. Stager, *Invent To Learn: Making, Tinkering, and Engineering in the Classroom* (Torrance, Calif.: Constructing Modern Knowledge Press, 2013).

9. Elisabeth Unterfrauner and Christian Voigt, "Makers' Ambitions to Do Socially Valuable Things," *The Design Journal* 20, no. sup1 (September 6, 2017): S3317–25.

10. Markko Hamalainen and Jesse Karjalainen, "Social Manufacturing: When the Maker Movement Meets Interfirm Production Networks," *Business Horizons*, THE GENERATIVE POTENTIAL OF EMERGING TECHNOLOGY, 60, no. 6 (November 1, 2017): 795–805; Eric Joseph Van Holm, "Makerspaces and Contributions to Entrepreneurship," *Procedia - Social and Behavioral Sciences*, World Conference on Technology, Innovation and Entrepreneurship, 195 (July 3, 2015): 24–31; Russell E. Browder, Howard E. Aldrich, and Steven W. Bradley, "The Emergence of the Maker Movement: Implications for Entrepreneurship Research," *Journal of Business Venturing* 34, no. 3 (May 1, 2019): 459–76.

11. Dougherty, *We Are Makers*.

12. Massimo Menichinelli, Alessandra Gerson Saltiel Schmidt, and Priscilla Ferronato, "Mapping Strategies for Distributed, Social and Collaborative Design Systems of Makers, Designers and Social Entrepreneurs," *Conference Proceedings of the Academy for Design Innovation Management* 2, no. 1 (November 30, 2019).

another one for makers working with commercial purposes or for cultural purposes, and so on.

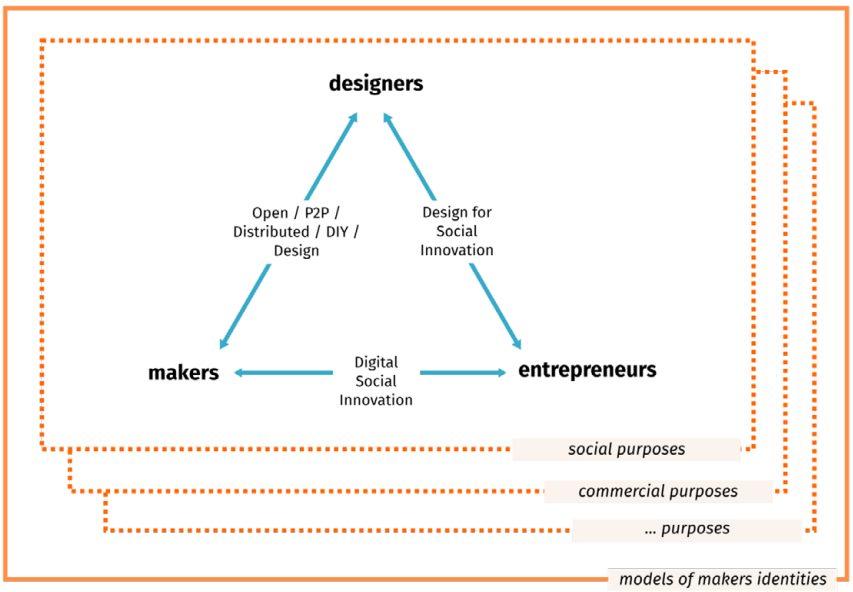


FIG. 1 A model for defining different identities of makers according to their purposes*

2.2 Places, communities and scales of the Maker Movement

A second map for navigating the Maker Movement can be drawn for representing a model of the different communities that can be found in the movement, and how they interact among each other and at which scale they operate. Such communities can be found on three levels and with a cross-cutting socio-technical dimension of digital platforms [Fig. 2]:

1. Local: communities that form in and around local laboratories and events.
2. Global: a global community emerging all the local events and laboratories. This will be explored in depth in section 4, especially with an updated analysis (4.2).
3. Projects: the communities that form around the development of projects which are typically prototyped and manufactured locally in the laboratories; projects could also be completely global, especially when developed digitally in a common repository.
4. Digital platforms: a cross-cutting dimension that connect the previous three scales, for example for sharing projects openly as Open Design, which then become community-based initiatives. This will be explored in section 4, in the literature review (4.1).

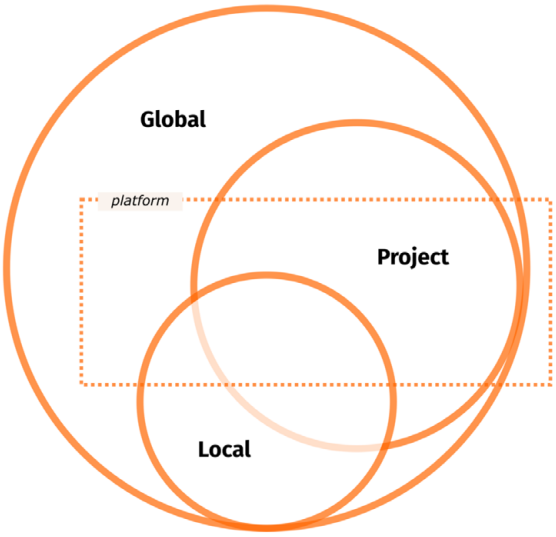


FIG.2 Model of the types of communities in the Maker Movement at different scales, and the dimension of digital platforms

2.3 Models of Maker Laboratories

Different practices and roles constitute who makers are and how their communities work at different scales and dimensions: as a result, we find different places with specific traditions, practices, technologies, business models and values [Fig. 3].

Roots of Maker Laboratories can be tracked back to the Hacklabs movement, which started around 1995 and peaked around 2005: voluntary-run spaces that provided access to machines with GNU/Linux and Free Software, programming and electronics as a physical and local platform for developing and promoting the hacker culture, autonomous movement and media activism, post-capitalism and alter-globalization politics. Hacklabs typically have a strong political agenda, and they share overlapping but different trajectories with Hackerspaces, less politically inclined and more widespread.[13] Hackerspaces started as well in the 1990s, and went through three waves, and only recently they flourished with a stronger effort on the organizational dimension and focus on the physical dimension of hacking, from microelectronics to 3D printers.

Fab Labs emerged, almost by accident, as the outreach and democratization of the work of Neil Gershenfeld at MIT on digital fabrication as the key translator between bits and atoms, of information and matter.[14] This is the main focus of Fab Labs, at least at the technological level: it is not by accident that the concept has been developed at MIT at the Center for Bits

13. Maxigas, "Hacklabs and Hackerspaces. Tracing Two Genealogies," *Journal of Peer Production*, no. 2 (July 2012).

14. Gershenfeld, *FAB*; Gershenfeld, "How to Make Almost Anything: The Digital Fabrication Revolution."

and Atoms,[15] not at the High-Low Tech[16] research group. Fab Labs offer a partially defined and shared set of tools, processes and knowledge for developing physical representations of digital data, for extracting digital data from physical contexts and for experimenting how digital technologies can influence the development of physical objects. Furthermore, the Fab Lab community focuses on sharing same protocols, practices, communication channels and initiatives in order to enable any project to be replicated everywhere.

Makerspaces are similar places, but with less focus on the digital dimension of making and more on the analog one; they are sometimes considered as the main term for representing the whole formats of Maker Laboratories. However, sometimes they can be clearly defined as a separate community from Fab Labs and other labs, and are often promoted by MAKE Magazine.[17] Several different approaches at organizing Makerspaces can be found: one example is the now-defunct network of TechShops, who were typically ten times larger than a Fab Lab and with a more entrepreneurial approach than a community-driven one.[18] Sewing Cafes[19] are similar places but with the goal of enabling their members to work with textiles and fashion. Repair Cafes, emerged in Amsterdam in 2009, are also related, but with a specific focus not on making but on fixing existing commercial products for local neighbors.[20]

The same hacker ethic of sharing knowledge, free access and collaboration[21] has been adopted and promoted by the DIYBio Movement and its members:[22] DIYbiologists have expertises and experiences different from the makers' ones, but share with them some common principles, representing thus a similar culture and community. The DIYBio Movement aims at democratizing access to research in biotechnology, and this approach is increasingly adopted within the Maker Movement, for example for the design of 3D printers that employ orange juice and

15. http://cba.mit.edu/, accessed January 16, 2020.

16. http://highlowtech.org/, accessed January 16, 2020.

17. Adam Kemp, *The Makerspace Workbench: Tools, Technologies, and Techniques for Making* (Sebastopol: Make Books, 2013).

18. Mark Hatch, *The Maker Movement Manifesto. Rules for Innovation in the New World of Crafters, Hackers, and Tinkerers* (New York: McGraw-Hill Education, 2014).

19. Anja-Lisa Hirscher and Ramia Mazé, "Stuff Matters In Participation: Infrastructuring A Co-Sewing Café," *Journal of Peer Production*, no. 13 (April 2019), accessed January 21, 2020, http://peerproduction.net/issues/issue-13-open/peer-reviewed-papers/stuff-matters-in-participation/.

20. Sven Eberlein, "How to Start a Repair Café," *Shareable* (blog), March 29, 2013. Accessed January 21, 2020, https://www.shareable.net/how-to-start-a-repair-cafe/; Darren Sharp, "The Repair Café Foundation Builds Community by Fixing Things," *Shareable* (blog), March 6, 2018. Accessed January 21, 2020, https://www.shareable.net/the-repair-cafe-foundation-builds-community-by-fixing-things/.

21. Pekka Himanen, *The Hacker Ethic and the Spirit of the Information Age* (New York, NY, USA: Random House Inc., 2001).

22. Alessandro Delfanti, *Biohackers: The Politics of Open Science* (London: Pluto Press, 2013), accessed January 21, 2020, http://escholarship.org/uc/item/5fq395w7.

modified bacteria instead of plastic filament.[23] This connection between the Maker Movement and the DIYBio movement has also been fostered by MAKE Magazine and Maker Faires with the perspective that biology could be considered as a 'personal technology' just like making and digital fabrication.[24]

A third conceptual map can be drawn to communicate the dimension and connections among such type of laboratories. This is a preliminary, hypothetical map based on the experience of the authors, who have not only been just researchers and professionals of the Maker Movement, but also participants of several of its communities for years **[Fig. 3]**. Fab Labs, Hackerspaces and Makerspaces are shown with a larger size since they are the main formats in terms of status of development, distribution, number of places and popularity. Because of this, they often tend to include other spaces (Repair Cafes, Sewing Cafes, DIYBio Labs) or at least part of their technologies, practices and communities. The overlaps between these formats are related to the making and entrepreneurship activities that connect them, building opportunities for recognition, the

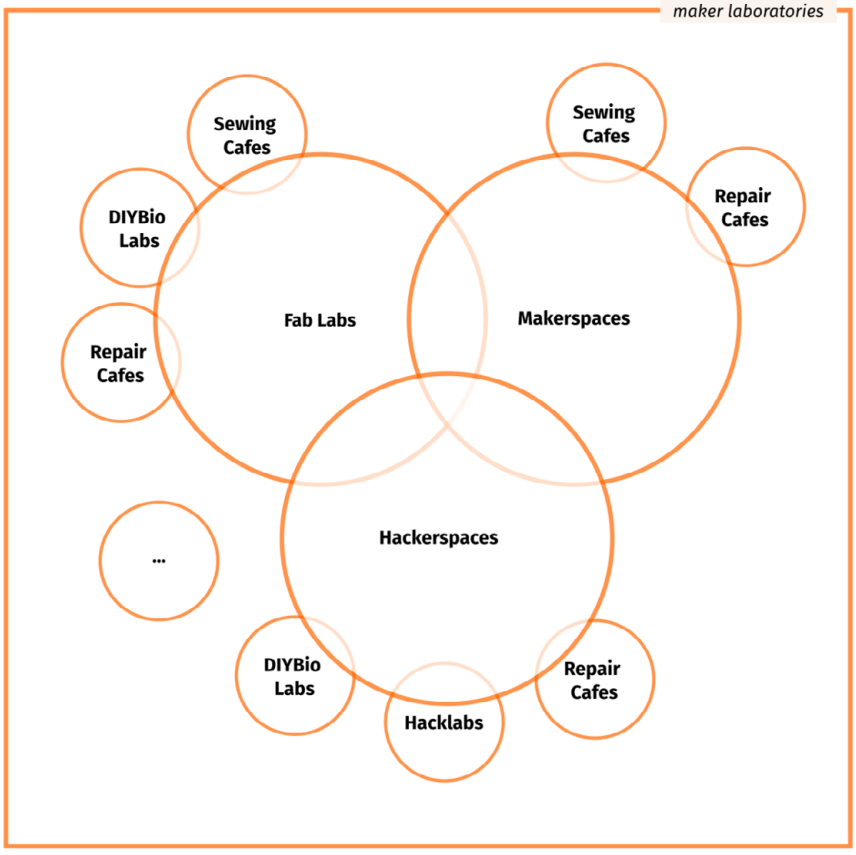


FIG. 3 A conceptual model of the types of communities in the Maker Movement based on the experience of the authors

23. Allan Alasdair, "3D Printing Using Genetically Modified Bacteria and Orange Juice," Make: DIY Projects, How-Tos, Electronics, Crafts and Ideas for Makers, November 15, 2014. Accessed January 21, 2020, http://makezine.com/2014/11/15/3d-printing-using-genetically-modified-bacteria-and-orange-juice/.

24 Sara Tocchetti, "DIYbiologists as 'Makers' of Personal Biologies: How MAKE Magazine and Maker Faires Contribute in Constituting Biology as a Personal Technology," *Journal of Peer Production*, no. 2 (July 2012). Accessed January 21, 2020, http://peerproduction.net/issues/issue-2/.

construction of communities, the exploitation of value created, as well as possibilities for replication of social innovation initiatives. As a consequence, the emerging landscape is a holistic ecosystem of value creation for societal change. Section 4.2 provides a data analysis for the validation of such simple and conceptual map.

3 First maps of the geographical distribution of the Maker Movement

3.1 Literature review

Maker Laboratories often act as (or are part of) schools, community hubs and professional centers where the Maker Movement has been emerging and building social and collaborative initiatives. Because of the often bottom-up nature of the movement, the number of these laboratories is always changing, making it difficult to be completely tracked over time. Their amount is of strategic importance as it could be considered as a proxy of the overall number of makers by considering each local community, through the estimation of average quantities or by directly contacting laboratories to receive a more accurate estimate.

The "Makers' Inquiry" initiative[25] aimed to explore the emergence of the phenomenon in Italy, in its first years. It proposed that the geographical distribution of the Maker Movement could be assessed from different places where makers "make" their making activity (home, office, co-working, workshop, artisan workshop, school or university, factory, Maker Laboratories and so on). The most interesting fact is that these activities are carried out in a range of different places and that these places could be complementary to each other: not only Fab Labs, but also schools, studios and at home. Most of those laboratories were found to be located in North and Central Italy, and therefore may be directly linked to the local industrial traditions, and they are hosted in places more related to crafts, business and production rather than research and education. A similar distribution was found in another research about Maker Laboratories in Italy.[26]

Another initiative analyzed laboratories in France,[27] exploring it with a "tour of the labs" experience. It is not only as a way to identify the distribution of Maker Laboratories, but also to get in touch with makers' peers, learn new practices, while helping to animate the network.

The Joint Research Centre (JRC), the European Commission's science

25. Massimo Bianchini et al., *Makers' Inquiry. Un'indagine Socioeconomica Sui Makers Italiani e Su Make in Italy* (Milano: Libraccio Editore, 2015), accessed January 21, 2020, http://makersinquiry.org/.

26. Massimo Menichinelli and Alessandro Ranellucci, "Censimento Dei Laboratori Di Fabbricazione Digitale in Italia 2014" (Roma: Fondazione Make in Italy CDB, February 26, 2015), accessed January 24, 2020, http://makersinquiry.org/edition02.html.

27. Camille Bosqué, Constance Garnier, and Matei Gheorghiu, "Livre Blanc· Panorama Des Fablabs En France, 2017-18" (Conseil Scientifique du Réseau Français des Fablabs (CS-RFFLabs), May 2019), accessed January 21, 2020, http://www.fablab.fr/le-conseil-scientifique-du-rfflabs-a-le-plaisir-de-publier-son-livre-blanc-panorama-des-fablabs-en-france/.

and knowledge service, recently elaborated a report that proposes an overview of Maker Laboratories at European level using several sources of data. According to this analysis, Fab Labs account for nearly half of the laboratories in the European Union (48%; 397 laboratories), Hackerspaces are 40% (327 laboratories) and then there are other types of laboratories for 12% (102 laboratories). The average number of laboratories per country is 29.5. France, Germany and Italy represent 53% of the laboratories within the European Union.[28]

An analysis of the hackerspaces.org platform found that Hackerspaces are a global phenomenon in 71 countries but with a greater presence in Europe and the USA.[29] The majority of labs are in the USA with 238 labs, with Germany at the second place with 131 labs, then the United Kingdom (51), France (42) and the Netherlands (28). Brazil has the largest number of Hackerspaces in South America with 28 labs, and China the largest in Asia with 26. South Africa is the largest in the African continent with 4 labs.

3.2 Data analysis: the geographical distribution of Maker Laboratories on fablabs.io, hackerspaces.org, diybio.org

In order to advance the mapping of the geographical distribution of Maker Laboratories, in this section we present the analysis of an already formatted and openly accessible dataset that collected data from the fablabs.io,[30] hackerspaces.org,[31] diybio.org,[32] platforms on January 25, 2018. Such dataset was created with a custom software module that accesses and standardizes data from many Maker platforms in order to produce a common set of APIs.[33]

In this section we plot the geographical distribution of these labs at global, continent, country and major city level **[Fig. 4-7]**. At global level **[Fig. 4]**, the majority of the laboratories are Hackerspaces (2,237 labs), almost the double of Fab Labs (1,216); DIYBio Labs (104) are a minority. This could be both a measurement of their popularity, but also of the efficiency of the platforms in mapping them, or the quality of the gathered data (hackerspaces.org is a wiki and can be edited by anybody, the other two platforms have an editorial team).

---

28. Paulo Rosa et al., *Overview of the Maker Movement in the European Union*, EUR 28686 EN (Luxembourg: Publications Office of the European Union, 2017).

29. Sandra Álvaro Sánchez, "A Topological Space for Design, Participation and Production. Tracking Spaces of Transformation," *Journal of Peer Production*, no. 13 (March 2019), accessed January 21, 2020 http://peerproduction.net/issues/issue-13-open/peer-reviewed-papers/a-topological-space-for-design-participation-and-production/.

30. https://www.fablabs.io/, accessed January 21, 2020.

31. https://wiki.hackerspaces.org/, accessed January 21, 2020.

32. https://diybio.org/, accessed January 21, 2020.

33. Massimo Menichinelli, *Openp2pdesign/Makerlabs: V0.21.2* (Zenodo, 2018), https://doi.org/10.5281/zenodo.1182676; Massimo Menichinelli, "WP7 MakerSpacesRadar" (Zenodo, February 15, 2018), https://doi.org/10.5281/zenodo.1182468.

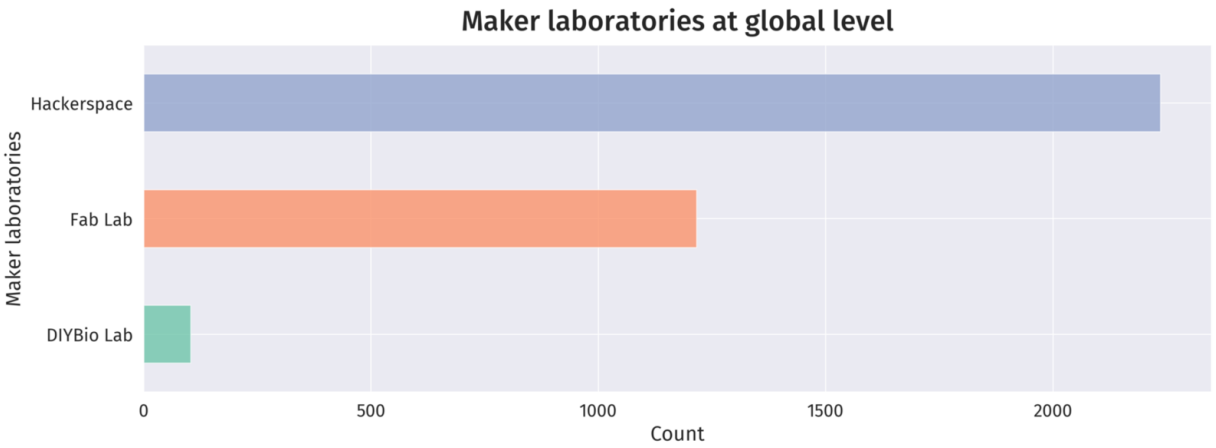


FIG. 4 Geographical distribution of Maker laboratories at global level, by type (Source: diybio.org, hackerspaces.org, fablabs.io, January 25 2018).

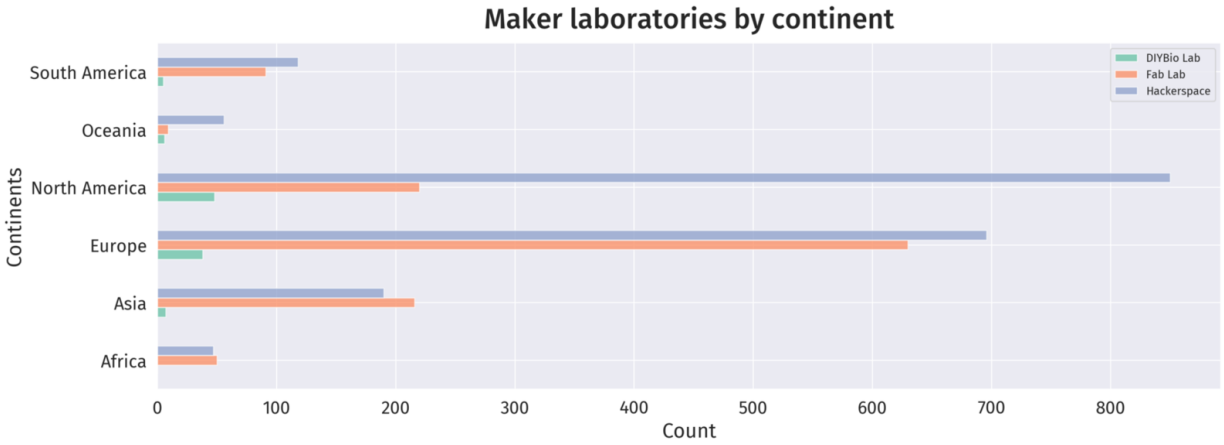


FIG. 5 Geographical distribution of Maker Laboratories by continent and type (Source: diybio.org, hackerspaces.org, fablabs.io, January 25 2018).

At continent level **[Fig. 5]**, North America and Europe are the main places where labs can be found, but while in North America Fab Labs are one fifth of Hackerspaces (220 labs and 850 labs, respectively), in Europe they reach similar numbers (630 and 696 labs). In Asia Fab Labs are the majority (216 and 90 labs) as in Africa (50 and 47), and in South America again Hackerspaces are the majority (118) but Fab Labs are very close (91). The highest concentration of DIYBio Labs is in North America (48) and Europe (38).

At country level **[Fig. 6]**, USA has the main concentration of laboratories (352 Hackerspaces, 170 Fab Labs, 38 DIYBio Labs); China has the second place for Hackerspaces (212) but has no Fab Labs and there is only one DIYBio Lab. Germany comes third for Hackerspaces (185), but has only 47 Fab Labs and 5 DIYBio Labs. It is interesting to note how we can find a majority of Fab Labs instead of Hackerspaces in France (155 and 76 labs) and Italy (134 and 33 labs).

At city level **[Fig. 7]**, the majority of cities have more than three laboratories; Europe also concentrates a huge amount of laboratories, but there are interesting exceptions, like Tbilisi with 11 Fab Labs at the first place. Main cities can be considered Paris (9 Hackerspaces and 8 Fab Labs) and

Shenzhen (7 Hackerspaces and 5 Fab Labs). New York and Los Angeles have the same number of Hackerspaces (9), but no other labs. In terms of Fab Labs, we should note Boston (8), then Lima and Milan (6), then Sao Paulo, Shenzhen, Quito, Porto Alegre, Madrid, Dubai (5).

Generally, the Global North concentrates more laboratories than the Global South. The areas with the highest concentrations of laboratories are Europe, the East Coast and Midwest in the USA, South of India and Brazil, whereas China has Hackerspaces distributed all over the country.

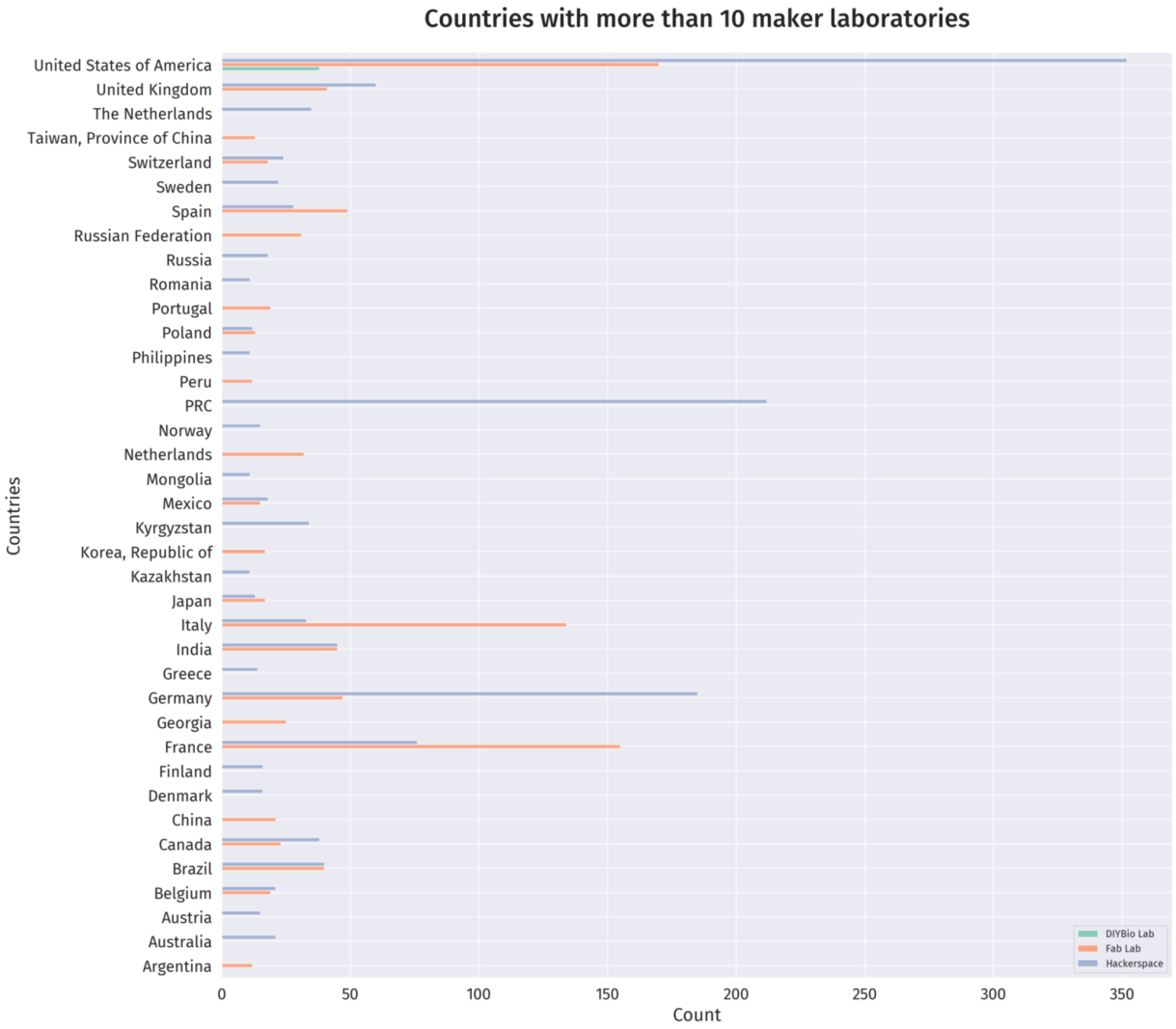


FIG. 6 Geographical distribution of Maker laboratories by country and type. Only countries with more than 10 maker laboratories are considered (Source: diybio.org, hackerspaces.org, fablabs.io, January 25 2018).

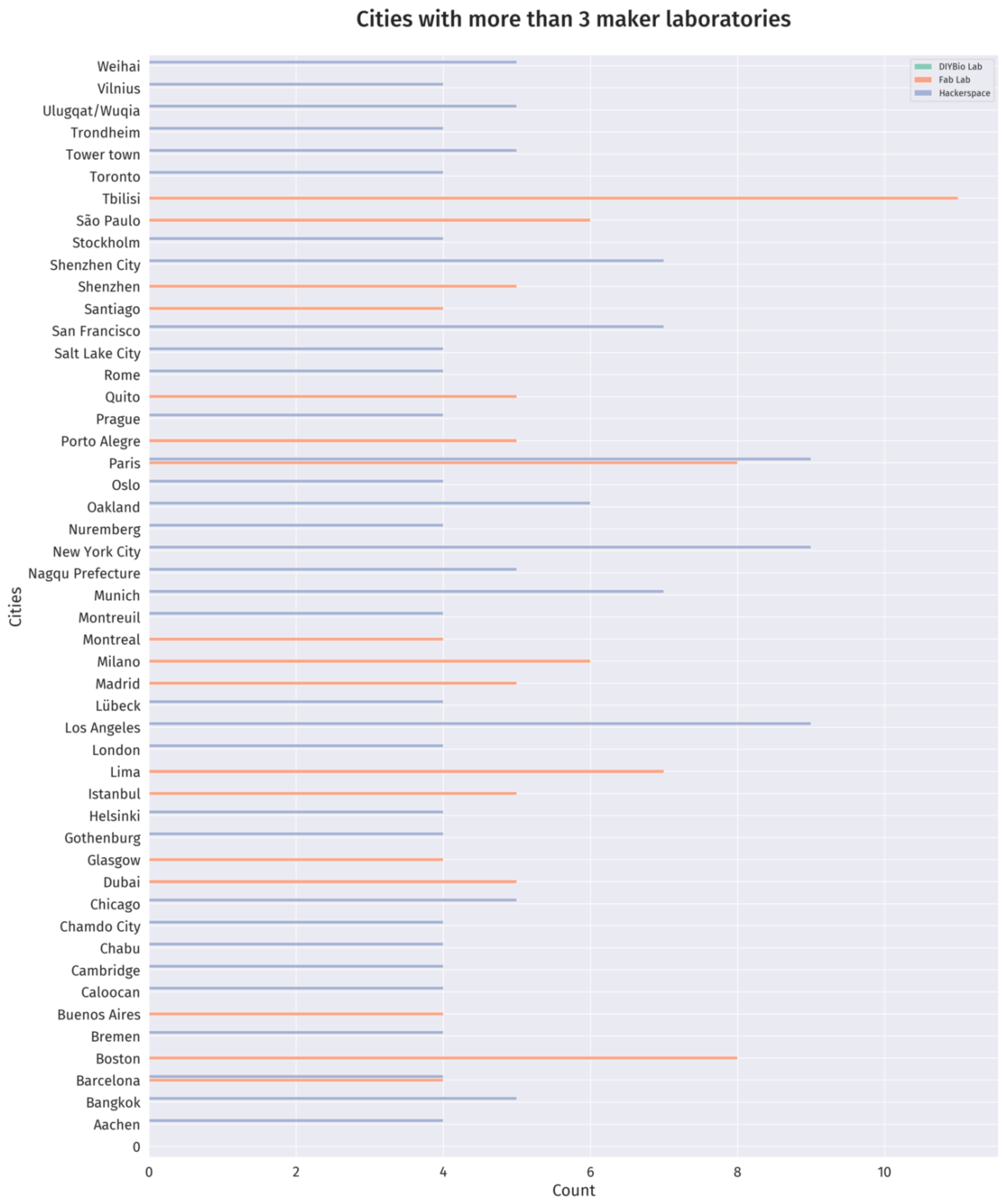


FIG. 7 Geographical distribution of Maker laboratories at city level, by type. Only cities with more than 3 maker laboratories are considered (Source: diybio.org, hackerspaces.org, fablabs.io, January 25 2018).a

4 First maps of the social structure of the Maker Movement

4.1 Literature review

Digital platforms, analyzed with a social network analysis, are the main source for all the overviews of the social structure of the global community of Maker Laboratories and in-depth analysis of specific maker projects elaborated so far. The ubiquity, scale, ease of use, quantity and

quality of available data render platforms not just important for users, but also for researchers.

For example, an analysis of the global community of Hackerspaces considered hackerspaces.org as the main source for the data, but did not explore the geographical distribution of labs but their social structure.[34] The list of labs presented on the platform (a wiki) was analyzed in their connections by in-degree, first at depth 1 (considering only links between labs listed on the platform) and then by connecting the labs found at depth 1 with the ones originally listed in the platform but not directly included or connected to it. In the first case, 941 labs were found, structured with a densely connected centre surrounded by a concentric distribution of less connected labs: two main labs can be found at the core, ccc.de (Chaos Computer Club), located in Germany and the noisebridge.net (the Noise Bridge) located in San Francisco in the USA, with Metalab (Austria) between the two. These labs are surrounded by the ones from their same country first and then by the labs from other countries, belonging to Europe, The United States and Canada, South America, Australia, Asia and Africa. In the second case, 1,034 labs were found, with a more clustered network with more links at the country level, and a strong sub-community from Germany made of Fab Labs and not Hackerspaces. Both analyses found also the presence of several Makerspaces, showing thus how the boundaries between these formats of labs are not so clear, even on platforms with a clear identity such as hackerspaces.org.

Another analysis focused on the whole global community of Maker Laboratories (Fab Labs, Makerspaces, Hackerspaces) by using instead Twitter as the main source of data, mined with a custom software released as open source that analyzes who follows whom in a manually-curated list of Twitter accounts of Maker Laboratories.[35] Here Twitter is considered as a proxy of the global connections among the laboratories, and the obtained network consists of 946 nodes and 29,821 edges among them, representing thus a first data-driven measurement of the size of the global community. The community is split into two main polarities, and an exploration of its sub-communities at a high level of resolution[36] shows that Hackerspaces, Makerspaces and TechShops are grouped together on one side (53.28% of the nodes), and Fab Labs on another side (42.07% of the nodes), with a subset of French Fab Labs as a separate sub-community, showing a first subdivision of the Fab Lab community. At

34. Álvaro Sánchez, "A Topological Space for Design, Participation and Production. Tracking Spaces of Transformation."

35. Massimo Menichinelli, "Mapping the Structure of the Global Maker Laboratories Community through Twitter Connections," in *Twitter for Research Handbook 2015–2016*, ed. Clement Levallois et al. (Lyon: EMLYON Press, 2016), 47–62.

36. Vincent D. Blondel et al., "Fast Unfolding of Commun https://publications.europa.eu/en/publication-detail/-/publication/5d8dfbab-ca80-11e7-8e69-01aa75ed71a1/language-enities in Large Networks," *Journal of Statistical Mechanics: Theory and Experiment* 2008, no. 10 (October 9, 2008): P10008; R. Lambiotte, J.-C. Delvenne, and M. Barahona, "Laplacian Dynamics and Multiscale Modular Structure in Networks," ArXiv:0812.1770 [*Physics*], December 9, 2008.

a finer resolution, the number of sub-communities rises, clearly showing the distinctions between Hackerspaces (32.66 %), Makerspaces (16.7 %) and TechShops (1.48 %). Within Fab Labs, however, many more sub-communities can be found, suggesting that form a much more diversified and articulated network of laboratories. Generally, few nodes have high degree and betweenness with a common power-law distribution, and this can be found also regarding influence and trust, which have a different meaning in each polarity: Eigenvector centrality is much more concentrated in several nodes in the Fab Lab community, and PageRank centrality is concentrated in very few nodes among Makerspaces and Hackerspaces. A static perspective on trust finds it to be distributed among many labs in Fab Labs; a dynamic perspective finds it concentrated in very few nodes on the Makerspaces and Hackerspaces side.

Within the Maker Movement, projects can be at both local scale and global scale: leveraging the principles and the attitude of Open Source Software, projects can potentially scale up to many participants, but typically they are small projects that start from the local context, since the hardware dimension renders upscaling much more costly and cumbersome. As in many research initiatives about Open Source Software, projects are analyzed through their hosting on version control systems like Git and their platforms like GitHub. A large scale social network analysis of Open Source Hardware projects (105 projects) was developed in order to understand to which extent the transparent and participatory processes of software development reached hardware product development: the result is that these initiatives are generally small-scale and heterogeneous.[37] Social network analysis has also been adopted by makers/researchers in order to understand their participation in open and maker projects, and their position in the networks of interactions emerging from the collaboration in GitHub in defining Open Design, teaching it and developing a maker platform for Open Design projects. These are all meta-design activities that build a socio-technical infrastructure of Open Design projects, rather than directly designing Open Design projects.[38]

4.2 Data analysis: An update of the global structure of the Maker Movement on Twitter

The software developed for the analysis of the whole global community of Maker Laboratories on Twitter mentioned in the section above[39] is openly accessible, and therefore we adopted and updated it in order to replicate

37. Jérémy Bonvoisin et al., "How Participative Is Open Source Hardware? Insights from Online Repository Mining," *Design Science* 4, no. 19 (November 21, 2018).

38. Massimo Menichinelli, "A Data-Driven Approach for Understanding Open Design. Mapping Social Interactions in Collaborative Processes on GitHub," *The Design Journal* 20, no. sup1 (September 6, 2017): S3643–58.

39. Menichinelli, "Mapping the Structure of the Global Maker Laboratories Community through Twitter Connections."

the same analysis five years later and compare how the community has evolved so far. Here again the accounts were manually added in another updated list and analyzed in terms of who follows whom, as a proxy for collaboration and trust among the Maker Laboratories, resulting in a larger network of 1,278 nodes and 52,533 edges.

Sub-communities can be observed with the same algorithm[40] adopted by the previous research, providing different resolutions that enable the uncovering of network structures at different scales. With a resolution of 1.0, we can see that the larger part is made of Hackerspaces and Makerspaces (45.07%, blue nodes on the right), followed by Fab Labs (31.61%, red nodes on the left), then by French Fab Labs (10.02%, orange nodes on the left), then by Maker Faires (7.36%, light blue nodes on the right) which are closer to Makerspaces and Hackerspaces than to Fab Labs (this might be a stronger connection of MAKE Magazine to Makerspaces than to Fab Labs). It should be noted how Repair Cafes, at 1.49%, are a separate branch on the top left, and that there is handful of completely disconnected labs, mainly Makerspaces and Hackerspaces [Fig. 8].

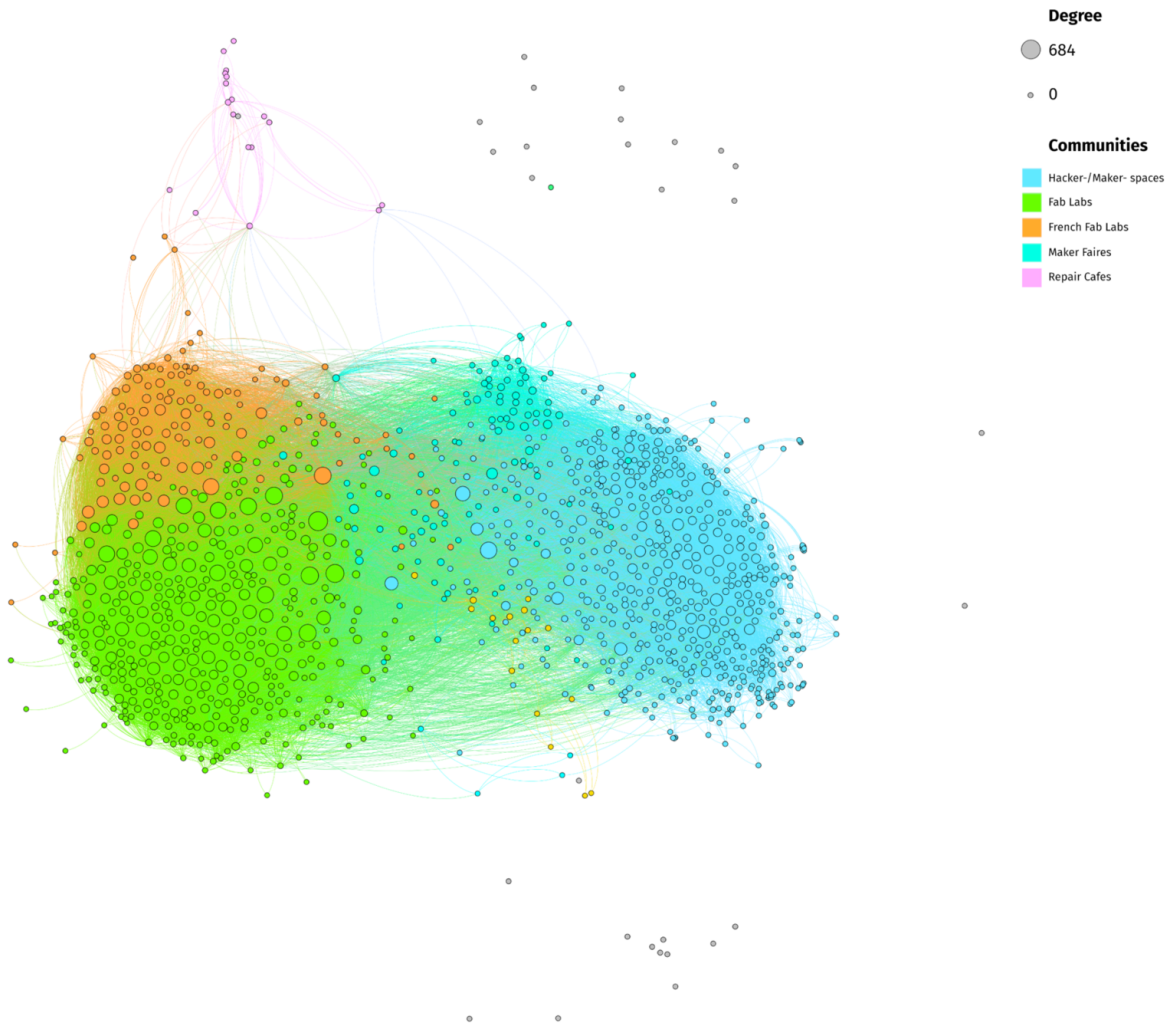


FIG. 8 The main sub-communities found with a resolution of 1.0 (Source: Twitter, June 25 2019).

40. Blondel et al., "Fast Unfolding of Communities in Large Networks"; Lambiotte, Delvenne, and Barahona, "Laplacian Dynamics and Multiscale Modular Structure in Networks."

At a smaller scale and finer network architecture, with a resolution of 0.5, more sub-communities can be found: Hackerspaces (24.41%, orange nodes on the right) and Makerspaces (15.26%, yellow nodes on the right) are again separated at this level, but now they are not so defined, as labs can be found in either part. We can then observe French Fab Labs (9.7%, pink nodes on the middle left), Italian ones (6.96%, light blue nodes on the left), followed by Maker Faires (5.87%, yellow nodes on the right) and only later by Fab Labs from mixed countries (5.71%, dark blue nodes on the bottom left) [Fig.9]. TechShops are here now part of the Makerspace community, and while the French Fab Lab community was almost separate already five years ago, the Italian community has now emerged as a more identifiable entity now.

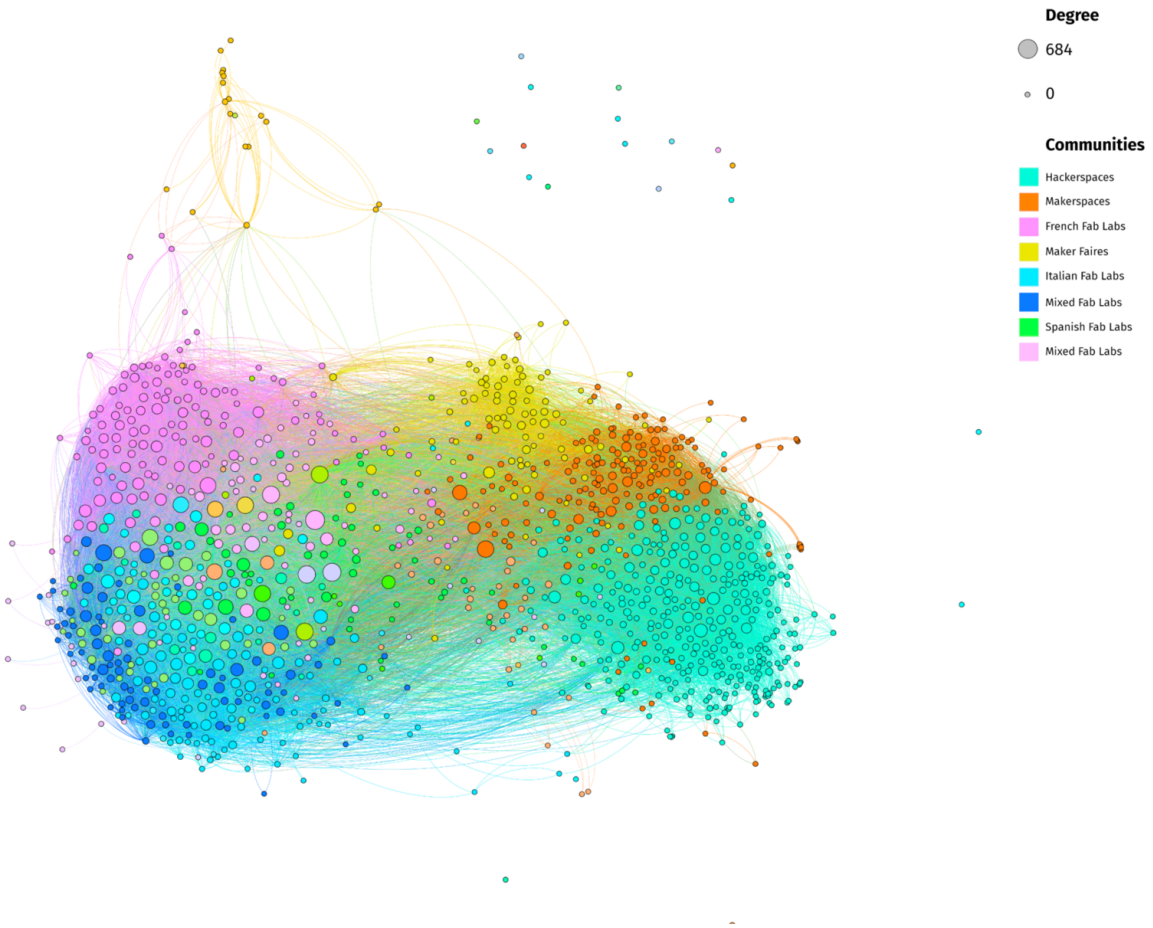


FIG. 9 The sub-communities found with a resolution of 0.5 (Source: Twitter, June 25 2019).

The distribution of Degree centrality (i.e. the number of edges of a node—the more the edges, the higher the centrality in the network) shows a larger concentration of high degree centrality in the Fab Lab community [Fig. 10].

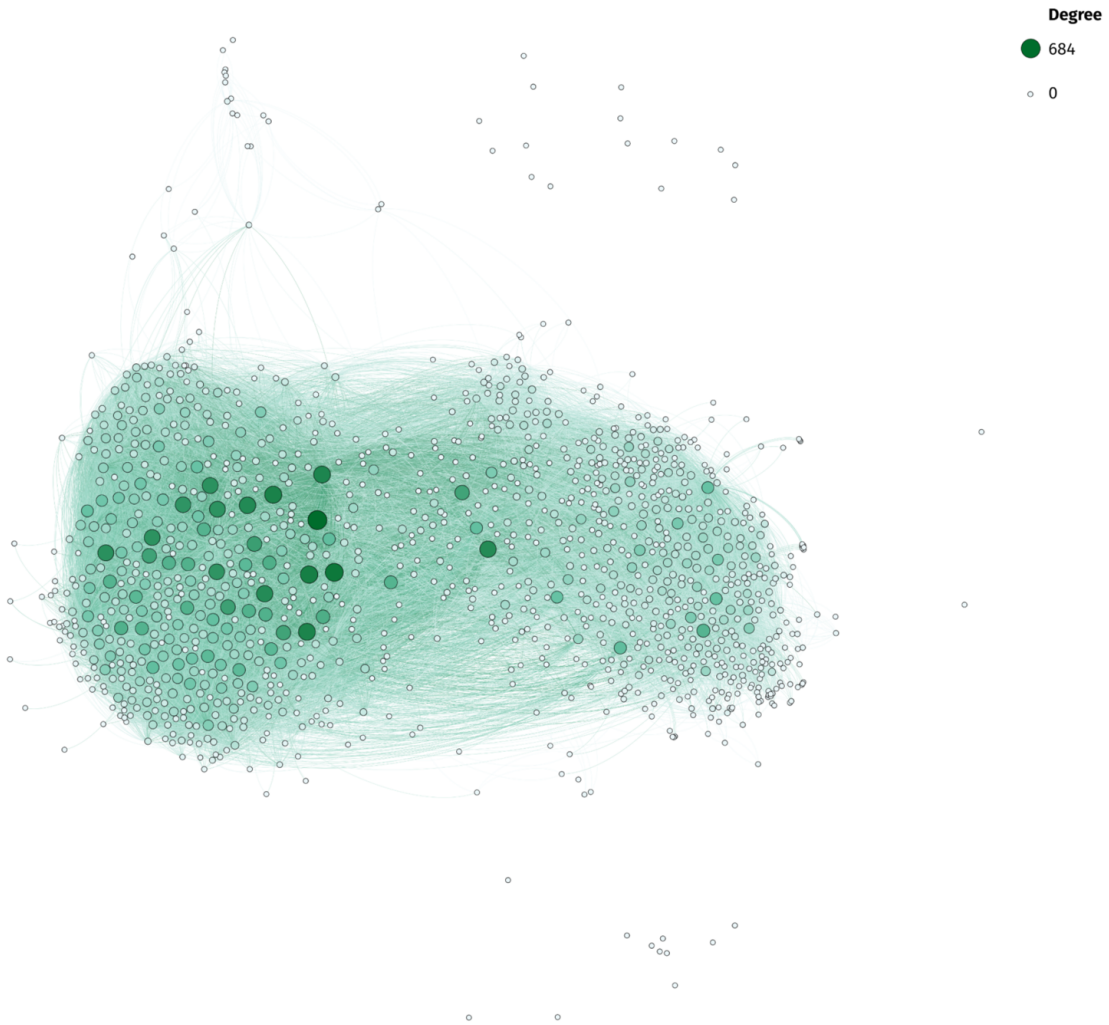


FIG. 10 Distribution of Degree centrality in the network (color and size related to the value) (Source: Twitter, June 25 2019).

The distribution of Betweenness centrality shows very similar results compared to the previous study, pointing out how still very few nodes bridge the two polarities **[Fig. 11]**. Betweenness centrality measures how many times a node acts as a bridge along the shortest path between two other nodes, i.e. how many nodes it can bridge.

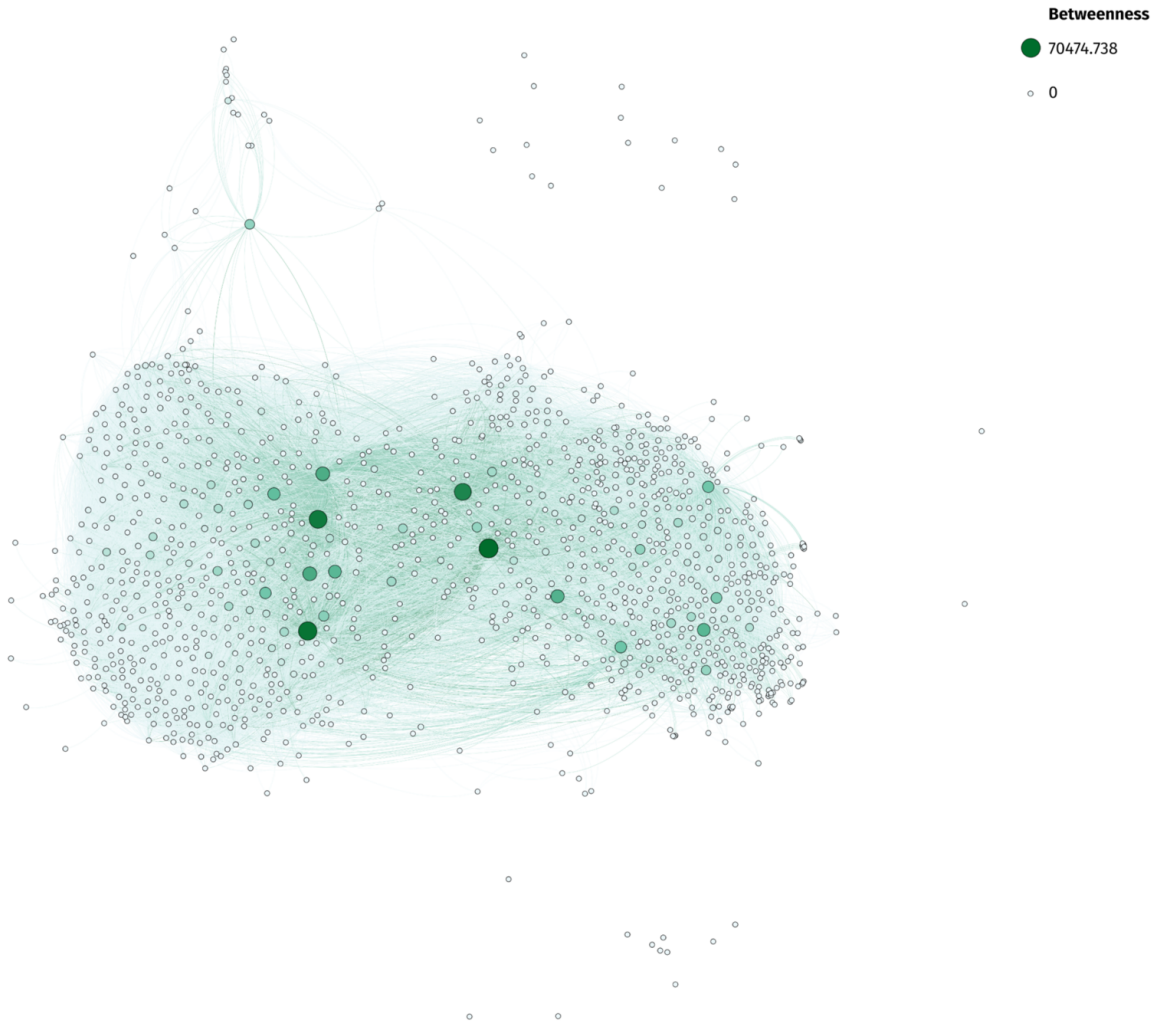


FIG. 11 Distribution of Betweenness centrality in the network (color and size related to the value) (Source: Twitter, June 25 2019).

The distribution of Closeness centrality is rather homogeneous in the network, with rather high values shared and very few nodes with a very high value. Closeness centrality measures the distance (shortest paths) between a node and all other nodes in the network, i.e. the closer a node is to all other nodes, the more central it is. Almost all nodes are therefore very close to each other and able to spread information efficiently [Fig. 12].

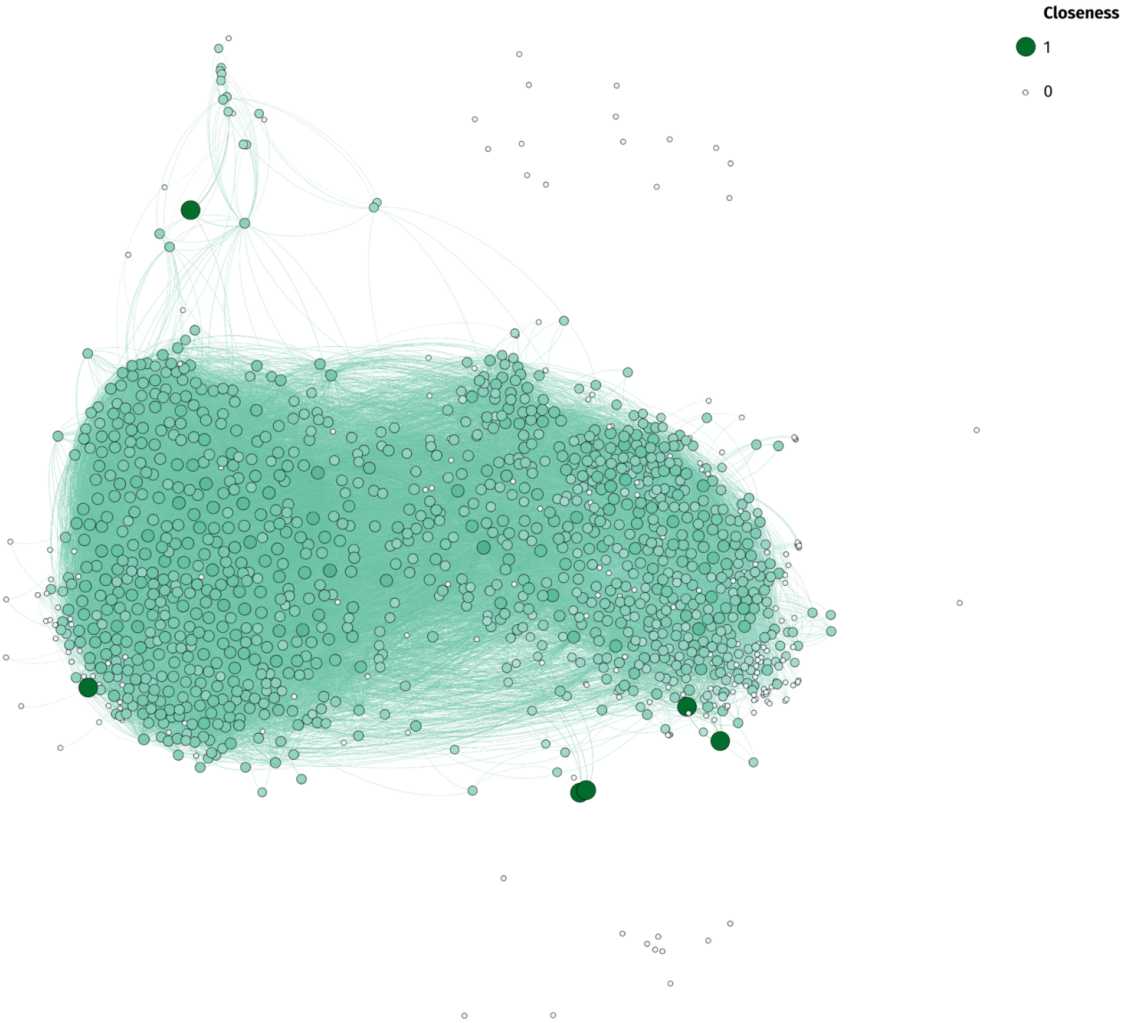


FIG. 12 Distribution of Closeness centrality in the network (color and size related to the value) (Source: Twitter, June 25 2019).

The distribution of Eigenvector centrality shows how trust and influence is more concentrated in the Fab Lab community, as it was previously found, but also rather fairly distributed among most of the labs **[Fig. 13]**. In Eigenvector centrality a node is important (central) if it is connected to other important nodes.

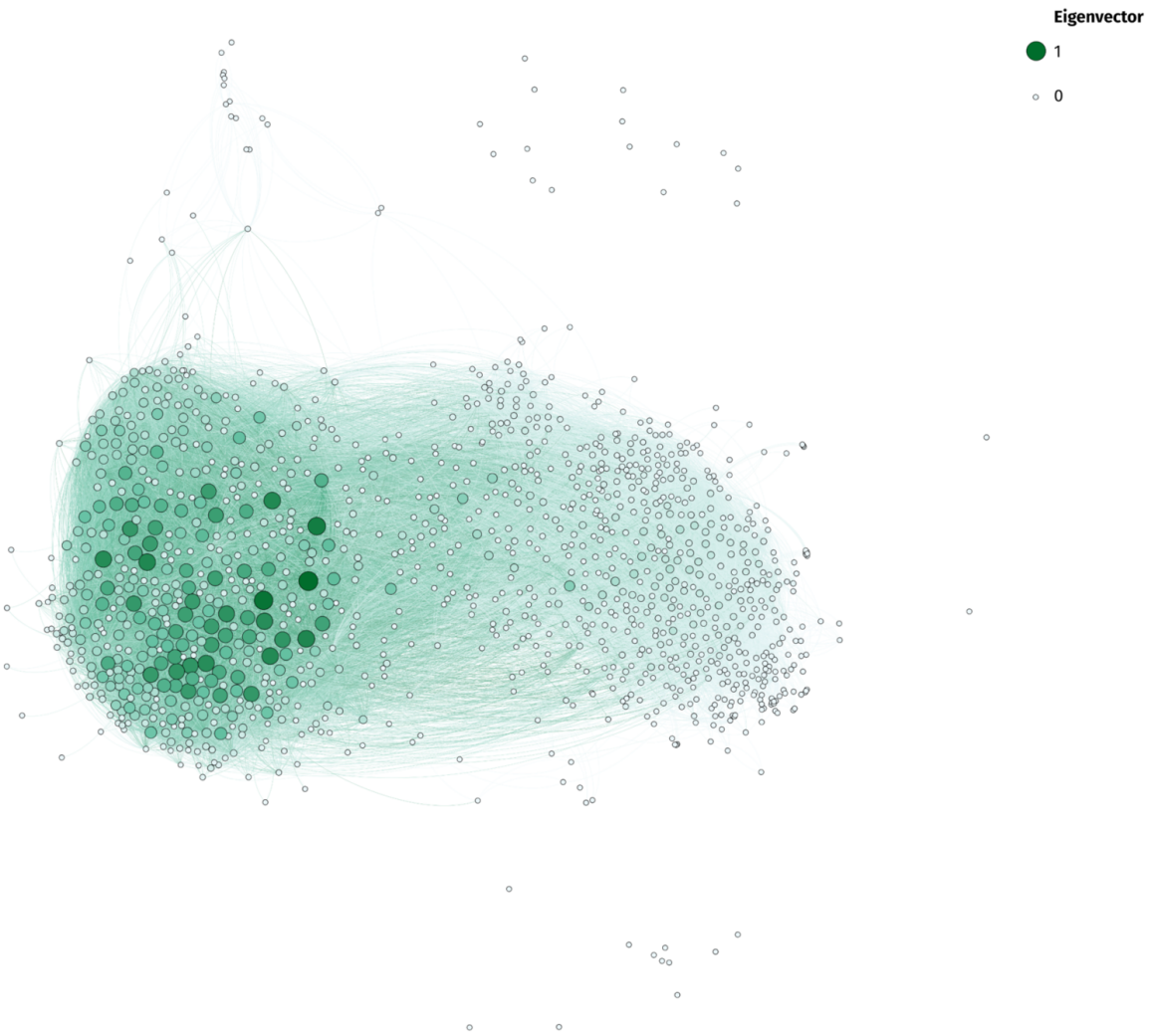


FIG. 13 Distribution of Eigenvector centrality in the network (color and size related to the value) (Source: Twitter, June 25 2019).

As for Betweenness and Eigenvector, the distribution of PageRank centrality shows very similar results to the previous study: trust in the network has stayed almost the same **[Fig. 14]**. PageRank centrality is a variant of Eigenvector centrality: here influence is determined with an iterative approach where nodes vote for the importance for other nodes (influence is calculated with iterations of voting over connections instead of connections only).

Overall, the network has become slightly larger, with Maker Faires and Repair Cafes emerging, and TechShops disappearing, and the Fab Lab community split between French, Italian and other countries (and the last two groups are more integrated into each other than the French part). The distributions of the centrality measurements have remained similar to the previous analysis.

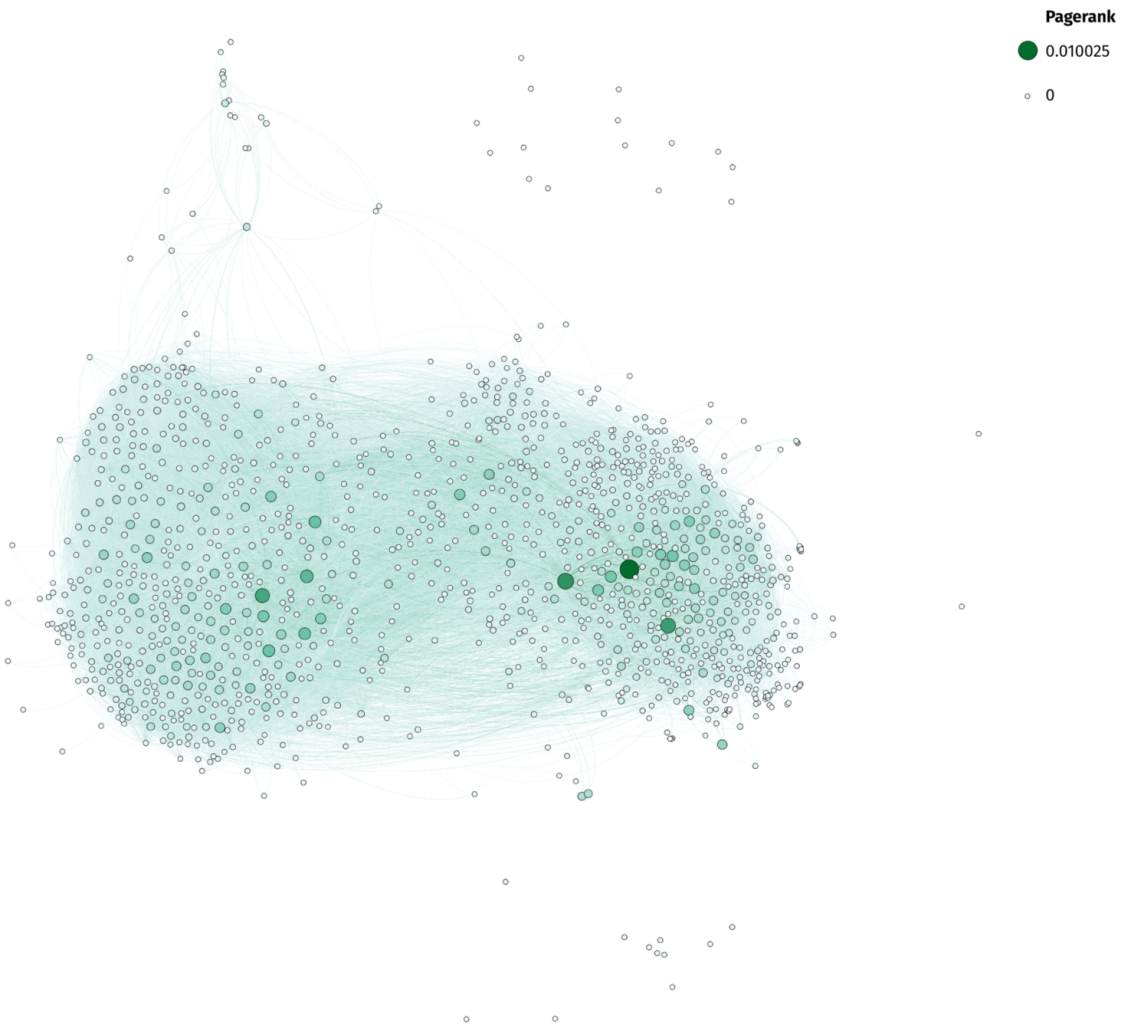


FIG. 14 Distribution of PageRank centrality in the network (color and size related to the value) (Source: Twitter, June 25 2019).

5 Conclusions

The Maker Movement, a social movement of democratization of digital technologies, has emerged through a mix of diverse both bottom-up and top-down initiatives almost everywhere. Because of this recent and mixed nature, tracking its evolution, expansion and interactions has not been a trivial task, and with this article we propose a way forward: from conceptual models and broad literature reviews for orienting how to explore it, to more specific literature reviews and data analyses about geographical distribution and social connections for exploring it. Data was gathered from digital platforms, and these analyses are also an example of the possibilities given by this global digital infrastructure.

The geographical distribution of Maker Laboratories shows inequalities and cultural differences, richness of resources and possibilities but also limitations for collaboration and initiatives. This complexity also constraints the elaboration of contributions towards policymakers and practitioners for at least two reasons. On one side, this research is still about the very first exploratory maps of the phenomenon, and more in-depth analyses are necessary in order to elaborate suggestions for policies and practice. On another side, local contexts and differences played a role in the emergence of the phenomenon, but the granularity of this analysis does not enable the highlighting of the differences made by each local context. The main contributions of this article are towards methodologies for understanding the unfolding of the Maker Movement geographically and socially but at global level. We suggest that further research should then focus on adopting and extending such methodologies with more in-depth analyses at local level in order to bring light to the contexts that influence and are influenced by the movement.

The social network analysis clearly identifies communities and sub-communities and their collaborations, and in some cases (France and Italy) it shows the importance of the geographical distribution on the social structure of the movement. This approach is also interesting for validating hypothetical and conceptual perspectives on the Maker Movement [Fig. 3] by adding more nuances in order to show the fuzziness and richness of structures and their boundaries.

Overall, for makers and designers, knowing their place on the geographical and social maps might unlock new projects, collaborations and distribution of such projects. An awareness of one's own position in these dimensions might enable the ability to consider strategies for creating value chains and supply chains while at the same time being able to understand their social impact. Initiatives for improving this understanding might further contribute to enabling makers to take the social entrepreneurs' role of creating a significant impact to their networks and communities by using business models that provide solutions for difficult and com-

plex social problems.[41] Platforms here are a key infrastructure for extending the reach of this activities to global level, either by scaling or sharing their assets and efforts, and also by understanding how local initiatives might generate impact.[42]

This exploratory approach has, however, some limitations. For example, the number and position of labs depends on how the data is gathered and filtered on the platforms, which has been shown to have redundancies, overlaps and might need more editing. The usage of Twitter is a simple way to get a proxy for social interactions, but real interactions should be then also assessed in order to validate the results obtained. Furthermore, sound research strategies for identifying missing accounts should be established, as not all laboratories might have created accounts. Traditional approaches such interviews might be used in order to fill these gaps.

At least three topics for further research emerge here. Firstly, the diversity of such networks of laboratories should be clarified, distinguishing the self-organized part and the institutional ones, in terms of fundings, accessibility, organizations and local ecosystems. Exploring the geographical distribution of laboratories should also contribute towards understanding what might have caused such distributions and how to connect laboratories taking their diversity in consideration, especially between the Global North and Global South. Secondly, the nature of the communities and sub-communities identified should be understood more: are these similar to online communities, ethnic groups or something else? How do cultural differences emerge and are self-perpetuated in such distributed systems? How do they relate to existing local contexts and how they could support or hinder future trajectories? Thirdly, given the centrality of platforms not just for these networks but also for the research upon them, future research should investigate their openness, impact and how they relate with social diversity.

We therefore suggest that future research should address these issues by both improving existing digital platforms or creating new ones that are more apt for the Maker Movement, and by integrating them with data from other sources and approaches. Furthermore, we suggest that the tools and results developed should be designed and tested with all the members and stakeholders of the Maker Movement.

---

41 Shaker A. Zahra et al., "A Typology of Social Entrepreneurs: Motives, Search Processes and Ethical Challenges," Journal of Business Venturing, Special Issue Ethics and Entrepreneurship, 24, no. 5 (September 1, 2009): 519–32.

42 Massimo Menichinelli and Alessandra Gerson Saltiel Schmidt, "Measuring the Social Impact of Maker Initiatives. Frameworks and Guidelines for Scaling the Assessment on Digital Platforms," in Sharing Society. The Impact of Collaborative Collective Actions in the Transformation of Contemporary Societies., ed. Benjamín Tejerina, Cristina Miranda de Almeida, and Ignacia Perugorría (International Conference Sharing Society (Bilbao, May 23-24, 2019), Leioa: Universidad del País Vasco/ Euskal Herriko Unibertsitatea, 2019), 526–37, accessed January 21, 2020, https://sharingsocietyproject.org/2019/05/08/conference-proceedings/.

Massimo Menichinelli, research fellow at RMIT University and doctoral candidate at Aalto Media Lab (Aalto University), has investigated, lectured, published and worked on the connections between Design and Open Source, Peer-to-Peer, Fab Labs and the Maker movement since 2005.

Alessandra Schmidt, head of AGS Invest, a consultancy firm focused on social and environmental development initiatives, supporting communities' pathways for social innovation. Graduated in Business, with a master in Social Development Practice at UCL. She is a former Chevening scholar at the Foreign and Commonwealth in the United Kingdom.

References

Alasdair, Allan. "3D Printing Using Genetically Modified Bacteria and Orange Juice." Make: DIY Projects, How-Tos, Electronics, Crafts and Ideas for Makers, November 15, 2014. Accessed January 21, 2020. http://makezine.com/2014/11/15/3d-printing-using-genetically-modified-bacteria-and-orange-juice/.

Álvaro Sánchez, Sandra. "A Topological Space for Design, Participation and Production. Tracking Spaces of Transformation."*Journal of Peer Production*, no. 13 (March 2019). Accessed January 21, 2020. http://peerproduction.net/issues/issue-13-open/peer-reviewed-papers/a-topological-space-for-design-participation-and-production/.

Anderson, Chris. *Makers: The New Industrial Revolution*. New York: Crown Business, 2012.

Bakırlıoğlu, Yekta, and Cindy Kohtala. "Framing Open Design through Theoretical Concepts and Practical Applications: A Systematic Literature Review." *Human–Computer Interaction* 0, no. 0 (February 22, 2019): 1–45. https://doi.org/10.1080/07370024.2019.1574225.

Bianchini, Massimo, Massimo Menichinelli, Stefano Maffei, Francesco Bombardi, and Alessandra Carosi. *Makers' Inquiry. Un'indagine Socioeconomica Sui Makers Italiani e Su Make in Italy*. Milano: Libraccio Editore, 2015. Accessed January 21, 2020. http://makersinquiry.org/.

Blondel, Vincent D., Jean-Loup Guillaume, Renaud Lambiotte, and Etienne Lefebvre. "Fast Unfolding of Communities in Large Networks." *Journal of Statistical Mechanics: Theory and Experiment* 2008, no. 10 (October 9, 2008): P10008. https://doi.org/10.1088/1742-5468/2008/10/P10008.

Bonvoisin, Jérémy, Tom Buchert, Maurice Preidel, and Rainer G. Stark. "How Participative Is Open Source Hardware? Insights from Online Repository Mining." *Design Science* 4, no. 19 (November 21, 2018). https://doi.org/10.1017/dsj.2018.15.

Bosqué, Camille, Constance Garnier, and Matei Gheorghiu. "Livre Blanc· Panorama Des Fablabs En France, 2017-18." Conseil Scientifique du Réseau Français des Fablabs (CS-RFFLabs), May 2019. Accessed January 21, 2020. http://www.fablab.fr/le-conseil-scientifique-du-rfflabs-a-le-plaisir-de-publier-son-livre-blanc-panorama-des-fablabs-en-france/.

Browder, Russell E., Howard E. Aldrich, and Steven W. Bradley. "The Emergence of the Maker Movement: Implications for Entrepreneurship Research." *Journal of Business Venturing* 34, no. 3 (May 1, 2019): 459–76. https://doi.org/10.1016/j.jbusvent.2019.01.005.

Delfanti, Alessandro. *Biohackers: The Politics of Open Science*. London: Pluto Press, 2013. Accessed January 21, 2020. http://escholarship.org/uc/item/5fq395w7.

Dougherty, Dale. *We Are Makers*. TED@MotorCity, 2011. Accessed January 21, 2020. http://www.ted.com/talks/dale_dougherty_we_are_makers.

Eberlein, Sven. "How to Start a Repair Café." *Shareable* (blog), March 29, 2013. Accessed January 21, 2020. https://www.shareable.net/how-to-start-a-repair-cafe/.

Garber, Elizabeth, Lisa Hochtritt, and Manisha Sharma, eds. *Makers, Crafters, Educators: Working for Cultural Change*. 1 edition. New York, NY: Routledge, 2018.

Geier, Ben. "What Did We Learn From the Dotcom Stock Bubble of 2000?" *Time*, March 12, 2015. Accessed January 21, 2020. http://time.com/3741681/2000-dotcom-stock-bust/.

Gershenfeld, Neil. FAB: *The Coming Revolution on Your Desktop--From Personal Computers to Personal Fabrication*. New York: Basic Books, 2005.

———. "How to Make Almost Anything: The Digital Fabrication Revolution." *Foreign Affairs*, 2012.

Hamalainen, Markko, and Jesse Karjalainen. "Social Manufacturing: When the Maker Movement Meets Interfirm Production Networks." *Business Horizons*, THE GENERATIVE POTENTIAL OF EMERGING TECHNOLOGY, 60, no. 6 (November 1, 2017): 795–805. https://doi.org/10.1016/j.bushor.2017.07.007.

Hatch, Mark. *The Maker Movement Manifesto. Rules for Innovation in the New World of Crafters, Hackers, and Tinkerers*. New York: McGraw-Hill Education, 2014.

Himanen, Pekka. *The Hacker Ethic and the Spirit of the Information Age*. New York, NY, USA: Random House Inc., 2001.

Hirscher, Anja-Lisa, and Ramia Mazé. "Stuff Matters In Participation: Infrastructuring A Co-Sewing Café." *Journal of Peer Production*, no. 13 (April 2019). Accessed January 21, 2020. http://peerproduction.net/issues/issue-13-open/peer-reviewed-papers/stuff-matters-in-participation/.

Holm, Eric Joseph Van. "Makerspaces and Contributions to Entrepreneurship." *Procedia - Social and Behavioral Sciences*, World Conference on Technology, Innovation and Entrepreneurship, 195 (July 3, 2015): 24–31. https://doi.org/10.1016/j.sbspro.2015.06.167.

Kemp, Adam. *The Makerspace Workbench: Tools, Technologies, and Techniques for Making*. Sebastopol: Make Books, 2013.

Lambiotte, R., J.-C. Delvenne, and M. Barahona. "Laplacian Dynamics and Multiscale Modular Structure in Networks." *ArXiv:0812.1770* [*Physics*], December 9, 2008. http://arxiv.org/abs/0812.1770.

Martin, Lee. "The Promise of the Maker Movement for Education." *Journal of Pre-College Engineering Education Research (J-PEER)* 5, no. 1 (2015): 4.

Martinez, Sylvia Libow, and Gary S. Stager. *Invent To Learn: Making, Tinkering, and Engineering in the Classroom*. Torrance, Calif.: Constructing Modern Knowledge Press, 2013.

Maxigas. "Hacklabs and Hackerspaces. Tracing Two Genealogies." *Journal of Peer Production*, no. 2 (July 2012). Accessed January 21, 2020. http://peerproduction.net/issues/issue-2/.

Menichinelli, Massimo. "A Data-Driven Approach for Understanding Open Design. Mapping Social Interactions in Collaborative Processes on GitHub." *The Design Journal* 20, no. sup1 (September 6, 2017): S3643–58. https://doi.org/10.1080/14606925.2017.1352869.

———. "A Framework for Understanding the Possible Intersections of Design with Open, P2P, Diffuse, Distributed and Decentralized Systems." *Disegno—The Journal of Design* Culture III, no. 01–02 (2016): 44–71. https://doi.org/10.21096/disegno_2016_1-2mm.

———. "Mapping the Structure of the Global Maker Laboratories Community through Twitter Connections." In *Twitter for Research Handbook 2015–2016*, edited by Clement Levallois, Morgane Marchand, Tiago Mata, and Andre Panisson, 47–62. Lyon: EMLYON Press, 2016. http://dx.doi.org/10.5281/zenodo.44882.

———. "WP7 MakerSpacesRadar." Zenodo, February 15, 2018. https://doi.org/10.5281/zenodo.1182468.

Menichinelli, Massimo, and Alessandra Gerson Saltiel Schmidt. "Measuring the Social Impact of Maker Initiatives. Frameworks and Guidelines for Scaling the Assessment on Digital Platforms." In *Sharing Society. The Impact of Collaborative Collective Actions in the Transformation of Contemporary Societies*., edited by Benjamín Tejerina, Cristina Miranda de Almeida, and Ignacia Perugorría, 526-37. Leioa: Universidad del País Vasco/ Euskal Herriko Unibertsitatea, 2019. Accessed January 21, 2020. https://sharingsocietyproject.org/2019/05/08/conference-proceedings/.

Menichinelli, Massimo, Alessandra Gerson Saltiel Schmidt, and Priscilla Ferronato. "Mapping Strategies for Distributed, Social and Collaborative Design Systems of Makers, Designers and Social Entrepreneurs." *Conference Proceedings of the Academy for Design Innovation Management* 2, no. 1 (November 30, 2019). Accessed January 21, 2020. https://doi.org/10.33114/adim.2019.01.378.

Menichinelli, Massimo, and Alessandro Ranellucci. "Censimento Dei Laboratori Di Fabbricazione Digitale in Italia 2014." Roma: Fondazione Make in Italy CDB, February 26, 2015. Accessed January 24, 2020. http://makersinquiry.org/edition02.html.

Rosa, Paulo, Federico Ferretti, Ângela Guimarães Pereira, Francesco Panella, and Maximilian Wanner. *Overview of the Maker Movement in the European Union*. EUR 28686 EN. Luxembourg: Publications Office of the European Union, 2017. https://doi.org/10.2760/227356.

Sharp, Darren. "The Repair Café Foundation Builds Community by Fixing Things." Shareable (blog), March 6, 2018. Accessed January 21, 2020. https://www.shareable.net/the-repair-cafe-foundation-builds-community-by-fixing-things/.

The Blueprint. "An Interview with Dale Dougherty." The Blueprint, May 13, 2014. Accessed June 14, 2016. https://theblueprint.com/stories/dale-dougherty/.

Tocchetti, Sara. "DIYbiologists as 'Makers' of Personal Biologies: How MAKE Magazine and Maker Faires Contribute in Constituting Biology as a Personal Technology." *Journal of Peer Production*, no. 2 (July 2012). Accessed January 21, 2020. http://peerproduction.net/issues/issue-2/.

Unterfrauner, Elisabeth, and Christian Voigt. "Makers' Ambitions to Do Socially Valuable Things." *The Design Journal* 20, no. sup1 (September 6, 2017): S3317–25. https://doi.org/10.1080/14606925.2017.1352835.

Zahra, Shaker A., Eric Gedajlovic, Donald O. Neubaum, and Joel M. Shulman. "A Typology of Social Entrepreneurs: Motives, Search Processes and Ethical Challenges." *Journal of Business Venturing*, Special Issue Ethics and Entrepreneurship, 24, no. 5 (September 1, 2009): 519–32. https://doi.org/10.1016/j.jbusvent.2008.04.007.

CPCL Vol.2 no.2 | 2019

CPCL
EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES

MAIN SECTION

Collaboration at New Places of Production: a European View on Procedural Policy Making for Maker Spaces

Bastian Lange — University of Leipzig (Germany) — Bastian.Lange@uni-leipzig.de
Steve Harding — Birmingham City University (United Kingdom) — Steve.Harding@bcu.ac.uk
Tom Cahill-Jones — Birmingham City University (United Kingdom) — tom.cahill-jones@bcu.ac.uk

ABSTRACT
The paper sheds light on a university-led cross-innovation approach where the focus is on so-called "Makers" as a distinctive local group. We introduce the format of a policy clinic—comparable to policy innovation labs—as a method to bring different stakeholders from various local contexts under a given thematic topic temporarily together to learn how to initiate new policies for maker spaces. The key thematic interest is to focus on city challenges and approaching so-called "wicked problems." This requires wide stakeholder engagement by others not present at the event of the policy clinic. The clinic is a temporary trans-local event but is framed by wider participation involvement that starts earlier and is accompanied by a number of approaches before the Policy Clinic event takes place.

KEYWORDS
Policy Clinic; Translocal; Policy Making; Collaboration.

PEER REVIEWED
https://doi.org/10.6092/issn.2612-0496/9556
ISSN 2612-0496

1. Introduction

The focus on the phenomenon of self-organized local spaces of production such as Fab Labs, maker spaces, coworking spaces, alternative worklabs, Repair Cafés and many others have raised the interest of many local administrations on how to support, to frame, and to upscale these spaces.[1] Our paper contributes to the debate on self-organized policies as well as local-regional support mechanisms by constructing a spatial view on the governance and steering modes between public and private bodies that goes beyond the geographical fix.[2]

While many scholars have discussed these new local spaces from the point of view of geographical and social places, the following perspective will be introduced: how are interregional communities of practice from various cities in Europe aiming at developing a procedural view on building up and supporting maker spaces in local spaces? Here, Budge argues that "existing research points to tensions and absences in relation to policy and planning for creative precincts, including makerspaces."[3]

Our research interest as well as our theoretical starting point takes this as a key reference argument to take a closer look at the role of policy making for maker spaces in the urban context. Thereby our view on policy making is grounded on a perspective of procedural learning and knowledge. From this point of view, mixed expert, policy and maker communities co-create the social context in order to activate new economic development. As a process of co-creation, our argument is built on a spatially sensitive practice-based theory approach as well as on the role of interaction among diverse user groups from various disciplines and institutions. Our aim is to understand policy making for maker spaces from an interaction and socio-spatial perspective and from a point of view of policy making co-creation.

In this way, the role of place and scale should be brought forward to enrich the analytical benefits from an urban and economic viewpoint. In doing so, a growing number of open maker spaces have recently

1. Jacki Schirmer, "Scaling up: Assessing Social Impacts at the Macro-Scale," *Environmental Impact Assessment Review* 31, no. 3 (April 1, 2011): 382–91; Kylie Budge, "Making in the City: Disjunctures between Public Discourse and Urban Policy," *Australian Geographer* 50, no. 2 (2018): 185–99; Kylie Budge, "The Ecosystem of a Makerspace: Human, Material and Place-Based Interrelationships," *Journal of Design, Business & Society* 5, no. 1 (March 1, 2019): 77–94.

2. Our paper contributes to the debate on self-organized policies as well as local-regional support mechanisms by constructing a spatial view on the governance and steering modes between public and private bodies that expands policy making in geographically fixed boundaries. We emphasize situational, flexible and adaptive policy-making processes that expand policy making beyond geographically (e.g. regionally or locally) fixed boundaries. See James R. Faulconbridge, "Stretching Tacit Knowledge beyond a Local Fix? Global Spaces of Learning in Advertising Professional Service Firms," Journal of Economic Geography 6, no. 4 (August 1, 2006): 517–540; Ben Williamson, "Governing Methods: Policy Innovation Labs, Design and Data Science in the Digital Governance of Education," Journal of Educational Administration and History 47, no. 3 (2015): 251–271.

3. Budge, "The Ecosystem of a Makerspace," 82. See also Budge, "Making in the City."

emerged as a research subject.[4] Those attempts are either aiming at identifying the structuring role of these "social innovation places"[5] or better understanding self-organized transition processes on the way to a sustainable society.[6]

Policy making in these urban and regional situations has been criticised for some time for its formalized directive top-down policy making processes.[7] As a consequence, to increasing demands on urban and regional question of justice, social integration, economic innovation and sustainability, policy instruments need to be responsive to support spatial, innovation and skills strategies in timely and inclusive ways.[8]

With the help of spatial-theory enriched policy concepts, a procedural and reflective process will be proposed showing how maker spaces could be placed, orchestrated, and supported. We ground our argument on a European-funded learning project, called Urban Manufacturing (2016-2021) that seeks to find practical and procedural tools and instruments for policies for improving maker spaces. We reflect on various phases of learning, of peer-reviewing, and of creative design tools to stimulate joint and shared knowledge creation among heterogeneous participants from creative disciplines as well as from public administration, academic institutions and the creative industries.

In the following two sections, new approaches to policy planning will be proposed to meet the needs of heterogeneous social, cultural and economic interests. Section three introduces several key factors driving new modes of working in local and urban contexts that are based on the construction of a temporary translocal creative space aiming at finding new steering measures for maker spaces. This will be presented in sections 4 and 5. contextualized and concluded in section 6 and 7.

---

4. Adrian Smith, Mariano Fressoli, and Hernán Thomas, "Grassroots Innovation Movements: Challenges and Contributions," *Journal of Cleaner Production*, Special Volume: Sustainable Production, Consumption and Livelihoods: Global and Regional Research Perspectives, 63 (January 15, 2014): 114–24; James Evans and Andrew Karvonen, "'Give Me a Laboratory and I Will Lower Your Carbon Footprint!'—Urban Laboratories and the Governance of Low-Carbon Futures," *International Journal of Urban and Regional Research* 38, no. 2 (2014): 413–430; Andrew Karvonen and Bas van Heur, "Urban Laboratories: Experiments in Reworking Cities," *International Journal of Urban and Regional Research* 38, no. 2 (2014): 379–92.

5. Gavin Bridge et al., "Geographies of Energy Transition: Space, Place and the Low-Carbon Economy," *Energy Policy* 53 (February 1, 2013): 331–40, ; Frank Nevens et al., "Urban Transition Labs: Co-Creating Transformative Action for Sustainable Cities," *Journal of Cleaner Production*, Special Issue: Advancing sustainable urban transformation, 50 (July 1, 2013): 111–22.

6. Uwe Schneidewind and Karoline Augenstein. "Three Schools of Transformation Thinking: The Impact of Ideas, Institutions, and Technological Innovation on Transformation Processes," *GAIA—Ecological Perspectives for Science and Society*, 25, no. 2 (2016): 88-93.

7. Patsy Healey et al., eds., *Managing Cities: The New Urban Context* (Chichester ; New York: Wiley, 1995).

8. Hubert Heinelt and Daniel Kübler, *Metropolitan Governance in the 21st Century: Capacity, Democracy and the Dynamics of Place* (London and New York: Routledge, 2004).

2. Conceptual starting points

2.1 Local knowledge creation in global competitive contexts

The first starting point is to ask how democratic, scientific and educational institutions develop new collaborative learning and transfer fields against the background of global and regional competitive situations in order to respond to changing social and entrepreneurial expectations as well as to knowledge-specific expectations.[9] Local administrations, universities and educational institutions are faced with the challenge of, on the one hand, maintaining a plurality of disciplines and, on the other hand, meeting increasing performance expectations that are critical to decision-making at comparable European and global assessment levels.[10]

Following this line of thinking, an explanation of how universities and higher education institutions on the one hand demonstrate practices and formats for the achievement of the so-called Third Mission is needed. In addition to internal entrepreneurship processes, the "open university" path opens up a broad field in which various transfer workshops and laboratories seek to play a mediating role between learning and seminars related to credit points on the one hand, and application-oriented, practical labour market experiences on the other.[11]

On the other hand, the goal of universities is to achieve relevant transdisciplinary answers to regional economic or regional cultural challenges with small and medium enterprises (SMEs), civil society and intermediary actors in a collaborative knowledge production process. The design methods at the methodological-didactic level can be identified as collaborative co-creation formats.[12] Their concrete negotiation and workspaces are addressed here as "third places"[13] within the policy and knowledge agenda of the so-called "third mission of universities."[14]

---

9. Philip Cooke and Dafna Schwartz, *Creative Regions: Technology, Culture and Knowledge Entrepreneurship* (London and New York: Routledge, 2008); Ed Malecki and Gert-Jan Hospers, "Knowledge and the Competitiveness of Places," in *The Learning Region*, ed. Roel Rutten and Frans Boekema (Cheltenham: Edward Elgar Publishing, 2007), 143–159.

10. Paul Vallance, "Universities, Public Research, and Evolutionary Economic Geography," *Economic Geography* 92, no. 4 (October 1, 2016): 355–377; Michael Harloe and Beth Perry, "Universities, Localities and Regional Development: The Emergence of the 'Mode 2' University?," *International Journal of Urban and Regional Research* 28, no. 1 (2004): 212–23.

11. Evans and Karvonen, "'Give Me a Laboratory and I Will Lower Your Carbon Footprint!'—Urban Laboratories and the Governance of Low-Carbon Futures"; V. Kostakis and M. Bauwens, *Network Society and Future Scenarios for a Collaborative Economy* (Palgrave Macmillan UK, 2014); Nevens et al., "Urban Transition Labs."

12. Katja Fleischmann, Sabine Hielscher, and Timothy Merritt, "Making Things in Fab Labs: A Case Study on Sustainability and Co-Creation," *Digital Creativity* 27, no. 2 (April 2, 2016): 113–31.

13. Eugenia Vathakou, "Citizens' Solidarity Initiatives in Greece during the Financial Crisis," in *Austerity and the Third Sector in Greece*, ed. Jennifer Clarke et al. (London and New York: Routledge, 2016); Anna Seravalli, "While Waiting for the Third Industrial Revolution: Attempts at Commoning Production," in *Making Futures: Marginal Notes on Innovation, Design, and Democracy*, ed. Pelle Ehn, Elisabeth N. Nilsson, and Richard Topgaard (Cambridge, MA: The MIT Press, 2014), 99–129.

14. Edward W. *Soja, Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places* (Hoboken, NJ: Wiley, 1996).

2.2 A spatial view on fulfilling the "Third Mission"

For universities, the Third Mission has added a third academic mission to the two missions of teaching and research. This means, according to Roessler et al., that already today academic researchers are much more involved in areas that are not exclusively to be attributed to teaching or research and are perceived as public. According to them, the task is to link universities with civil society and companies.[15]

Third Mission includes, for example, cooperation projects with partners outside the higher education landscape, networks and regional working groups, e.g. with municipalities, or programmes in the field of continuing education.[16] The term gives a name to activities, tasks and achievements that universities have been practicing for many years in addition to teaching and research. Since the late 1980s, there has been a discussion about the third mission of universities. The theoretical approaches are based on the more economic concepts of the "entrepreneurial university" and Mode-2.[17]

In concrete terms, this means that, in addition to the traditional tasks in research and teaching, higher education institutions also carry out activities that can be of benefit to their respective regions. These can be training courses, scientific support for regional processes and knowledge transfer in a variety of forms. This activity also includes cooperative research projects with regional companies. Third Mission is thus a strategic profile-building task. In practical terms, this means, for example, initiating cooperation that achieves transfer effects between companies, students and universities.

---

15. Isabel Roessler, Sindy Duong, and Cort-Denis Hachmeister, *Welche Missionen Haben Hochschulen?: Third Mission Als Leistung Der Fachhochschulen Für Die Und Mit Der Gesellschaft* (Gütersloh: Centrum für Hochschulentwicklung GmbH, 2015), accessed January 20, 2020, https://www.che.de/wp-content/uploads/upload/CHE_AP_182_Third_Mission_an_Fachhochschulen.pdf.

16. Markus Bretschneider and Ekkehardt Nuissl, "'Lernende Region' Aus Sicht Der Erwachsenenbildung," in *Lernende Region-–Mythos Oder Lebendige Praxis*, ed. Ulf Matthiesen and Gerhard Reutter (Bielefeld: Bertelsmann Verlag, 2003), 35–55.

17. For the concept of "entrepreneurial university" see Harloe and Perry, "Universities, Localities and Regional Development"; Henry Etzkowitz and Loet Leydesdorff, "The Dynamics of Innovation: From National Systems and 'Mode 2' to a Triple Helix of University–Industry–Government Relations," *Research Policy* 29, no. 2 (February 1, 2000): 109–23. For the concept of Mode-2 see Gerd Bender, "mode 2— Wissenserzeugung in globalen Netzwerken?," in *Stadtregion und Wissen: Analysen und Plädoyers für eine wissensbasierte Stadtpolitik*, ed. Ulf Matthiesen (Wiesbaden: VS Verlag für Sozialwissenschaften, 2004), 149-157; Helga Nowotny, Peter B. Scott, and Michael T. Gibbons, *Re-Thinking Science: Knowledge and the Public in an Age of Uncertainty* (Hoboken, NJ: John Wiley and Sons, 2001); Michael Gibbons, *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies* (London & Thousand Oaks, CA: SAGE Publications Ltd, 1994).

As yet not a subject of much discussion, universities have started to develop internal innovation spaces[18] or so-called Third Places.[19] The term Third Places is an answer to what universities and colleges want to achieve in concrete terms: in addition to teaching and research on the one hand, and practice and application on the other, they organise transfer to business and society and to offer the necessary places, infrastructures and methods. Third places can be transfer workshops that bring two spheres together—such as SMEs and students—productive exchanges with new offers of interaction and solution-oriented methods.[20]

This means that the Third Mission is geared to growing new regional potential, or that it creates new institutions in order to help focus public expectations and demands for societal change. Collaboration, as a distinct asset of knowledge competence and as the key to a successful transition design, is at the centre of this approach.

2.3 Policy making in new translocal and temporary social fields of action

The growing number of bottom-up spaces recently has challenged policy makers on how to best support these initiatives. In addition to state-led new governance models and participation opportunities, a new generation of city entrepreneurs seeks to help define their work and living environments to meet their needs and aspirations in a collaborative and common-based way.[21] Cities have long been places engaged with their diaspora communities for bringing fresh cultural perspectives and issues of inclusivity to the fore in terms of public policy.[22] As a structural consequence and due to the reverse effects of the internet, paradoxically, local and regional production is now more possible, and this is fuelled by a need for authenticity in terms of product, service, and practical making.[23] This brings local public administration to the centre of attention.

This socio-political and socio-economic re-positioning is nevertheless difficult to achieve for public administration in cities. This is mainly because asymmetrical speeds of different urban and regional developments add to the often-mentioned slowness of the response by policy makers. Although there is a recognition of the constraints of the cyclical nature of policy making which is often at odds with the needs on the ground:

18. Umut Toker and Denis O. Gray, "Innovation Spaces: Workspace Planning and Innovation in U.S. University Research Centers," *Research Policy* 37, no. 2 (March 1, 2008): 309–29.

19. Ramon Oldenburg and Dennis Brissett, "The Third Place," *Qualitative Sociology* 5, no. 4 (December 1, 1982): 265–84.

20. Bastian Lange, "Kreative Interventionen. Innovationswerkstätten als beispielhafte Impulsgeber für Kollaboration in der Peripherie," in *Kreative Pioniere in ländlichen Räumen: Innovation & Transformation zwischen Stadt & Land*, ed. Katja Wolter, Daniel Schiller, and Corinna Hesse (Stuttgart: Steinbeis-Edition, 2018), 440–464.

21. Smith, Fressoli, and Thomas, "Grassroots Innovation Movements."

22. Karvonen and Heur, "Urban Laboratories."

23. Richard Sennett, *The Craftsman* (London: Allen Lane, 2008).

For example, the development of policies in the European Structural and Investment Funds (ESIF) context is in a seven-year cycle. In addition to that, there are attempts to analyse first-hand approaches how to respond to these developments from the perspective of policy making. Based on an increased number of urban and regional successful innovative social collectives[24] there is an increasing curiosity in respect of speeding up collaborative decision-making by policy makers to create collective methods for site-specific common purposes. There is also a tendency for policy makers to plan in silos and for the sectors themselves to work in isolation from each other which exacerbates the problem.

The issue to be addressed is: where are new policies invented and negotiated out of the administrative "silos" and routinized habits and networks?

It is of interest how meetups are a category of temporary social events and can be understood as an expression of spatially relevant patterns of action among various geographically distributed networks and stakeholders. Short-term events aggregate resources and allow specific actions outside of the formal routines and habits. Out of such events, the creation of formal or at least temporary institutions can be coordinated and communicated afterwards.

Such approaches are often based on the concept of locally-limited and routed "creative," social and cultural capital—as e.g. design thinking methods—of mobilizing existing and new demands. In temporary notions of proximity, space is understood as a form of physical, cultural or institutional proximity between local and translocal market participants that come together for specific purposes (in this case the forming of policies for maker spaces).

Often, paradoxically, this local proximity can itself be regarded as a fixed unit. Recently, against this static perception of spatial proximity that addresses the sequences of practices and processes in a given space has been changed to the formation of dynamic, temporary and relational concepts in the organization of local/translocal networks, exchanges and institutions.[25]

---

24. Frank Othengrafen, Luis del Romero Renau, and Ifigeneia Kokkali, "A New Landscape of Urban Social Movements: Reflections on Urban Unrest in Southern European Cities FRANK OTHENGRAFEN, LUíS DEL ROMERO RENAU, AND," in *Cities in Crisis*, ed. Jörg Knieling and Frank Othengrafen (London and New York: Routledge, 2015), 169–184.

25. Oliver Ibert, Johanna Hautala, and Jussi S. Jauhiainen, "From Cluster to Process: New Economic Geographic Perspectives on Practices of Knowledge Creation," *Geoforum* 65 (October 1, 2015): 323–327; Oliver Ibert, "Relational Distance: Sociocultural and Time–Spatial Tensions in Innovation Practices:," *Environment and Planning* A, 2010.

3 New spaces for knowledge creation and key recent development trends – a first summary

The following aspects mark some first conceptual findings from where to start our view on new spaces and policy making for maker spaces.

3.1 New collaborative fields for policy making

Exploring these conceptual aspects together, our research approach acknowledges the changed relations between science and society observed in recent years through new forms of knowledge production and collaborative exchange. This is expressed in new collaborative concepts such as "open innovation,"[26] the "mode 2" knowledge production[27] or "transdisciplinary research" (TD), which are particularly widespread in sustainability sciences.[28]

Against the background of complex real-world problems and a large number of groups of actors with different perspectives, interests, values and knowledge, the question is to what extent a spatial view can offer relevant insights into the creation of policy means that take part across silos, sectors, and established routines in order to support maker spaces.

3.2 Maker spaces as starting points to regenerate urban areas

From a geographical view, makers in the wide field of Cultural and Creative Industries (CCI)—mainly a new type of cultural entrepreneur in combination with cultural and creative initiatives—often acted as pioneers for activating less used spaces.[29] Though Cultural and Creative Industries are mainly an established field of policy making, there is a need to include the growing number of creative entrepreneurs, freelancers, self-employed agents into suitable policies.[30] Their collective place-making achievements, e.g. the installation of fab labs, coworking spaces, and creative workshops[31] have raised the attention of policy makers in how to create conditions for economic growth for tech entrepreneurs, makers and SMEs. These "sticky places"[32] aim at attracting and retaining "talent" for the urban based-knowledge economy.

---

26. Henry William Chesbrough, Wim Vanhaverbeke, and Joel West, *New Frontiers in Open Innovation* (Oxford: Oxford University Press, 2014).

27. Gibbons, *The New Production of Knowledge*.

28. Schneidewind and Augenstein, "Three Schools of Transformation Thinking."

29. Bastian Lange, "Accessing Markets in Creative Industries—Professionalization and Social-Spatial Strategies of Culturepreneurs in Berlin," *Creative Industries Journal* 1, no. 2 (January 1, 2009): 115–35.

30. Budge, "Making in the City"; Budge, "The Ecosystem of a Makerspace."

31. Bastian Lange, Dominic Power, and Lech Suwala, "Geographies of Field-Configuring Events," *Zeitschrift Für Wirtschaftsgeographie* 58, no. 1 (2015): 187–201.

32. Ann Markusen, "Sticky Places in Slippery Space: A Typology of Industrial Districts," *Economic Geography* 72, no. 3 (July 1, 1996): 293–313.

3.3 The search for inclusive innovation policies

From a policy making point of view, many regions aim at rolling out their innovation agenda within what is known as culture and creative industries. Software and games industries, in particular, act as catalysts for transition and growth with other sectors. For instance, the interconnection of the health segment with software and games industries is a widely known cross-sectorial case that triggers inclusive policies that stem from cross sectoral innovation practices between these branches.[33]

As mentioned above, blueprint policies are hardly ever accepted on a regional and local level. The shift from Generation X to Millennials is marked by the desire for individuality and meaning in the work environment, the need for sustainability and responsible growth with the reality of competition in a global world economy. This has left regional policy makers puzzled as to how to design new places of encounters between creative people, civic society, enterprises and policy makers.

The need for changed contribution and participation derives from the paradigmatic shift of digitization. In the course of a changed nature of employment and new competencies and skills ensuring all citizens benefit from these changes, the need to overcome enclosed social and innovative silos in terms of both physical space and to allow for creative thinking and innovation is of foremost importance on the local-regional policy agenda.[34]

3.4 Our research and methodological view on new approaches to policy making and its design in changing worlds

These indicative drivers suggest a need for new approaches to policy planning as a responsive process in order to meet the changing needs of policy makers. As a reference case, a university-led cross-innovation approach will be showcased where the focus is on so-called "makers"[35] as a distinctive group which has the characteristics of these key factors mentioned above in section 3.1. to 3.3.

We introduce the format of a so-called policy clinic, that stems from learning organisation practice, from "learning by doing"[36] and aspects of "hack" practice—collaborative and intensive activity on a shared topic which is outcome-orientated. It therefore suggests a time-limited focused activity addressing a "problem" through sharing of expertise.

---

33. Chesbrough, Vanhaverbeke, and West, *New Frontiers in Open Innovation*.

34. Seravalli, "While Waiting for the Third Industrial Revolution."

35. Chris Anderson, *Makers: The New Industrial Revolution* (New York: Random House, 2012).

36. Chris Argyris, *Organizational Learning II: Theory, Method, and Practice* (Boston, MA: Addison-Wesley Publishing Company, 1996).

The policy clinic format is comparable to policy innovation labs,[37] a methodology to bring different stakeholders from various local contexts under a given thematic topic temporarily together to learn how to initiate new policies for maker spaces.

The key thematic interest is to focus on city challenges and approaching so-called "wicked problems." This requires wide stakeholder engagement by others not present at the event of the policy clinic. The clinic is a temporary event but is framed by wider participation involvement that starts earlier and is accompanied by a number of approaches before the policy clinic. We will now describe these factors and the nature of challenges that help frame the context for the policy clinics from a spatial point of view that goes beyond the understanding to develop relevant forms of knowledge in a geographically-bound entity.

4 The case of Urban M (Urban Manufacturing)

Essentially framed by an EU-policy learning approach, the Urban M project looks at makers and how cooperative working can be supported to break down silos at the city region level for establishing productive and supportive frames: this could be maker spaces or FabLabs. This became the basis for the project supported through the EU Interreg Europe Programme. The partnership led by Birmingham City University (BCU) comprises Lisbon, the Italian region of Lazio, Bratislava, Vilnius, Zagreb, Birmingham, Kranj and San Sebastian and runs from 2017 through to 2021.

The Urban M partnership seeks to address the needs of cities for collaborative maker spaces, these can be characterised as fab labs[38] working with policy makers at the city and regional levels. Urban M focuses on specific innovation policies and how they can be adapted to allow for collaboration at the governance, policy and project level. The partners are at different levels of development and spread geographically across Europe.

The intention of Birmingham City University (BCU), supported by a core team of external experts, was from the start to develop a framework of policy support which is responsive and informed by users taking into account design thinking principles.[39] Urban M can therefore be seen as addressing the new modes of living and working in urban environments at a policy level, by focusing on the establishment of fab labs and creative entrepreneurship, on the need to break down silos in the innovation eco system, as well as on the role of millennials as entrepreneurs in the new forms of work in a "maker" economy.

---

37. Williamson, "Governing Methods."

38. Fleischmann, Hielscher, and Merritt, "Making Things in Fab Labs."

39. Design thinking requires a user perspective for the development and delivery of products and services

5 Methodology, empirical steps, and findings of the policy clinic approach

The policy to be tackled in the context of the Urban M programme is discussed and agreed first at the level of the local public authority. For Interreg Europe this has to be defined with clear objectives to improve support for maker spaces. For example, with the development of an innovation ecosystem in a city or region to include maker spaces, of commercial routes to market for makers to encourage business sustainability and with the development of policies to support SME's analytical approach through science (STEM) and creative thinking through the Arts.

Once the policy to be tackled is agreed, stakeholders are then convened by the public authority to meet, facilitated by the local partner as a Steering Group to act as a "critical friend" for the policy makers throughout the project. Members of the Steering Group are directly involved in seeking to implement the policy and will attend study visits and bilateral discussions throughout the Urban M project to share good practices and support the implementation of the policy changes.

The Lead Partner, in this case BCU, analyses the type of changes to be tackled and then groups the policies together to reflect partners with similar needs. These can be along the lines of "how maker spaces can support the innovation eco system," "how maker spaces can be commercialised to ensure sustainability" and "how maker spaces can support grassroots innovation."

This initial grouping of themes is then agreed at a meeting of all the partners and the Policy Clinics are then designed and planned by the lead Partner so that each partner city hosts at least one Policy Clinic and also attends a minimum of one.

This is the moment when the policy clinic demonstrates its potential as an event-based social framework. Timewise it is short, it allocates all essential stakeholders for at least 1-2 days and the European funding frame with European partner cities and potential accesses to foreign markets creates higher attention than any local innovation policy. The events triggers decision outside the everyday routines and therefore needs careful planning as well as short-time formats (that of the policy clinic) to allow change.

Within the event, policy makers are requested to collaborate with each other and with entrepreneurs, freelancers and members of SMEs, identifying strategies for policy changes. The lead partner and external experts have devised a sequential "policy clinic methodology" to firstly set out the common policy areas from the strategies of the partners. This is essentially a desk research exercise on the partners' policies to draw out key points and seek commonalities.

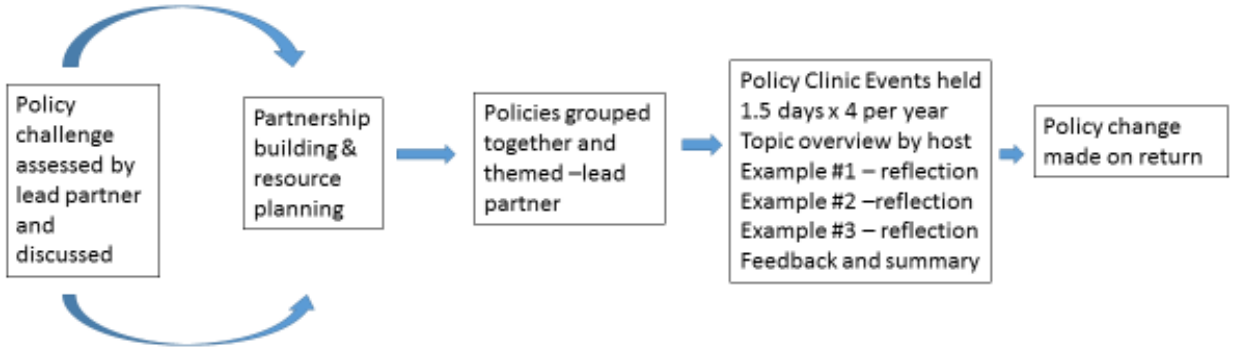


FIG. 1 Iterative policy making as a "Third place"-approach with the help of policy clinics (Urban M Project Team, Birmingham City University).

The approach starts focusing on key aspects and themes identified by the lead partner-team to reflect back to the partners. Topics have included "how can collaborative approaches help commercialisation of maker spaces?" and "the maker space and education, how best to engage with schools, the tertiary sector and universities." The topic is agreed and hosted by the partner city/region joined by on average two to three partners most closely aligned and interested in the topic. The approach is iterative in nature—it takes open discussion and mutual trust to focus on the innovation challenge with the host partner and to then communicate with the other partners the nature of the topic and the applicability for them. This can be shown diagrammatically as in Figure 1 [Fig. 1].

The Policy Clinic format is usually scheduled as a one-day-and-a-half event with expert meetings among practitioners, policy makers, and local actors. Stakeholders form a temporary collective and manifest a translocal "community of practice."

Participants then move to three or four site visits which exhibit different aspects of the challenge—such as how a maker space engages with the research base or how it coordinates activity with other innovation providers and SMEs. These site visits are project-specific and inputs are made from staff on the ground lasting around two hours. There is specific time at the end of each visit for partners to record their ideas (on a pro forma provided by the lead partner-team) and give immediate feedback. This is effective as a "reaction" to the visit enabling an immediate clear focus and supports the iterative nature of the process.

The final session on day two is structured around the participants discussing and agreeing key points for feedback following the site visits and scene setting remarks. The external experts also feedback drawing from examples from similar contexts beyond the immediate partnership and commenting on key issues and the success factors from the projects. The session concludes with a session led by a facilitator where key points are listed for the host city to consider as well as the learning points for the participating cities. Finally, on return, the lead partner-team reflects

on all the individual points and suggestions and makes a series of recom mendations in a report as possibilities for the host in terms of changes to governance, policies or the introduction of new projects.

6 The distinctiveness of the Policy Clinic approach

6.1 Thematic view on effects of the policy clinic for policies for maker

The approach is inclusive and emphasises pro-active participation. The Policy Clinics have "learning by doing" and reflection by working in teams as key elements.[40] The challenges are real examples from the policy makers seeking solutions to tackle problems. The policy clinics build on the philosophy of a community of practice in the project.[41]

A key aspect is the focused nature of the event, a realisation that policy makers want tangible outcomes rather than broad insights where applicability is not so clear. The approach is positive in nature—building on what works and seeking to gather and understanding why this is so, following an appreciative enquiry approach.[42]

The approach has elements of design thinking methodology. Challenges are presented and emerging solutions are then discussed as key issues to be addressed then prioritised for action. These policy actions are further developed in discussion with stakeholders after the Policy Clinic itself. Resources are allocated and ideas taken forward and tested as pilot actions to be mainstreamed. It is an iterative process and learning is a recurring factor throughout. The Policy clinics require a good degree of trust—the participants recognise the different starting points and contexts and that insights will come from a range of participants. This means that policy makers working in new contexts may be able to quickly learn from more established systems and think of new possibilities (the situation of policy makers in cities/regions new to the EU).

The sessions are timely—feedback is over a short period and this means that participants in the clinic can reflect and absorb the learning from the event in their day to day practice.

---

40. Argyris, *Organizational Learning II*.

41. Etienne Wenger, *Communities of Practice: Learning, Meaning, and Identity* (Cambridge, MA: Cambridge University Press, 1999).

42. David Cooperrider and Suresh Srivastva, "Appreciative Inquiry in Organizational Life," ed. Richard W. Woodman and William A. Pasmore, vol. 1, Research in Organizational Change and Development (Greenwich, CT: JAI Press, 1986), 81–142.

6.2 Spatial view on social events as a frame for policies of maker spaces

Referring to policy making as a form of social practice and of co-creation while encountering different stakeholders, these approaches take place in specific flexible and temporary geographies. By introducing the methodology of the case clinic, the role of temporary events and temporary fields has been highlighted where different expertise come together in order to systematically find answers on how to strengthen maker spaces and the new culture of making in urban context. Whereas the literature on temporary fields and co-creation seems to be blind, our case contributes to this debate by pointing to the following aspects.

First, interaction and encounters do need systematic framing by facilitators and moderators in order to allow for focused conversation.

Second, prototyping methods that stem from design thinking are helpful in order to allow for a strict user-centred perspective in short time spans. Systematic methodologies allow for rapid development of prototypical first-hand solutions on site-specific and distinct local problems.

Third, translocal knowledge and expertise from other cities are a vital resource to support and to challenge local policies.

Fourth, policy making out of the formal democratically-legitimized field of voting and contributing to the public good, is based on mutual trust building. The observed policy clinics take this into account because, seeing, social proximity, and exchanging on rather site-specific contexts than abstract and meta-complex issues dynamizes mutual understanding and exchange.

In doing so, policy clinics reinvent participatory-based policies which in paradoxical times of shrinking acceptance of the policies and increases the need to steer public commons in urban and regional contexts.

7 Conclusions

The cities and region hosting the Policy Clinic each take away a range of specific insights on policies and processes. However, the policy benefits if this were the only outcome would not be as profound or useful.

For example, San Sebastian took away the need for *consolidation* of innovation policies to enable synergies between the maker and innovation communities. This for San Sebastian highlighted the need to develop an evidential base and to argue for a long-term approach in the next round of ESIF 2020-2027.

For the region of Lazio, the policy clinic acted as a *validation* of the policy of design thinking based on city challenges. This is already evidenced in the maker community and other innovation actors can now be supported

by focusing on this approach to better connect with the Lazio ecosystem for internationalisation and commercialisation.

In respect of the city of Lisbon, the focus was agreed on better *connectivity* within the ecosystem with targeted support for expertise for commercialisation at all levels to maximise the economic output of the maker and knowledge intensive sectors.

A logical next step for the methodology is to engage with users and citizens more directly using the same methodology and philosophy—a deeper understanding of the quadruple helix approach to planning.

8 Outlook: Further applications of the Policy Clinic approach

The approach fits well where there are common challenges across territories and cities where new ideas and approaches need to be tested. A challenge-based methodology fits well in this respect. There is a sense of a "community of practice" underpinning rationale in the Policy Clinic approach—whereby individuals can engage within a defined set of shared knowledge but can be stretched to thinking of new possibilities. The direct input of specific project experiences on the ground makes this process insightful for these policy makers.

Secondly, the Policy Clinic approach works well where there is a need for policy to be responsive to fast changing needs and for the policy process to become more visible and more porous and accountable with contributions at different levels.

Thirdly, the Policy Clinic process can be useful in validating existing aspects of successful policy and practice to enable this to be rolled out more effectively in a city or region.

Fourthly, seeing, exchanging on site-specific contexts rather than abstract and meta-complex issues dynamizes mutual understanding and exchange. Policy clinics reinvent participatory-based policies with high-level on-site focuses, in paradoxical times of shrinking acceptance of policies and increasing needs to steer public commons in urban and regional contexts.

Bastian Lange, Dr. phil., private lecturer at the University of Leipzig. He taught as guest professor (2011-2012) at Humboldt University Berlin (2011-2012) and University of Vechta (2018-2019). In 2008 he founded the independent research and consultancy office Multiplicities in Berlin. For 13 years Multiplicities has been supporting politics, business and creative scenes in the European context on ways to sustainable urban regions. Multiplicities advises municipalities, cities, federal states and EU programmes on the development of innovative places with collaborative participation processes.

Harding, Steve, Dr., is the Coordinator of Birmingham City University's STEAM Fellows Programme working with academics towards the opening of a new interdisciplinary campus focussing on how the Arts can add critical insights to the analytical approaches of STEM. He has been active in many transnational projects focussing on creative cities and economic development, skills for business and enterprise, cross innovation for new combinations of SMEs and most recently in how maker spaces can help catalyse innovation in city eco systems. Steve led the writing team setting out the European Structural and Investment Fund strategy for the Birmingham city region for 2014/20. He has recently completed a Study Visit to California to further develop the University's position in STEAM thinking and practice. Steve chairs the Initiative for Social Enterprise in Birmingham and the Community Development Trust in Moseley, which hosts The Exchange coworking space.

Cahill-Jones, Tom, PhD. Tom is an experienced Director/Manager with a demonstrable history of working in the creative and higher education sectors. Skilled in Innovation Development, Policy Development, Operations Management and Performing Arts. His research skills range from a Doctor of Philosophy (PhD) in Electroacoustic Music Composition from The University of Birmingham to a professional interest in makerspaces.

References

Anderson, Chris. *Makers: The New Industrial Revolution*. New York: Random House, 2012.

Argyris, Chris. *Organizational Learning II: Theory, Method, and Practice*. Boston, MA: Addison-Wesley Publishing Company, 1996.

Bender, Gerd. "mode 2— Wissenserzeugung in globalen Netzwerken?" In *Stadtregion und Wissen: Analysen und Plädoyers für eine wissensbasierte Stadtpolitik*, edited by Ulf Matthiesen, 149–157. Wiesbaden: VS Verlag für Sozialwissenschaften, 2004. https://doi.org/10.1007/978-3-663-11481-9_9.

Bretschneider, Markus, and Ekkehardt Nuissl. "'Lernende Region' Aus Sicht Der Erwachsenenbildung." In *Lernende Region-–Mythos Oder Lebendige Praxis*, edited by Ulf Matthiesen and Gerhard Reutter, 35–55. Bielefeld: Bertelsmann Verlag, 2003.

Bridge, Gavin, Stefan Bouzarovski, Michael Bradshaw, and Nick Eyre. "Geographies of Energy Transition: Space, Place and the Low-Carbon Economy." *Energy Policy* 53 (February 1, 2013): 331–40. https://doi.org/10.1016/j.enpol.2012.10.066.

Budge, Kylie. "Making in the City: Disjunctures between Public Discourse and Urban Policy." *Australian Geographer* 50, no. 2 (2018): 185–99. https://doi.org/10.1080/00049182.2018.1503045.

———. "The Ecosystem of a Makerspace: Human, Material and Place-Based Interrelationships." *Journal of Design, Business & Society* 5, no. 1 (March 1, 2019): 77–94. https://doi.org/10.1386/dbs.5.1.77_1.

Chesbrough, Henry William, Wim Vanhaverbeke, and Joel West. *New Frontiers in Open Innovation*. Oxford: Oxford University Press, 2014.

Cooke, Philip, and Dafna Schwartz. *Creative Regions: Technology, Culture and Knowledge Entrepreneurship*. London and New York: Routledge, 2008.

Cooperrider, David, and Suresh Srivastva. "Appreciative Inquiry in Organizational Life." edited by Richard W. Woodman and William A. Pasmore, 1:81–142. Research in Organizational Change and Development. Greenwich, CT: JAI Press, 1986.

Etzkowitz, Henry, and Loet Leydesdorff. "The Dynamics of Innovation: From National Systems and 'Mode 2' to a Triple Helix of University–Industry–Government Relations." *Research Policy* 29, no. 2 (February 1, 2000): 109–23. https://doi.org/10.1016/S0048-7333(99)00055-4.

Evans, James, and Andrew Karvonen. "'Give Me a Laboratory and I Will Lower Your Carbon Footprint!'—Urban Laboratories and the Governance of Low-Carbon Futures." *International Journal of Urban and Regional Research* 38, no. 2 (2014): 413–430. https://doi.org/10.1111/1468-2427.12077.

Faulconbridge, James R. "Stretching Tacit Knowledge beyond a Local Fix? Global Spaces of Learning in Advertising Professional Service Firms." *Journal of Economic Geography* 6, no. 4 (August 1, 2006): 517–540. https://doi.org/10.1093/jeg/lbi023.

Fleischmann, Katja, Sabine Hielscher, and Timothy Merritt. "Making Things in Fab Labs: A Case Study on Sustainability and Co-Creation." *Digital Creativity* 27, no. 2 (April 2, 2016): 113–31. https://doi.org/10.1080/14626268.2015.1135809.

Gibbons, Michael. *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*. London & Thousand Oaks, CA: SAGE Publications Ltd, 1994.

Harloe, Michael, and Beth Perry. "Universities, Localities and Regional Development: The Emergence of the 'Mode 2' University?" *International Journal of Urban and Regional Research* 28, no. 1 (2004): 212–23. https://doi.org/10.1111/j.0309-1317.2004.00512.x.

Healey, Patsy, Stuart Cameron, Simin Davoudi, Stephen Graham, and Ali Madani-Pour, eds. *Managing Cities: The New Urban Context.* Chichester ; New York: Wiley, 1995.

Heinelt, Hubert, and Daniel Kübler. *Metropolitan Governance in the 21st Century: Capacity, Democracy and the Dynamics of Place*. London and New York: Routledge, 2004.

Ibert, Oliver. "Relational Distance: Sociocultural and Time–Spatial Tensions in Innovation Practices:" *Environment and Planning A*, 2010. https://doi.org/10.1068/a4247.

Ibert, Oliver, Johanna Hautala, and Jussi S. Jauhiainen. "From Cluster to Process: New Economic Geographic Perspectives on Practices of Knowledge Creation." *Geoforum* 65 (October 1, 2015): 323–327. https://doi.org/10.1016/j.geoforum.2015.06.023.

Karvonen, Andrew, and Bas van Heur. "Urban Laboratories: Experiments in Reworking Cities." *International Journal of Urban and Regional Research* 38, no. 2 (2014): 379–92. https://doi.org/10.1111/1468-2427.12075.

Kostakis, V., and M. Bauwens. *Network Society and Future Scenarios for a Collaborative Economy*. Palgrave Macmillan UK, 2014. https://doi.org/10.1057/9781137406897.

Lange, Bastian. "Accessing Markets in Creative Industries—Professionalization and Social-Spatial Strategies of Culturepreneurs in Berlin." *Creative Industries Journal* 1, no. 2 (January 1, 2009): 115–35. https://doi.org/10.1386/cij.1.2.115_1.

———. "Kreative Interventionen. Innovationswerkstätten als beispielhafte Impulsgeber für Kollaboration in der Peripherie." In *Kreative Pioniere in ländlichen Räumen: Innovation & Transformation zwischen Stadt & Land*, edited by Katja Wolter, Daniel Schiller, and Corinna Hesse, 440–464. Stuttgart: Steinbeis-Edition, 2018.

Lange, Bastian, Dominic Power, and Lech Suwala. "Geographies of Field-Configuring Events." *Zeitschrift Für Wirtschaftsgeographie* 58, no. 1 (2015): 187–201. https://doi.org/10.1515/zfw.2014.0013.

Malecki, Ed, and Gert-Jan Hospers. "Knowledge and the Competitiveness of Places." In *The Learning Region*, edited by Roel Rutten and Frans Boekema, 143–159. Cheltenham: Edward Elgar Publishing, 2007. https://doi.org/10.4337/9781847205537.00016.

Markusen, Ann. "Sticky Places in Slippery Space: A Typology of Industrial Districts." *Economic Geography* 72, no. 3 (July 1, 1996): 293–313. https://doi.org/10.2307/144402.

Nevens, Frank, Niki Frantzeskaki, Leen Gorissen, and Derk Loorbach. "Urban Transition Labs: Co-Creating Transformative Action for Sustainable Cities." *Journal of Cleaner Production*, Special Issue: Advancing sustainable urban transformation, 50 (July 1, 2013): 111–22. https://doi.org/10.1016/j.jclepro.2012.12.001.

Nowotny, Helga, Peter B. Scott, and Michael T. Gibbons. Re-*Thinking Science: Knowledge and the Public in an Age of Uncertainty*. Hoboken, NJ: John Wiley and Sons, 2001.

Oldenburg, Ramon, and Dennis Brissett. "The Third Place." *Qualitative Sociology* 5, no. 4 (December 1, 1982): 265–84. https://doi.org/10.1007/BF00986754.

Othengrafen, Frank, Luis del Romero Renau, and Ifigeneia Kokkali. "A New Landscape of Urban Social

Movements: Reflections on Urban Unrest in Southern European Cities FRANK OTHENGRAFEN, LUíS DEL ROMERO RENAU, AND." In Cities in Crisis, edited by Jörg Knieling and Frank Othengrafen, 169–184. London and New York: Routledge, 2015.

Roessler, Isabel, Sindy Duong, and Cort-Denis Hachmeister. *Welche Missionen Haben Hochschulen?: Third Mission Als Leistung Der Fachhochschulen Für Die Und Mit Der Gesellschaft*. Gütersloh: Centrum für Hochschulentwicklung GmbH, 2015. Accessed January 20, 2020, https://www.che.de/wp-content/uploads/upload/CHE_AP_182_Third_Mission_an_Fachhochschulen.pdf.

Schirmer, Jacki. "Scaling up: Assessing Social Impacts at the Macro-Scale." *Environmental Impact Assessment Review* 31, no. 3 (April 1, 2011): 382–91. https://doi.org/10.1016/j.eiar.2010.12.007.

Schneidewind, Uwe, and Karoline Augenstein. "Three Schools of Transformation Thinking: The Impact of Ideas, Institutions, and Technological Innovation on Transformation Processes." *GAIA—Ecological Perspectives for Science and Society*, 25, no. 2 (2016): 88-93, https://doi.org/info:doi/10.14512/gaia.25.2.7.

Sennett, Richard. *The Craftsman*. London: Allen Lane, 2008.

Seravalli, Anna. "While Waiting for the Third Industrial Revolution: Attempts at Commoning Production." In *Making Futures: Marginal Notes on Innovation, Design, and Democracy,* edited by Pelle Ehn, Elisabeth N. Nilsson, and Richard Topgaard, 99–129. Cambridge, MA: The MIT Press, 2014.

Smith, Adrian, Mariano Fressoli, and Hernán Thomas. "Grassroots Innovation Movements: Challenges and Contributions." *Journal of Cleaner Production*, Special Volume: Sustainable Production, Consumption and Livelihoods: Global and Regional Research Perspectives, 63 (January 15, 2014): 114–24. https://doi.org/10.1016/j.jclepro.2012.12.025.

Soja, Edward W. *Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places*. Hoboken, NJ: Wiley, 1996.

Toker, Umut, and Denis O. Gray. "Innovation Spaces: Workspace Planning and Innovation in U.S. University Research Centers." *Research Policy* 37, no. 2 (March 1, 2008): 309–29. https://doi.org/10.1016/j.respol.2007.09.006.

Vallance, Paul. "Universities, Public Research, and Evolutionary Economic Geography." *Economic Geography* 92, no. 4 (October 1, 2016): 355–377. https://doi.org/10.1080/00130095.2016.1146076.

Vathakou, Eugenia. "Citizens' Solidarity Initiatives in Greece during the Financial Crisis." In *Austerity and the Third Sector in Greece*, edited by Jennifer Clarke, Asteris Huliaras, Dimitri A. Sotiropoulos, Asteris Huliaras, and Dimitri A. Sotiropoulos. London and New York: Routledge, 2016. https://doi.org/10.4324/9781315568348-18.

Wenger, Etienne. *Communities of Practice: Learning, Meaning, and Identity.* Cambridge, MA: Cambridge University Press, 1999.

Williamson, Ben. "Governing Methods: Policy Innovation Labs, Design and Data Science in the Digital Governance of Education." *Journal of Educational Administration and History* 47, no. 3 (2015): 251–271.

CPCL Vol.2 no.2 | 2019

CPCL
EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES

MAIN SECTION

A Makerspace Network as Part of a Regional Innovation Ecosystem, the Case of Emilia-Romagna

Andrea Cattabriga — Slow/d (Italy); University of Bologna (Italy) — mail@andreacattabriga.com

ABSTRACT

Makerspaces and their various declinations are a widespread initiative of workshops that offer open access to digital and traditional production equipment, with the aim of democratizing access to technologies and supporting bottom-up innovation. They are recognized as a new form of 'third places' in a contemporary perspective. As the number of such places grows along with their active communities, business models, contamination projects with universities, companies, and civil society, many researchers have explored the ability of makerspaces to serve as innovation facilitators. Over the last few years, networks and coalitions of makerspaces have started to pop-up with a range of objectives, such as the advocacy and coordination of territorial or project-oriented coalitions; however, they remain largely unanalyzed and undocumented. The paper explores the phenomenon of these networks, drawing on a case study that describes the development of a makerspace regional network in Northern Italy, providing insights concerning its impact on both relationships at a local level and on the acceptance of third places within a regional innovation system, contributing to opening a new field of discussion about the potential of such networked organizations.

KEYWORDS

Makers; Fab Lab; Third Places; Regional Innovation Ecosystem.

PEER REVIEWED
https://doi.org/10.6092/issn.2612-0496/9536
ISSN 2612-0496

1 Introduction

Makerspaces are community places oriented towards supporting the learning of digital manufacturing technologies, with collaborative peer-production facilities, culturally rooted in tools and knowledge-sharing, widely considered innovative working and learning environments.[1] They are equipped with tools and machinery that allow members to design, prototype and build a wide range of products, from woodworking to 3D printing and electronics. Founder Niel Gernshenfeld defines Fab Labs (a particular makerspace format initiated at the MIT in Boston), as places where you can "make almost anything."[2]

The commitment to the themes of technical knowledge, open source approaches, collaboration between peers, distributed and decentralized production, the aptitude for collaborative work, and doing as learning, are interpreted as fundamental values of a new revolution in manufacturing.[3]

It is a growing global phenomenon[4], originating from the counterculture of the 1960s and evolving in the spaces for tools and knowledge of the first hackers, then in do-it-yourself workshops that included the early 3D printers.[5] They have different connotations and possible classifications according to the prevailing types of activities and forms of access and affiliation to specific networks, as for example in the case of Fab Labs.[6]

By the term "makerspace," the author refers to an extended family of collaboration spaces aimed at learning, prototyping, and producing with digital and manual technologies, the focus being "on making rather than merely consuming" as defined by Colegrove.[7]

Despite the fact that makerspaces share a solid common set of cultural norms[8] and sometimes even the same types of equipment and operating methods—as in the case of Fab Lab[9]—they are characterized differently, according to the models of governance, vocation, and the skills of the

1. Kylie Peppler et al., *Makeology: Makerspaces as Learning Environments (Volume 1)* (Abingdon-on-Thames: Routledge, 2016).

2. Neil Gershenfeld, "How to Make Almost Anything: The Digital Fabrication Revolution," Foreign Affairs 91, no. 6 (2012): 58

3. Andrew Jackson, "Makers: The New Industrial Revolution," *Journal of Design History* 27, no. 3 (September 1, 2014): 311–12.

4. Vasilis Niaros, Vasilis Kostakis, and Wolfgang Drechsler, "Making (in) the Smart City: The Emergence of Makerspaces," Telematics and Informatics 34, no. 7 (November 1, 2017): 1143–52.

5. Jarkko Moilanen, "Emerging Hackerspaces—Peer-Production Generation," in *Open Source Systems: Long-Term Sustainability*, ed. Imed Hammouda et al., IFIP Advances in Information and Communication Technology (Berlin, Heidelberg: Springer, 2012), 94–111.

6. "Fab Foundation—What Qualifies As A Fab Lab?," accessed August 11, 2019, https://www.fabfoundation.org/index.php/what-qualifies-as-a-fab-lab/index.html.

7. Patrick "Tod" Colegrove, "Editorial Board Thoughts: Libraries as Makerspace?," Information Technology and Libraries 32, no. 1 (March 30, 2013): 3.

8. Steven Levy, *Hackers: Heroes of the Computer Revolution* (Sebastopol, CA: O'Reilly Media, 2010).

9. Neil A. Gershenfeld, *Fab: The Coming Revolution on Your Desktop--from Personal Computers to Personal Fabrication* (New York: Basic Books, 2005).

FIG. 1 Inside a Makerspace, photo by the author, 2018

communities that live around them, thus defining a substantially unique profile for each space.[10]

As far as activities are concerned, some of them are mainly oriented towards the world of education and enhancing the technological skills of citizens, whereas others are more oriented towards working with companies and startups, evolving in a business-oriented direction **[Fig. 1]**.[11]

Numerous studies have been carried out in order to understand how makerspaces are organized, what kinds of communities support them, who is in charge of managing them and what their involvement is from a professional point of view.[12] Makerspaces can be classified as "third places" in keeping with Oldenburg's original description[13]—albeit one updated by recent re-interpretations[14]—and extending the concept by promoting higher levels of community engagement.[15] From this perspective of makerspace as a "third place," digital manufacturing does not only imply a re-appropriation of the means of production—enabling a "production

10. Teemu Mikkonen, Tere Vadén, and Niklas Vainio, "The Protestant Ethic Strikes Back: Open Source Developers and the Ethic of Capitalism," First Monday 12, no. 2 (February 5, 2007).

11. Eric van Holm, "What Are Makerspaces, Hackerspaces, and Fab Labs?," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, November 7, 2014), https://papers.ssrn.com/abstract=2548211.

12. Massimo Bianchini et al., /Makers' inquiri. Un'indagine socioeconomica sui makers italiani e su Make in Italy (Milan: Libraccio Editore, 2015), http://makersinquiry.org.

13. *In The Great Good Place* Ray Oldenburg refers to the home as "first place," the workplace as "second place," defining the "third place" as a "home away from home," an informal place of expression and social interaction. See Ray Oldenburg, The Great Good Place (Cambridge, MA: Da Capo Press, 1989).

14. Nemania Memarovic et al., "Rethinking Third Places: Contemporary Design With Technology," *The Journal of Community Informatics* 10, no. 3 (2014).

15. Diane Slatter and Zaana Howard, "A Place to Make, Hack, and Learn: Makerspaces in Australian Public Libraries," *The Australian Library Journal* 62, no. 4 (November 1, 2013): 272–84.

systems with a personal dimension"[16]—but also constitutes a means of social connection.

There is a lot of evidence on the positive impact of makerspaces on local communities,[17] but very little has been written about the networks that these spaces seek to build at different spatial scales or around specific goals. These networks are born as an instrument of representation or coordination, but only in a few cases do they seem able to configure themselves in such a way as to impact other ecosystems at a higher level.

The author had the opportunity to participate in the evolution of the regional makerspace network in Emilia-Romagna, right from its early days. The Mak-ER network is aimed at connecting local makerspaces, Fab Labs and hackerspaces supporting the innovation capacity of communities, SMEs and professionals, with the ambition of becoming the first prototyped model framework to be replicated by other contexts.[18]

The purpose of this paper is to start a mapping of makerspace networks and their organizational structures, exploring their impact on territorial innovation ecosystems. The case study presented offers the opportunity to observe the local makerspace network in relation to the regional level.

2 Makerspace in the Context of Innovation

Numerous research projects show the capacity of the maker movement[19] to become a driver of innovation in social, educational and business fields. Makers highlight the independence of the concept of learning from that of school, redefining the relationship between the self and one's interaction with the educational experience.[20] Relating to the undergraduate education environment, they contaminate existing curricula strengthening technical, scientific and engineering skills through a holistic, creative relationship with the human sciences.[21]

Companies that grow out of makerspaces—managed by those who Troxler and Wolf call maker-entrepreneurs—seem to work and survive over time,

16. Stefano Maffei and Massimo Bianchini, "Microproduction Everywhere. Social, Local, Open and Connected Manufacturing," Social Frontiers The next Edge of Social Innovation Research (Milan, October 2013), accessed January 21, 2020, https://www.scribd.com/document/192022372/Microproduction-everywhere-Social-local-open-and-connected-manufacturing.

17. Nick Taylor, Ursula Hurley, and Philip Connolly, "Making Community: The Wider Role of Makerspaces in Public Life," in *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (New York: Association for Computing Machinery, 2016), 1415–1425.

18. Associazione Mak-ER, "Mak-ER / Statuto Dell'Associazione," 2018, accessed January 21, 2020, https://www.mak-er.it/wp-content/uploads/2019/06/Statuto\Mak\ER.pdf.

19. Dale Dougherty, "The Maker Movement," *Innovations: Technology, Governance, Globalization 7,* no. 3 (July 1, 2012): 11–14.

20. Erica Rosenfeld Halverson and Kimberly Sheridan, "The Maker Movement in Education," *Harvard Educational Review* 84, no. 4 (December 1, 2014): 495–504.

21. Eduardo Ferro dos Santos and Paul Benneworth, "Makerspace for Skills Development in the Industry 4.0 Era," *Brazilian Journal of Operations & Production Management* 16, no. 2 (May 26, 2019): 303–15.

thanks to an innovative approach to mixing technical skills, processes and a strong community influence in their business model design.[22] As ecosystems of open innovation[23] that facilitate agile development practices even for hardware products, makerspaces can effectively provide support for companies.[24] Likewise, much has already been written about makerspaces as enablers of social innovation and creators of business models that can positively impact local communities.[25]

3 Makerspaces and their Networks

The phenomenon of makerspace networks, however, does not appear to be as dynamic and expansive as that of makerspaces per se. In the absence of a single official registry and no previous research data, it is not possible to find an exact number of active organizations. However, through a web search on the most recognized web directories (see methodology and detailed results in Annex A, https://cpcl.unibo.it/article/downloadSuppFile/9536/35938), the author identified 43 existing networks (complete list in Annex B, https://cpcl.unibo.it/article/downloadSuppFile/9536/35939), most of which originated from Fab Labs. Networks are intended as organizations connecting multiple makerspaces, not owned or run by a unique subject. However, because it is difficult to collaborate on international projects, local networks seem to be effective substitutes. Makerspace networks are generally aggregations that aim to promote maker culture in their reference territories, but they do not involve structured affiliations or specific services. Most of them are not recognized legal entities. They can be classified by several criteria on the basis of geographical scale (international, national, regional, local, or urban), whether if they are generalist, project oriented (such as FabLab Net, a project funded by the European Commission), or focused on particular topics (such as Fab Lat Kids, a network of Fab Labs focused on education).

---

22. Peter Troxler and Patricia Wolf, "Digital Maker-Entrepreneurs in Open Design: What Activities Make up Their Business Model?," *Business Horizons*, THE GENERATIVE POTENTIAL OF EMERGING TECHNOLOGY, 60, no. 6 (November 1, 2017): 807–17.

23. Open innovation "is the use of purposive inflows and outflows of knowledge to accelerate internal innovation" and it is usually represented as a model opposed to the traditional closed approach, where innovation is organized only inside the firm. See Henry Chesbrough, "Open Innovation: a New Paradigm for Understanding Industrial Innovation," in *Open innovation: Researching a new paradigm*, ed. Henry Chesbrough, Win Vanhaverbeke and Joel West (Oxford: Oxford University Press, 2006), 0–19.

24. Annette Isabel Böhmer, Andreas Beckmann, and Udo Lindemann, "Open Innovation Ecosystem---Makerspaces within an Agile Innovation Process" (ISPIM Innovation Summit, Brisbane, 2015), 1–11. Accessed January 16, 2020, https://mediatum.ub.tum.de/doc/1292171/1292171.pdf.

25. Patricia Wolf and Peter Troxler, "Community-Based Business Models: Insights from an Emerging Maker Economy," *Interaction Design and Architecture(s) Journal (IxD&A)* 30 (2016): 75–94.

3.1 Global, continental and international networks

The most active and the largest organization is the "Fab Lab Global Network," the body of makerspaces that acknowledges the Fab Lab model, coordinated by the Fab Foundation at the Center for Bits and Atoms of the MIT in Boston (USA). It consists of 1784[26] nodes, organizes its own annual global conference and promotes distributed training programs such as the Fab Academy. It does not provide any official service to affiliates, while the foundation provides consultancy services to third parties and supports the creation of new strategic nodes worldwide. Single Fab Labs must participate in the network by attending meetings or contributing to projects.[27] The European Cooperation of Fab Labs and Makerspaces is an example of a coordination attempt across the continent, aimed at overcoming the problem of unequal access to funding between those few larger labs and the smaller ones. Other continental scale networks such as FabLat (Latin America), and FabLab Asia Network have also been established.

3.2 National and State Networks

National networks are organizations aimed at promoting maker culture, but their activity often does not go beyond the establishment of a website aggregating events and occasional meetings. These networks are often represented by simple collective names without any formal organization, or non-profit associations that bring together individuals rather than makerspaces as legal entities. This does not technically qualify them as makerspace networks, although their role as relationship facilitators is undeniable. Some remarkable examples of these initiatives are Fab Lab Nation in Canada, providing high-quality collaborative tools[28] and a great variety of stakeholders, and the Nation of Makers in the USA,[29] providing its members with online resources available online and numerous initiatives together with public administrations. The German Verbund Offener Werkstätten network is probably the most structured in terms of services, including an insurance policy for makerspaces.

Another relevant case is the CCC Maker Initiative,[30] a network of 35 California Community College makerspaces with a 17-million dollar invest-

26. "Labs Map | FabLabs," FabLabs.io - The Fab Lab Network. Accessed December 30, 2019, https://fablabs.io/labs/map.

27. "Getting Started with Fab Labs," accessed December 30, 2019, https://fabfoundation.org/getting-started/#fablabs-full.

28. "Home - Fab Labs Nation," accessed December 30, 2019, https://wiki.fablabsnation.ca/index.php/Accueil/en.

29. "Nation of Makers - A National Nonprofit Dedicated to Helping Support America's Maker Organizations through Advocacy, Resource Sharing, and the Building of Community within the Maker Movement and Beyond." Accessed December 30, 2019, https://nationofmakers.us/about.html.

30. CCC is the largest provider of workforce training in the state and nation, offering postsecondary technical education in 175 fields, and educating more than 100,000 individuals each year in industry-specific workforce skills.

ment and probably the best-documented project in the world.[31] Its model is based on co-design activities aimed at bringing out the most relevant aspects for each local reality, as well as on a network of makerspaces supported by a core implementation team including a project manager, a technical assistance provider, an organization development/strategic management leader, a communications director, a grant accountant and a statewide advisory committee.[32]

3.3 Regional Networks

There are several networks active on a regional level. They seem to be more active and project-oriented compared to national and continental networks. Moreover, they show a greater variety in terms of governance models, quality and quantity of activities. Most of the regional networks, like the networks operating on a larger scale, are meant to provide connections among affiliate organizations. Some of them, however, are committed to specific activities. For instance, rather than simply representing local makers, FabCube in Veneto (Italy) developed a "startup studio" service where several Fab Labs cooperate, joining competences and facilities. Other regional networks are committed to the establishment of a strong presence within their economic and political context, as in the case of Mak-ER in Emilia-Romagna, Italy, which aspires to become a reproducible prototype for this type of organization.

3.4 Local Networks

At this level, networks can be interprovincial, provincial, metropolitan, or urban. One of the most interesting example is Roma Makers (Rome, Italy), the Rome metropolitan network that represents the evolution of a makers community into a polycentric city layer, made up of several Fab Labs, mini Fab Labs and school ateliers, characterized by an advisory service for citizens' institutions interested in setting up and running a Fab Lab.[33]

---

31. Five reviewed papers published between 2016 and 2018. See https://cccmaker.com/about/ccc-maker-initiative/, accessed May 10, 2019.

32. Carol Pepper-Kittredge, Deborah Bird, and Brie Lindsey, "Growing A Network of Makerspaces in California Community Colleges: Moving Towards Implementation and Adoption" (International Symposium on Academic Makerspaces, Stanford, CA, 2018). Accessed January 16, 2020, https://cccmaker.com/wp-content/uploads/2018/08/CCCMaker-FINAL-submission.pdf. Carol Pepper-Kittredge and Paul A Devoe, "Creating a Network of Community Colleges with Makerspaces: California's CCC Maker Model" (International Symposium of Acadamic Makerspaces, Boston, MA, 2016), 221–224.

33. Alessandra Fasoli and Silvio Tassinari, "Engaged by Design: The Role of Emerging Collaborative Infrastructures for Social Development. Roma Makers as A Case Study," *The Design Journal* 20, no. sup1 (July 28, 2017): S3121–33.

4 Case Study—Mak-ER the Emilia-Romagna Regional Makerspace Network

Emilia-Romagna is located in northern Italy, it has one of the highest national levels of income per capita and it has been considered a laboratory of innovation in the context of industrial districts.[34]

In recent years, its Regional Innovation System (RIS), has shifted toward a model where more companies adopt open and distributed innovation strategies.[35]

In Autio's definition[36], RIS are made by the interaction of two sub-systems in the context of a specific socioeconomic and cultural settings. The first is responsible for knowledge generation and diffusion (institutions for workforce mediation, education and research, technology mediation), while the second is responsible for knowledge exploitation and application (industries with their value and supply chains).

The regional dimension of innovation systems is becoming of key importance due to its relations with industrial specialization, knowledge spillovers, tacit knowledge exchange, and institutions.[37] RIS seems to be the perfect environment for the grafting of makerspaces—as well as their networks—due to a shared compatibility with open innovation practices.[38]

4.1 From Informal Coalition to Recognized Agent of Regional Innovation

The Mak-ER network was founded in 2014 on the initiative of two laboratories: Fab Lab Reggio Emilia and MakeInBo. Supported by ASTER, the regional consortium for innovation and industrial research (now ART-ER), Mak-ER coordinates the activities of local makerspaces, supporting the spread of the cultural and methodological approach of makers. According to the research carried out, this is the first example of a network structured on a regional scale in Italy [Fig. 2].

By 2014, 15 labs from eight different provinces had joined the project (almost all the makerspaces and Fab Labs in the region). They were very different in terms of typology (hackerspace, Fab Lab or makerspace), and

34. Annaflavia Bianchi and Patrizio Bianchi, "Keeping Emilia-Romagna Strong: An Integrated Industrial Policy Approach," *Wirtschaftsdienst* 99, no. 1 (April 1, 2019): 65–70.

35. Fiorenza Belussi, Alessia Sammarra, and Silvia Rita Sedita, "Learning at the Boundaries in an 'Open Regional Innovation System': A Focus on Firms' Innovation Strategies in the Emilia Romagna Life Science Industry," *Research Policy* 39, no. 6 (July 1, 2010): 710–21.

36. Erkko Autio, "Evaluation of RTD in Regional Systems of Innovation," *European Planning Studies* 6, no. 2 (April 1, 1998): 131–40.

37. Franz Tödtling and Michaela Trippl, "One Size Fits All?: Towards a Differentiated Regional Innovation Policy Approach," *Research Policy*, Regionalization of Innovation Policy, 34, no. 8 (October 1, 2005): 1203–19.

38. Lindomar Subtil de Oliveira et al., "Analysis of Determinants for Open Innovation Implementation in Regional Innovation Systems," *RAI Revista de Administração e Inovação* 14, no. 2 (April 1, 2017): 119–29.

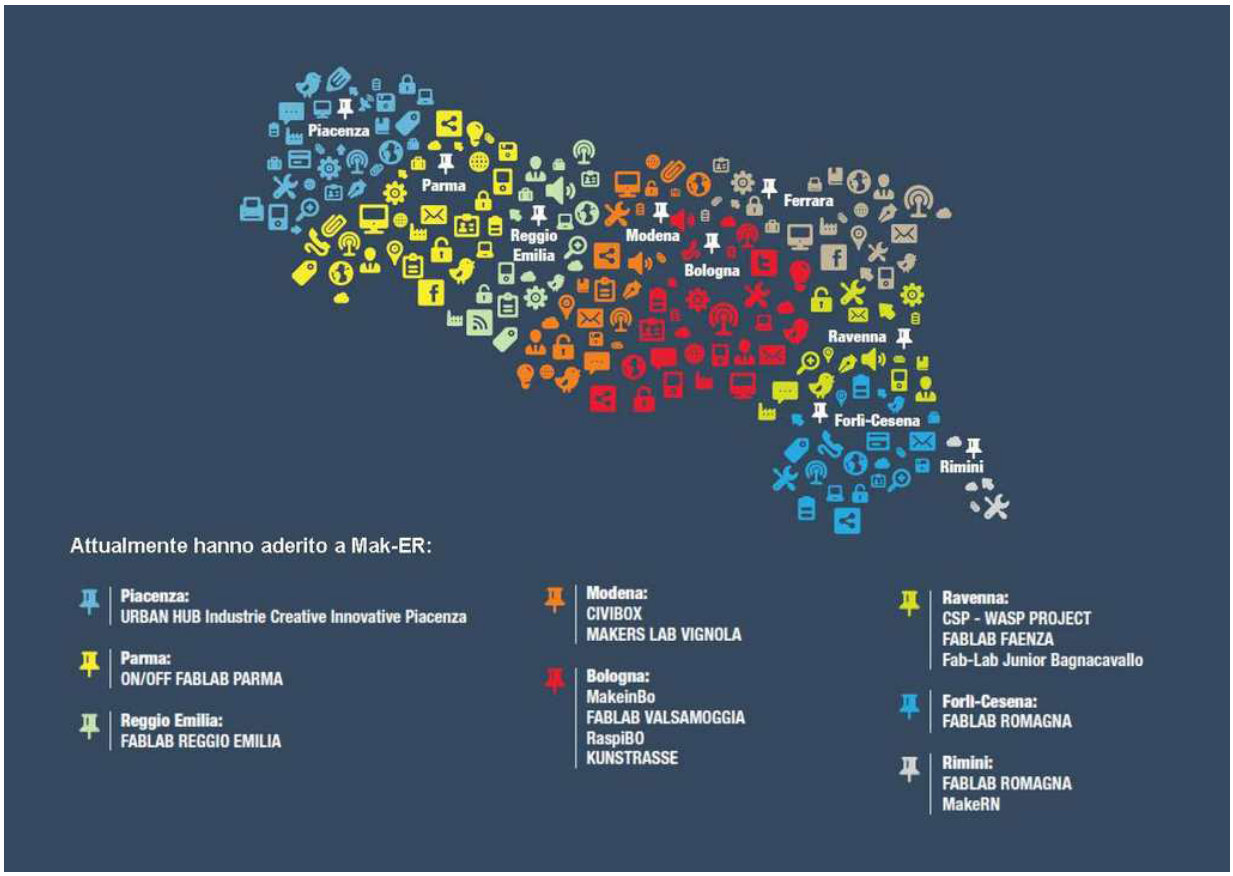


FIG. 2 The first Mak-ER Network Map, graphic by ASTER, 2014

of governance model (public, semi-public, private or public-private partnerships). At the early stages of its development, the network focused more on strengthening member relationships and on designing the brand, without considering gaining legal recognition. At that time, the priorities were the creation of possible actions to be carried out locally and the representation of makers' instances **[Fig. 3]**.

In 2014, the first version of the Manifesto—aimed at defining the purposes and attributes of the network—were subscribed by members and publicly shared.

The nodes of the network are always made up of a set of places, equipment, and people: all three elements must always be present in order to participate in the activities of the network.[39] Subsequently, Mak-ER began to attend events and fairs with its own stand, starting to promote the most important projects of the individual nodes such as Rimini Mini-Maker Fair 2015, in which the network launched the first joint project then called Maker's Beach, with the aim of implementing the prototype of the shoreline infrastructure of the future.

In 2016 "Fab 2 Business" was organized: the first European event dedicated to research on business models for Fab Labs.

39. "Manifesto della rete Mak-ER," mak-er, accessed December 30, 2019, https://www.mak-er.it/chi-siamo-con-testi-vecchi/.

FIG. 3 European makers joining Mak-ER in R2B Bologna, photo by BAM Agency, 2016

Also in 2016, a public call for proposals launched by the regional administration to support small and medium-sized enterprises for the first time listed Fab Labs as qualified innovation suppliers, together with research centers, universities and other innovation facilities.[40] This recognition marked a significant turn: today also local institutions and the Provincial Chambers of Commerce also include Fab Labs among the centers for innovation where companies can spend public funds.

In 2017 Mak-ER implemented a Charter of Values as a tool for communication and guidance, outlining its principles and showcasing its first map of network services.[41]

Mak-ER reached its historic high of 19 nodes before establishing itself as a legally recognized association. Among the subjects that have joined over time and then left the network, some have closed, others have changed their purpose (Fab Lab Terre di Castelli, which has become an internal facility for Tecnopolo of Modena, used exclusively as a startup incubator). Others have decided not to participate in the activities of the network due to the lack of resources and of alignment with the vision. On November 12, 2018, the first nine makerspaces signed the charter of the association, in the presence of the Regional Councilor for Productive Activities.

4.2 The Essential Contribution of the Public

Makerspaces has been perceived by local authorities as a potential new interface between the world of business, cultural and creative industries, civil society and education. Their effective capability to use alternative

40. "Servizi innovativi per le pmi 2016," Programma operativo regionale, accessed December 30, 2019, https://fesr.regione.emilia-romagna.it/opportunita/2016/servizi-innovativi-per-le-pmi.

41. "La Carta dei Valori di Mak-ER," mak-er, July 27, 2017, https://www.mak-er.it/la-carta-dei-valori-di-mak-er/.

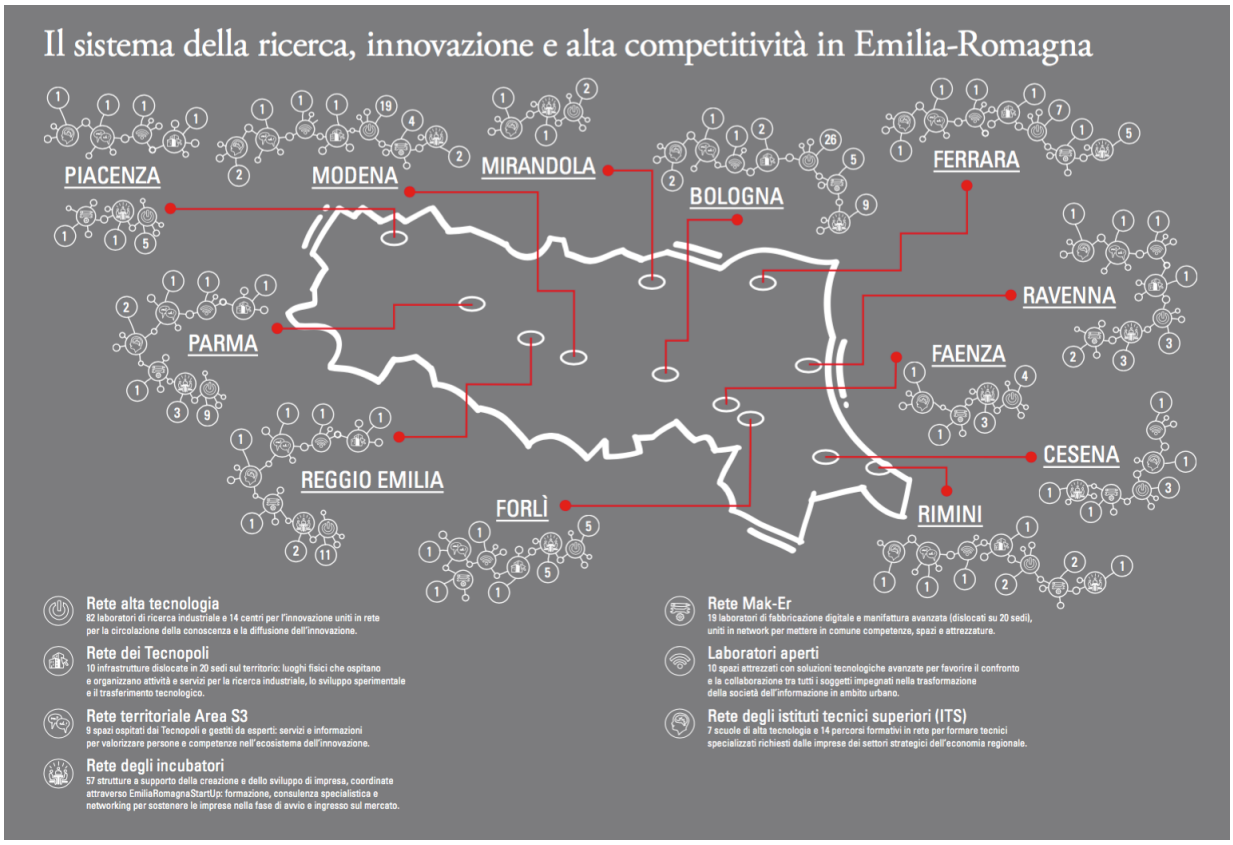


FIG. 4 Emilia-Romagna Regional Innovation Ecosystem, from Con L'Emilia-Romagna Ce L'Abbiamo Fatta, published by Regione Emilia-Romagna, Bologna, 2017.

languages and methodologies compared to that of universities, business incubators, and research centers has played a key role in this perception [Fig. 4]. Hence, the pivotal support of the Region performed by the ASTER consortium[42] may be found at various levels:

1. **promotion of Mak-ER within the regional innovation system**: through the organization of institutional meetings to which representatives of the network were invited in order to promote their skills and potential values connecting schools, enterprises and intermediate bodies;
2. **enhancement of the logistical coordination of the network**, through participation in events and the organization of internal meetings held at the various members' facilities (more than 20 in four years);
3. **indirect economic support for participation in fairs and public initiatives**, through the sponsorship of stands or promotional material;
4. **legal support and administrative guidance**, in particular when the network began to plan its evolution from informal coalition to association.

42. ASTER "is the consortium company for innovation and technology transfer between the Emilia-Romagna Region, Universities, national public research bodies CNR, ENEA, INFN and the regional system of Chambers of Commerce." Accessed May 13, 2019, https://www.aster.it/.

4.3 Governance and Organization

The path that led to the foundation of the association and the drafting of its statute[43] was not linear. It is worth mentioning that the divergence of opinions regarding the mission and strategic orientations, the expediency of establishing the association and the cost of membership fees proved divisive elements. Other causes include those related of a logistical-organizational nature—such as geographical distance or the interference of the associates' main work activity—and the different nature of the members (for example, nodes operated by associations are slower than others in interacting with the network due to their internal democratic mechanisms).

The 2018 statute is based on the necessity to change the informal nature of the Mak-ER Network towards an official associative entity. It is based on the standard model made available by the Emilia-Romagna Region and its articles were collectively discussed with the support of a lawyer who was instrumental in making comprehensible to everyone the arrangements and mechanisms of the organization.

- The association's budget—sized to cover minimum coordination costs—is funded by:
- annual membership fees;
- contributions from members and/or private individuals;
- contributions from the state, public and international bodies, institutions;
- reimbursements deriving from conventions;
- income from marginal commercial and productive activities;
- donations.

The functioning of the association is regulated by the statute, while the more practical issues are gradually addressed by the Council and the Assembly through the regulations. Technical issues are addressed by specific commissions that return opinions and guidelines to the Council and the Members' Assembly. Participation in the commissions is voluntary and each of the nodes must participate with its members. The possibility is under discussion for a fraction of the membership fees to be quantified by measuring the participation, thus decoupling it from money and leveraging more collaboration **[Fig. 5]**.

The network works mainly through web-based applications. Direct communication takes place on a multi-channel chat and meetings are preferably performed via online video-conferencing software; coordination and operations are carried out on collaborative project management tools; all assets and documents are managed via the cloud.

43. "Mak-ER / Statuto dell'Associazione."

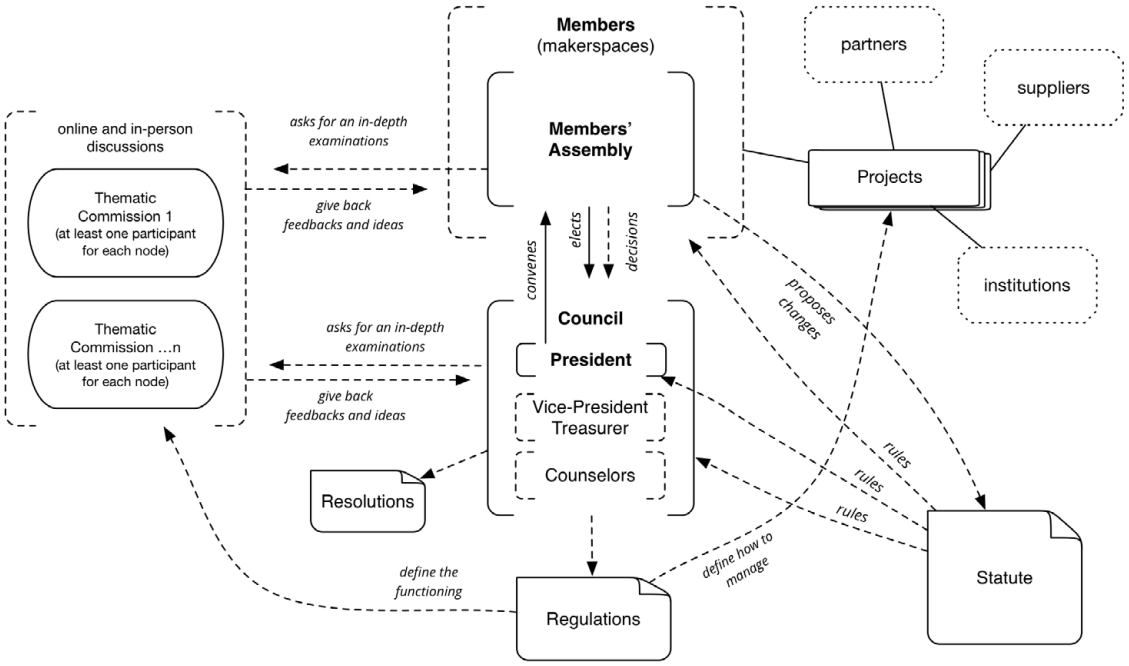


FIG. 5 Mak-ER Association governance

4.4 Node Services vs. Network Services

The objective that Mak-ER pursues is to qualify itself as an interlocutor able to provide services on a regional scale, through the agile mobilization of internal resources. This can only happen by differentiating its offer of services from that of the individual nodes, because one of the obstacles perceived by many of the members concerns the possible overlap—and therefore competition—between nodes and the infrastructure [Tab. 1]. Since Mak-ER's market orders are carried out through a selection of project team members on the basis of skills and only secondarily on a geographical basis, this approach risks widening the gap between the more business-oriented and the more education-oriented nodes. In this regard, a model internally defined as the "learning machine" is under discussion, based on the principles of networked learning[44] and on the vision of the network as an opportunity for its members to continuously enhance their own competencies.

44. David Jackson and Karen Seashore Louis, "From Professional Learning Community to Networked Learning Community," in *Professional Learning Communities: Divergence, Depth and Dilemmas. Professional Learning*, ed. Louise Stoll and Karen Seashore Louis (Columbus, OH: Open University Press, 2007), 1–24. Accessed January 16, 2020, http://www.learnersfirst.net/private/wp-content/uploads/From-professional-learning-community-to-networked-learning-community.pdf.

Nodes services	Mak-ER network services
Access and training to local machines and resources	Search machines availability in the whole network *
Local educational programs	Distributed educational programs
Local B2B and members training activities	Distributed B2B training programs
Prototyping and parts manufacturing (small batches)	Coordination of distributed manufacturing projects
Design, product development, and consultancy (B2B/ B2C and open projects)	Coordination of distributed teams for B2B and open projects

Sources: The list of services of the nodes is a summary of the information given by the members through self-updated description sheets of their makerspaces (accessed May 2019). Here only services provided by all nodes excluding the one provided only by some of them are listed.

Mak-ER services have been defined by the author matching information provided by the official website and assembly reports available in June 2019.

* planned services.

TAB. 1 Comparison between local makerspaces vs network services

4.5 Relevant Collaborative Projects

This section describes two projects implemented jointly by Mak-ER. The first is related to the ability to coordinate skills and equipment distributed among the various nodes of the network to co-produce small batches of smart devices, while the second is related to the transfer of internal skills aimed at providing standardized training throughout the territory.

4.5.1 Distributed production of electronic devices

In 2017, Lepida SPA (developer and maintainer of regional ICT infrastructures), contracted Mak-ER for the production of a technological device. The project consisted of a small Bluetooth anti-theft tracker working through a smartphone app (OEM), incorporated in a 3D printed plastic chassis, to be produced in 200 units within two months. Although the concept design of the device was basically ready, the order confirmation received in mid-September had left only two weeks for the execution of the plastic chassis to be printed in 3D, assembled and delivered. The network acted as a single infrastructure distributing parts of the process among their most qualified nodes, and delivered the product on time.

4.5.2 Distributed training

Between February and May 2018 Mak-ER provided training to 140 people from public administrations in the Emilia-Romagna region, on the themes of service and interaction design. The 11 workshops lasted four hours and were held at five different locations so as to allow participants to choose the nearest or most convenient place to attend the activity. The training module, designed with the customer's representatives, focused on the use of the analysis and design tools of the service and interaction design.

- Specifically, Mak-ER was responsible for the following work packages:
- shaping the training project;
- setting up the system for measuring quality and impact;
- creating a "prototype" event to try out the format;
- making a promotional video;
- managing the various locations;
- preparing the trainers of the network aligning them to a common quality standard;
- carrying out the training activity.

The satisfaction measured through an anonymous questionnaire filled in by 55 participants at the end of the activity recorded an average score of 4.2 (scale from 1 to 5).

It is relevant to report that the vertical competence on service and interaction design was possessed only by a few members, who trained the others through intensive workshops. The purpose of this model— although a significant part of the revenues was used to cover internal training costs— was to speed up the attainment and transfer of skills within the network, improving its overall efficiency. This acceleration of knowledge transfer could take place because the strengthening of links between nodes is positively connected to the learning level that takes place within alliances.[45]

45. Andrew C. Inkpen and Eric W. K. Tsang, "Social Capital, Networks, and Knowledge Transfer," *Academy of Management Review* 30, no. 1 (January 1, 2005): 146–65.

5 Conclusion

This research was limited by two main factors: the analysis and observation of a single case study and the lack of quantitative measurement of the network impact on the RIS.

However, it offers an overview of the most significant aspects emerged in establishing a third-place network oriented towards operating as an independent organization and recognized as part of the territorial innovation system [Tab. 2].

Barriers	Enablers
Heterogeneity of nodes (reference, affiliation, mission, governance models, competences, local context, culture).	Administrative, technical, legal, promotional and logistical support from regional institutions.
Difficult alignment on vision, values, mission and governance model for the network.	Institutional commitment to makers' inclusion in the regional innovation system.
Different levels of involvement and motivation among members.	Fab labs official recognition as innovation providers in public regional tenders.
Members fearing that better structured nodes could profit more from the network.	Identification of a system of network services that do not compete with those of the nodes.
Irregular and sporadic in-person meetings.	Incentives such as learning opportunities in collaborative projects.
Lack of resources for active members' participation.	
Competitive pressure among nearby nodes.	
Lack of shared knowledge on collaborative network organization principles.	
Difficult and slow implementation of effective remote collaboration tools.	

TAB. 2 Critical issues implementing Mak-ER

By collaborating as a network—thanks to a shared capital of resources that can be easily mobilized—makerspaces can structure a distributed platform of homogeneous services and competences, overcoming limitations on individual skills and resources, allowing for the deployment of projects that they would be unable to handle alone. Challenges posed by structuring a network that cannot bear founding and running costs similar to those of a network of enterprises (coordination, project management, trade representation, etc.), seem to be effectively addressed by adopting an organizational design approach based on incentives for collaboration— forging trustworthy ties between nodes—and leveraging knowledge transfer. Furthermore, structuring a joint service offering which does not compete against that of individual nodes can mitigate the impact of internal competitive dynamics. Qualitatively, the network also has a positive

"downward" impact, namely across each node territory (especially in the case of bottom-up initiatives), raising the authority of the makerspace in the eyes of its members, local authorities and organizations.
Among other factors, institutional support has been pivotal, by committing resources, adopting cost-free but impactful measures and facilitating relations between makerspaces and RIS clusters. Having personally observed the genesis of the network and having participated in numerous meetings with regional institutions and stakeholders, it seems clear to me how the network of makerspaces impacts positively "upwards," on the perception of these kind of third places—of their culture and methodologies—as reliable partners for other RIS actors. Furthermore the recognition of makerspaces as innovative solution providers in public tenders has positively impacted the RIS, enriching the offer of open innovation approaches and accessible research and development practices for SMEs. As makerspaces are recognized as social innovation vehicles, the network's ability to impact on a wider audience allows the RIS to include more bottom-up pressure for innovation.

This article is intended to be a starting point for the understanding of the makerspace networks phenomenon. Further and more structured research should consider ways to perform a methodical comparison among makerspace networks and with those of other organizational typologies, conducting quantitative measuring of their systemic effects on the RIS (also considering other systemic approaches), towards the definition of a general framework for performance analysis of new types of collaborative projects.

Andrea Cattabriga is currently Research Fellow and Adjunct Professor at the University of Bologna. His research and work focuses on strategic design, co-design and bottom-up innovation approaches, in the context of innovation ecosystems. He is co-founder of the award winning design firm Slow/d, where since 2011 investigates the relationship between design and new sustainable production paradigms, from digital platforms to makerspaces.

Bibliography

Associazione Mak-ER. "Mak-ER / Statuto Dell'Associazione," 2018. Accessed January 16, https://www.mak-er.it/wp-content/uploads/2019/06/Statuto_Mak_ER.pdf.

Autio, Erkko. "Evaluation of RTD in Regional Systems of Innovation." *European Planning Studies* 6, no. 2 (April 1, 1998): 131–40. https://doi.org/10.1080/09654319808720451.

Belussi, Fiorenza, Alessia Sammarra, and Silvia Rita Sedita. "Learning at the Boundaries in an 'Open Regional Innovation System': A Focus on Firms' Innovation Strategies in the Emilia Romagna Life Science Industry." *Research Policy* 39, no. 6 (July 1, 2010): 710–21. https://doi.org/10.1016/j.respol.2010.01.014.

Bianchi, Annaflavia, and Patrizio Bianchi. "Keeping Emilia-Romagna Strong: An Integrated Industrial Policy Approach." *Wirtschaftsdienst* 99, no. 1 (April 1, 2019): 65–70. https://doi.org/10.1007/s10273-019-2434-8.

Bianchini, Massimo, Massimo Menichinelli, Stefano Maffei, Francesco Bombardi, and Alessandra Carosi. */Makers' inquiry. Un'indagine socioeconomica sui makers italiani e su Make in Italy/*. Milan: Libraccio Editore, 2015. http://makersinquiry.org/.

Böhmer, Annette Isabel, Andreas Beckmann, and Udo Lindemann. "Open Innovation Ecosystem---Makerspaces within an Agile Innovation Process," 1–11. Brisbane, 2015. Accessed January 16, 2020, https://mediatum.ub.tum.de/doc/1292171/1292171.pdf.

Chesbrough, Henry. "Open Innovation: a New Paradigm for Understanding Industrial Innovation." In *Open innovation: Researching a new paradigm*, ed. Henry Chesbrough, Win Vanhaverbeke and Joel West, 0–19. Oxford: Oxford University Press, 2006.

Colegrove, Patrick "Tod." "Editorial Board Thoughts: Libraries as Makerspace?" Information Technology and Libraries 32, no. 1 (March 30, 2013): 2–5. https://doi.org/10.6017/ital.v32i1.3793.

Dougherty, Dale. "The Maker Movement." *Innovations: Technology, Governance, Globalization* 7, no. 3 (July 1, 2012): 11–14. https://doi.org/10.1162/INOV_a_00135.

"Fab Foundation—What Qualifies As A Fab Lab?" Accessed August 11, 2019. Accessed January 16, 2020, https://www.fabfoundation.org/index.php/what-qualifies-as-a-fab-lab/index.html.

Fasoli, Alessandra, and Silvio Tassinari. "Engaged by Design: The Role of Emerging Collaborative Infrastructures for Social Development. Roma Makers as A Case Study." *The Design Journal* 20, no. sup1 (July 28, 2017): S3121–33. https://doi.org/10.1080/14606925.2017.1352819.

Gershenfeld, Neil A. Fab: *The Coming Revolution on Your Desktop---from Personal Computers to Personal Fabrication*. New York: Basic Books, 2005.

———. "How to Make Almost Anything: The Digital Fabrication Revolution." *Foreign Affairs* 91, no. 6 (2012): 42–57.

"Getting Started with Fab Labs." Accessed December 30, 2019, https://fabfoundation.org/getting-started/#fablabs-full.

Halverson, Erica Rosenfeld, and Kimberly Sheridan. "The Maker Movement in Education." *Harvard Educational Review* 84, no. 4 (December 1, 2014): 495–504. https://doi.org/10.17763/haer.84.4.34j1g68140382063.

Holm, Eric van. "What Are Makerspaces, Hackerspaces, and Fab Labs?" SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, November 7, 2014. Accessed January 16, 2020, https://papers.ssrn.com/abstract=2548211.

"Home - Fab Labs Nation." Accessed December 30, 2019, https://wiki.fablabsnation.ca/index.php/Accueil/en.

Inkpen, Andrew C., and Eric W. K. Tsang. "Social Capital, Networks, and Knowledge Transfer." *Academy of Management Review* 30, no. 1 (January 1, 2005): 146–65. https://doi.org/10.5465/amr.2005.15281445.

Jackson, Andrew. "Makers: The New Industrial Revolution." Journal of Design History 27, no. 3 (September 1, 2014): 311–12. https://doi.org/10.1093/jdh/ept048.

Jackson, David, and Karen Seashore Louis. "From Professional Learning Community to Networked Learning Community." In *Professional Learning Communities: Divergence, Depth and Dilemmas. Professional Learning*, edited by Louise Stoll and Karen Seashore Louis, 1--24. Columbus, OH: Open University Press, 2007. Accessed January 16, 2020, http://www.learnersfirst.net/private/wp-content/uploads/From-professional-learning-community-to-networked-learning-community.pdf.

mak-er. "La Carta dei Valori di Mak-ER," July 27, 2017. Accessed January 16, 2020, https://www.mak-er.it/la-carta-dei-valori-di-mak-er/.

FabLabs.io - The Fab Lab Network. "Labs Map | FabLabs." Accessed December 30, 2019, https://fablabs.io/labs/map.

Levy, Steven. *Hackers: Heroes of the Computer Revolution*. 1st edition. Sebastopol, CA: O'Reilly Media, 2010.

Maffei, Stefano, and Massimo Bianchini. "Microproduction Everywhere. Social, Local, Open and Connected Manufacturing." Social Frontiers The next Edge of Social Innovation Research. Milan, October 2013. Accessed January 16, 2020, https://www.scribd.com/document/192022372/Microproduction-everywhere-Social-local-open-and-connected-manufacturing.

mak-er. "Manifesto della rete Mak-ER." Accessed December 30, 2019. https://www.mak-er.it/chi-siamo-con-testi-vecchi/.

Memarovic, Nemania, Sidney Fels, Junia Anacleto, Roberto Calderon, Federico Gobbo, and John M. Carrol. "Rethinking Third Places: Contemporary Design With Technology." *The Journal of Community Informatics* 10, no. 3 (2014).

Mikkonen, Teemu, Tere Vadén, and Niklas Vainio. "The Protestant Ethic Strikes Back: Open Source Developers and the Ethic of Capitalism." *First Monday* 12, no. 2 (February 5, 2007). https://doi.org/10.5210/fm.v12i2.1623.

Moilanen, Jarkko. "Emerging Hackerspaces—Peer-Production Generation." In Open *Source Systems: Long-Term Sustainability*, edited by Imed Hammouda, Björn Lundell, Tommi Mikkonen, and Walt Scacchi, 94–111. IFIP Advances in Information and Communication Technology. Berlin, Heidelberg: Springer, 2012. https://doi.org/10.1007/978-3-642-33442-9.

"Nation of Makers—A National Nonprofit Dedicated to Helping Support America's Maker Organizations through Advocacy, Resource Sharing, and the Building of Community within the Maker Movement and Beyond." Accessed December 30, 2019, https://nationofmakers.us/about.html.

Niaros, Vasilis, Vasilis Kostakis, and Wolfgang Drechsler. "Making (in) the Smart City: The Emergence of Makerspaces." *Telematics and Informatics* 34, no. 7 (November 1, 2017): 1143–52. https://doi.org/10.1016/j.tele.2017.05.004.

Oldenburg, Ray. *The Great Good Place*. Cambridge MA: Da Capo Press, 1980.

Oliveira, Lindomar Subtil de, Márcia Elisa Soares Echeveste, Marcelo Nogueira Cortimiglia, and César Giovani Colini Gonçalves. "Analysis of Determinants for Open Innovation Implementation in Regional Innovation Systems." *RAI Revista de Administração e Inovação* 14, no. 2 (April 1, 2017): 119–29. https://doi.org/10.1016/j.rai.2017.03.006.

Pepper-Kittredge, Carol, Deborah Bird, and Brie Lindsey. "Growing A Network of Makerspaces in California Community Colleges: Moving Towards Implementation and Adoption." Stanford, CA, 2018. Accessed January 16, 2020, https://cccmaker.com/wp-content/uploads/2018/08/CCCMaker-FINAL-submission.pdf.

Pepper-Kittredge, Carol, and Paul A Devoe. "Creating a Network of Community Colleges with Makerspaces: California 's CCC Maker Model," 221–224. Boston, MA, 2016.

Peppler, Kylie, Erica Halverson, Yasmin B. Kafai, Erica Halverson, and Yasmin B. Kafai. *Makeology: Makerspaces as Learning Environments (Volume 1)*. Abingdon-on-Thames: Routledge, 2016. https://doi.org/10.4324/9781315726519.

Santos, Eduardo Ferro dos, and Paul Benneworth. "Makerspace for Skills Development in the Industry 4.0 Era." *Brazilian Journal of Operations & Production Management* 16, no. 2 (May 26, 2019): 303–15. https://doi.org/10.14488/BJOPM.2019.v16.n2.a11.

Programma operativo regionale. "Servizi innovativi per le pmi 2016." Accessed December 30, 2019, https://fesr.regione.emilia-romagna.it/opportunita/2016/servizi-innovativi-per-le-pmi.

Slatter, Diane, and Zaana Howard. "A Place to Make, Hack, and Learn: Makerspaces in Australian Public Libraries." *The Australian Library Journal* 62, no. 4 (November 1, 2013): 272–84. https://doi.org/10.1080/00049670.2013.853335.

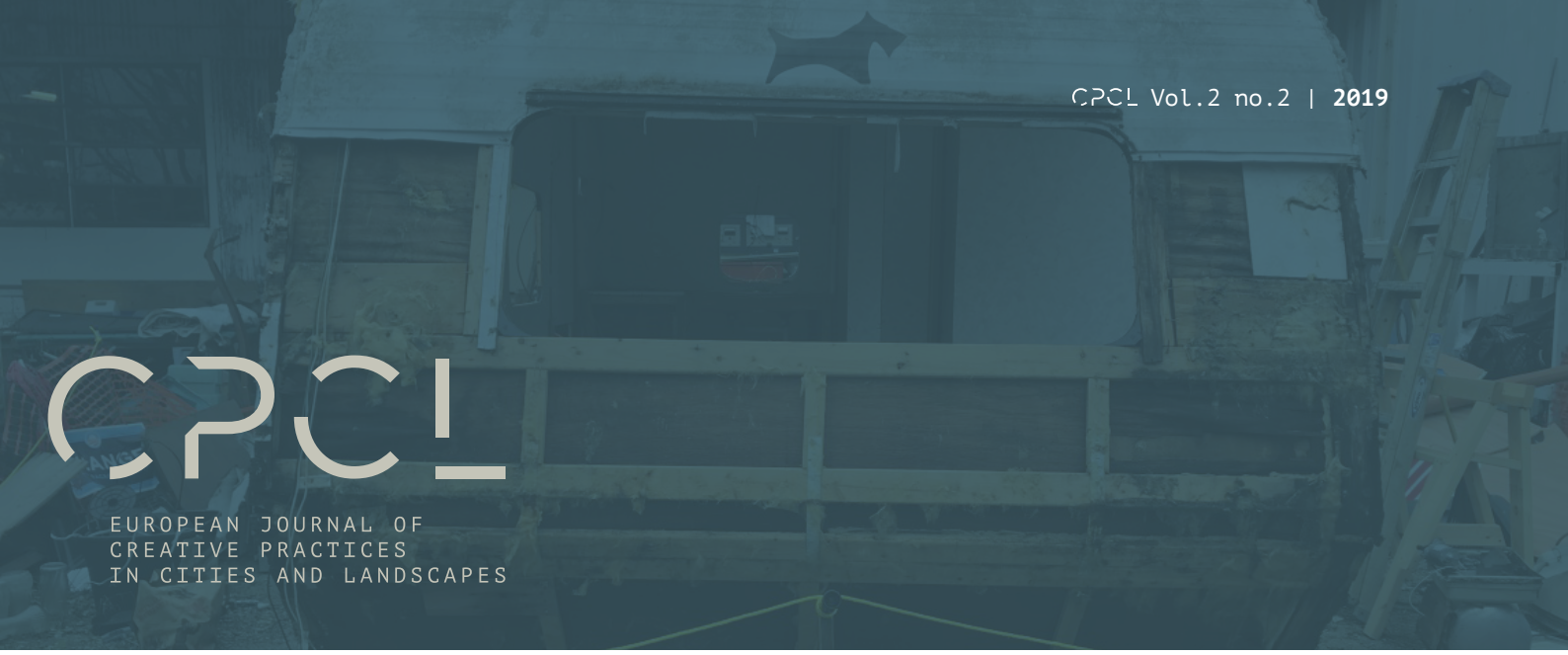
Taylor, Nick, Ursula Hurley, and Philip Connolly. "Making Community: The Wider Role of Makerspaces in Public Life." In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*, 1415–1425. New York: Association for Computing Machinery, 2016. https://doi.org/10.1145/2858036.2858073.

Tödtling, Franz, and Michaela Trippl. "One Size Fits All?: Towards a Differentiated Regional Innovation Policy Approach." *Research Policy*, Regionalization of Innovation Policy, 34, no. 8 (October 1, 2005): 1203–19. https://doi.org/10.1016/j.respol.2005.01.018.

Troxler, Peter, and Patricia Wolf. "Digital Maker-Entrepreneurs in Open Design: What Activities Make up Their Business Model?" *Business Horizons*, THE GENERATIVE POTENTIAL OF EMERGING TECHNOLOGY, 60, no. 6 (November 1, 2017): 807–17. https://doi.org/10.1016/j.bushor.2017.07.006.

Wolf, Patricia, and Peter Troxler. "Community-Based Business Models: Insights from an Emerging Maker Economy." *Interaction Design and Architecture(s) Journal (IxD&A)* 30 (2016): 75–94.

CPCL Vol.2 no.2 | 2019



CPCL
EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES

MAIN SECTION

Making with Repurpose: Finding Architectural Value between Waste and Landfill

Donna Cohen — University of Florida (United States); Armstrong + Cohen Architecture (United States) dcohen@ufl.edu
DK Osseo-Asare — Penn State University (United States); Low Design Office (United States) — ydo1@psu.edu
Charlie Hailey — University of Florida (United States) — clhailey@ufl.edu

ABSTRACT
This project rethinks architectural work in the context of waste. Fourth-year students designed and built a mobile maker-space at the Repurpose Project, a last stop for cast-off materials before the landfill. This essay argues that the material ecologies found in such places provide a critical context for understanding architectural work as a collective body of knowledge and practical know-how. The rejected and scrapped materials themselves had agency, carrying legacies and future potentialities, not just for the project but also for the larger collaborative project of evaluating and addressing work and waste in and out of academia and the architectural profession. Building the maker-space recast the process of making as a series of critical ecological acts and explored the Repurpose Project model as a knowledge commons for alternative architectural practices.

KEYWORDS
Architecture; Design/Build; Pedagogy; Making; Technology/Science.

PEER REVIEWED
https://doi.org/10.6092/issn.2612-0496/9554
ISSN 2612-0496

The Work of Valuation

How much do you want to pay? That's what you're asked when you approach the cashier at Repurpose Project. At first, this is disarming, then liberating, and finally the question elicits the work of valuation. But only after you have combed aisles, piles, stacks, and rolls. From areas of porcelain, pink, white, and beige, spilling into rafts of tiles and signs, across hoops of laminate stripping, sheaves of PVC pipe (one is painted as a clown's cannon), onto pressed tin shingles, which are so many fish scales across the ground, an attic of chair frames (an upholsterer was the building's previous tenant), bolts of fabric from the 1980s, a rococo mashup of wood moldings, mounds of thoracic x-rays, hillocks of floppy discs, heaps of colored film, waves of spools, magazines of brackets. All is for sale, all negotiable. [Fig. 1- 2]

The Repurpose Project is located in a university town in Florida's north central region, an area between the American Deep South and the southern part of the state. Anchored by the University of Florida, the town of Gainesville is known as a place of creative music makers, writers, nature-lovers; it is a liberal bubble within conservative old Florida—a student town with international connections, a place for innovation and aspiration. A small city with a large disparity in the ownership of wealth and material goods, it has the widest academic achievement gap between local White and Black children in the state. A town now awakened to its legacy of slavery and Jim Crow, it is place of young leadership, optimism and growth. The Repurpose Project has become an important resource in Gainesville, and with our project for the Maker Space, we sought further, even more diverse connections between the town's citizens and its discarded objects and materials.

The Repurpose Project, often referred to simply as "Repurpose," is a place that explicitly promotes reuse of materials in order to diminish the amount of waste in the local landfill, and, in doing so, empowers a diverse community to make things for themselves and to combat pervasive consumer culture. Founded in 2012 by artist Sarah Goff and environmentalist and building de-constructor Mike Myers, Repurpose currently takes the form of a compound. It includes an indoor area comprised of a large and seemingly patched together warehouse space, with a second floor loft filled with the relics of the warehouse's furniture-making past—chair and couch frames, table legs, chair legs, webbing for seats, and other odds and ends from furniture repair and maintenance. The outdoor area of Repurpose is a series of yards of sometimes inexplicably arranged waste materials. It is an array of fragments, from raw materials like wood and steel to cast-off fixtures like sinks and toilets to groupings of building fragments like cornices, sheets of roofing and vents. Located in a light industrial zone, fumes from the neighboring paint factory are in the air, and occasionally loud noises emanate from the metal shop nearby. The staff of Repurpose

FIG. 1 Salvaged and stockpiled air-conditioning vents at the Repurpose Project

includes the founders and other artists and student volunteers who share a vision for an expanded physical space and a broadened role in the local community. Despite skirting the edge of zoning laws and building codes, Repurpose has expanded its retail area and salvage yard and continued an ambitious series of building phases to service the community: lumber yard, art gallery, community workshop, public cinema, music venue, and plans for the Maker Space.

These indoor and outdoor areas of Repurpose are filled with refuse, available to anyone who searches. The search itself takes on the feel of a hunt. Each day as we began work, we set out on what we called “walkabouts.” Walking through piles of materials and objects, our eye moved quickly, sending images to our minds that fed our imagination with new possibilities. Design/build is inherently a heuristic method of teaching and learning. Designing as well as actually building, we all learn by touching and testing a piece, lifting it, moving it, bending and breaking it, throwing it back, picking another. Students and faculty regularly walked the grounds on material “hunting” or “fishing” expeditions. The walks were meditative,

FIG. 2 Materials for sale at the Repurpose Project

daily roves. Could this piece, rotated from its normal orientation, connect to another found object that is also transformed—will this piece answer the need? On any given day, we came across a surprising number and variety of people who were also drifting through the yard, each in a private trance, which was broken only with an "Aha!" when the right piece for the project was found.

The Repurpose Project, this Spatial Common, is a topsy-turvy place where there is no normal. It makes no sense to store things outside in Florida. Relentless sub-tropical humidity ensures imminent decay of practically everything. Over time, all materials break down, first paper dissolves, then metal rusts, wood rots, and even porcelain and tiles crack and chip away. Glass resists rot, but often scratches and shatters. The moist crevices within the piles and stacks provide habitats for new life: insects, small animals, and also our imagination.

Our studio joined the Repurpose Project to design and build a mobile maker-space: an all-in-one fix-it shop, art-room, and puppet-stage. Occupying

an acre-and-a-half lot and thirteen-thousand-square-foot warehouse, Repurpose was founded as a "non-profit junk shop" that works at "salvaging valuable resources left behind by traditional reuse markets" in a niche between "second hand stores" and the landfill. Repurpose is a form of counterculture, serving to contest throwaway consumer culture, a project most have abandoned in the current age of social media. It operates under extreme financial constraints—requiring efficiency—and therefore offers a useful introduction to design for efficiency and re-valuation of all the costs of building. Like customers asked to name a price, architecture students were challenged by Repurpose to determine how to use what consumer culture has jettisoned.

Our use of the term "counterculture" links the Repurpose Project to the tensions between individual agency and self-sufficiency and passive consumption, particularly in a consumer culture that has only expanded since the term's early uses to describe a late modern subculture in the 1960s and 1970s. The *Whole Earth Catalog* provides a significant step in the genealogy of this counterculture and its particular connections to the use and reuse of objects and tools. Initiated by Stewart Brand in 1968, the *Whole Earth Catalog* was divided into nine sections, including "Community," "Land Use," "Shelter" and "Craft." The low-cost publication included not only products but also essays that addressed themes of ecology, invention, and do-it-yourself projects. The catalog's stated function, in particular, provides an important link between the Repurpose Project's current goals and the legacies of the earlier counterculture's objectives: "The Whole Earth Catalog functions as an evaluation and access device. With it, the user should know better what is worth getting and where and how to do the getting." Like the Repurpose Project, the catalog's project established a framework for education, ethics of use, and independent living. Also like Repurpose, the catalog advocated the repurposing of old technologies for new uses so that readers, and makers, could "find [their] own inspiration, shape [their] own environment, and share [their] adventure with whoever is interested."[1]

Between Waste and Landfill: A Space of the Common Object

In the so-called waste stream, Repurpose constitutes a kind of last storm grate before the landfill. The Project has a landfill's jumble but none of its attempts to make waste invisible; the debris yields a kind of clarity, lifting the hood on society's cast-offs and its economic engine of planned

1. For the full text of this "Purpose" statement as well as the "Function" statement quoted above, refer to page one of any Whole Earth Catalog published between 1968 and 1972. For additional discussion of counterculture and the Whole Earth Catalog, see Fred Turner, From Counterculture to Cyberculture (Chicago: University of Chicago Press, 2006) and Raymond Malewitz, *The Practice of Misuse: Rugged Consumerism in Contemporary American Culture*, 1 edition (Stanford, CA: Stanford University Press, 2014).

obsolescence. The politics of value play out in the many exchanges that take place here: between staff and customers, staff and stuff, customers and things, and among things themselves. There is a tangible materiality. The things speak, wait, and move—surprisingly often, they are picked up and dropped here and there. Each item has agency, and this place is a laboratory where political theorist Jane Bennett might continue testing the vibrancy of matter, philosopher of science Bruno Latour could convene another parliament of things, even French philosopher Henri Bergson might glean further insights on *élan vita*l and the role of indeterminacy.[2]

Exceedingly practical and technologically defined endpoints within the traditional waste stream, landfills have recently been framed theoretically and sociologically. Kevin Hetherington analyzed the waste stream as a ritual that he compares to burial practices. In the process, the landfill is a "second burial" after an initial interment in a storage area, whether that is a domestic site like bookshelves or outbuilding sheds, or a technologically defined place like the recycle bin of a computer.[3] Hetherington, and Thompson before him, provide important examples of how the waste stream, of which the landfill and sites like the Repurpose Project are a part, has a "spatial dimension" and is in fact a system of spaces, where objects are "placed" rather than merely "disposed."[4] Building on Hetherington's work, Bahar Emgin notes the importance of the interval between the two burials for the process of re-valuation and for the concept of "trashion," which adapts and repurposes objects that have been previously disposed of. Emgin deploys design as a "conduit of disposal," building on Thompson's original idea that rubbish is not merely an object but is the entire process of disposal; and consequently design has the power to reintroduce "rubbish as objects of distinction."[5] Landfills have also been proposed as underpinnings for new, polemical strategies of urbanism. Building on Alan Berger's *Drosscape*, Daniel Weissman suggests landfill urbanism as the site for a hybrid solution to repurpose waste: "The Sorted Project…may allow for a higher return on waste materials, combining the emergent potentials of the junk-yard with the rigorous industrial process

---

2. See Jane Bennett, Vibrant Matter: A Political Ecology of Things (Durham and London: Duke University Press, 2010); Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter (Cambridge, MA: Harvard Univ Press, 1993), 142–145.; and Joshua Reno, "Your Trash Is Someone's Treasure: The Politics of Value at a Michigan Landfill," *Journal of Material Culture* 14, no. 1 (March 1, 2009): 29–46. Joshua Reno, "Toward a New Theory of Waste: From 'Matter out of Place' to Signs of Life," *Theory, Culture & Society* 31, no. 6 (November 1, 2014): 3–27. also offers insightful discussion of the politics of value in landfills and waste management. See also Henri Bergson, Matter and Memory, trans. N. M. Paul and W. S. Palmer (New York: Zone Books, 1990); and Henri Bergson, *Creative Evolution*, trans. Arthur Mitchell (New York: Dover Publications, 1998).

3. See Kevin Hetherington, "Secondhandedness: Consumption, Disposal, and Absent Presence:," *Environment and Planning D: Society and Space*, February 1, 2004.

4. Ibid., 66. and Michael Thompson, *Rubbish Theory: The Creation and Destruction of Value* (Oxford and New York: Oxford University Press, 1979), 159.

5. Bahar Emgin, "Trashion: The Return of the Disposed," *Design Issues* 28, no. 1 (January 2012): 70–71.

of the recycling center."[6] The Repurpose Project, although it is not located on or adjacent to a landfill, parallels Weismann's proposal.

Scrap yards and the processes associated with them entail what is often referred to as "material recovery." When combined with deliberate design activities, such as those included in "open maker" projects, this "recovery" begets "discovery." This process of discovery includes the simultaneously systematic exploration *for* and serendipitous finding *of* new use values for objects and material assemblies recovered from the waste stream. We are familiar with thrift shops filled with shelves of goods, including housewares, toys, tools and oddities; shops for the sale of previously owned clothing, both "designer" and un-designed; and virtual marketplaces for everything that can be sold. But Repurpose has a different vision. As Goff states, "Anything accepted here has likely been rejected from ordinary thrift shops. This is not simply a second-hand store because most things cannot be picked up and used in their current state. Here the donations must be reimagined, must be made into something, else."[7] The Repurpose Project synthesizes scrap yard and recycle center with alternative conventional second hand shops, just as it occupies a unique place between waste and landfill.

What manner of building shall we build?

Immersed in this landscape of things, our work meshed with the owners and volunteers who spend much of the day sorting donations and other acquired materials. Two logics played out: one of classification and sorting (based on shape, material, and previous use) and another of aleatory discoveries and the unexpected associations they might bring. Here, the usual specifying and purchasing took the form of sorting, touching, weighing, lugging, cannibalizing and incorporating. We mined a repository of disposed materials and components to identify their latent utility and aesthetic value and to imagine how they could be recombined to produce new architectural value. Our process tapped into a multivalent taxonomy: recycling (re-using as feedstock into something new), upcycling (converting into a new material status), repurposing (using for a different function), resynthesis (combining components into new assemblages), cannibalization (removing parts to repair or maintain something else), and bricolage (making something by means of something else). One rule framed this ecology of work: everything had to come from Repurpose. [Fig. 3 - 4 - 5]

---

6. Daniel Weissman, "Landfill as Urbanism," *Soiled: Groundscrapers* 1, no. 1 (2011): 37–38. See also Alan Berger, Drosscape: Wasting Land in Urban America (New York: Princeton Architectural Press, 2006); and Pierre Belanger, *Landscape as Infrastructure: A Base Primer* (Abingdon-on-Thames and New York, NY: Routledge, 2016).

7. Sarah Goff, "What we are," The Repurpose Project, accessed October 24, 2019, http://www.repurposeproject.org/about/what-we-are/.

FIG. 3 Preliminary design study for the Maker Space for presentation to the community and to staff at the Repurpose Project

FIG. 4 Preliminary collage of materials and materiality by students in the design/build studio

FIG. 5 Students engaging in a process of "resynthesis" during the construction of the Maker Space. This collage made by the students also demonstrates their process of reflection during construction.

Construction began with deconstruction. Students disassembled a donated Scotty travel trailer, returning its component parts to Repurpose and leaving a dual-axle chassis on which to build. **[Fig. 6 - 7]** In the next step, tongue-and-groove timber roof decking (recently removed from a 19th century building across the street from the university) became the floor, and salvaged cedar provided framing for wall and roof. Throughout this process, even in the conventions of these early stages, Wallace Stevens' question was our question, haunting us, prodding us about the "manner of building"—how to classify what we were doing in a place that defied easy classification but went to the core of economies of production and why we design and build.[8]

8. Our collaboration with Marsha Bryant's poetry class led us to Wallace Stevens' poem "Architecture," in Opus Posthumous, (New York: Vintage, 1990), 37–39.

FIG. 6-7 Travel trailer used as the base for the Maker Space, in the process of disassembly

As we shifted to the building envelope, the cedar frame became a scaffold for shelves, storage, and sheathing and a substrate for countless mock-ups, testy debates, and sometimes, quite simply, the hard work of fastening, cutting, and binding. Each work day began with "walk-abouts" through Repurpose to discover new materials and, with them, new ideas but also new complexities, new problems. For some, the gleaned materials were animate with possibilities of light, reflection, and texture—actual examples of what Bennett has called "thing-power."[9] For others, found objects—whether HVAC duct collars, steel shelving, or wooden chair legs—became tokens around which compositions were established and debates played out. These were as social as they were material, and not unlike

9. Bennett, *Vibrant Matter*, 2.

FIG. 8 Exploring material studies as the project is framed out

Latour's "quasi-objects," they drew relations between groups of students, Repurpose staff, and students visiting from the poetry class or the anthropology seminar with whom we collaborated. And others embraced the spontaneity of the place, relishing a Bergsonian indeterminacy in the materials as they composed joints and corners. Our assembled Repurpose Project, simplistic and reductivist, perhaps idealistic and nearly all-powerful, was a form of escape from constraints of socioeconomic apparati. [Fig. 8]

The Dump is full of images

In this project, we were rethinking the work of an architect in the context of waste. "On the dump" like the restive poet Stevens depicts, we also struggled to materialize a project in a localized, disorienting swirl of materials left behind by far-flung systems of production, obsolescence, and waste.[10] Conferring with Repurpose's owners and the Trash Princess who will perform and run clinics in the mobile trailer, the students dubbed their project the "Trash Castle," but the things at Repurpose might be closer to Mary Douglas' definition of dirt as "matter out of place"[11] than they are to waste because they haven't officially crossed that threshold to the rubbish tip, although people do treat the Project's side entrance as an ad hoc dumping ground and the items on display do indicate society's wastefulness, and the material for sale might appear to some as so much garbage. But students also found the materials at Repurpose to be a kind of "generative waste," particularly as it is used by Ron Eglash to describe maker culture

10. Wallace Stevens, "The Man on the Dump," in *The Collected Poems* (New York: Knopf, 1990), 201–202.. This section's title comes from that poem.

11. Mary Douglas, *Purity and Danger An Analysis of Concepts of Polution and Taboo* (Westport, CT: Frederick A. Praeger, 1969), 36.

FIG. 9 Maker Space nearing completion, on site at the Repurpose Project

in Africa.[12] Here, the idea is that waste can have an inherent value that can help "generate" process and production, specifically, in our case, architectural production. A critical point for us is that such "generative waste" aligns with a post-capitalist project that seeks to avoid exploiting people, materials, and ecosystems. [Fig. 9]

The Repurpose Project itself is already a new type of architectural system. When Douglas wrote "[w]here there is dirt there is system," she made clear that dirt is the "by-product" of a classification in the process of rejecting what is no longer pure, but here at Repurpose new potential systems emerged with the sorting and then repurposing, within the riot of what has been rejected.[13] These things were cast off, but then found a place in the junk shop and are now in the Trash Castle. Not so much the differences between purity and dirt, but more in the contrasting terms of operative and defunct. So that what might no longer work in one setting could very well function in the new assemblages. Students found systems in disused objects, and their production of images, collaged during and after the project, open up other "junk shops" of architectural possibilities. [Fig. 10]

Maker Space in the City

Sourcing parts and materials exclusively at Repurpose, students understood architects as participant-partners—not apart from society, but highly engaged, hyper-active members of society, working alongside

12. Ron Eglash and Ellen Foster, "On the Politics of Generative Justice: African Traditions and Maker Communities," in *What Do Science, Technology, and Innovation Mean from Africa*, ed. C. Mavhunga (Cambridge, MA: The MIT Press, 2017), 117–136.

13. Douglas, *Purity and Danger*, 36.

FIG. 10 Maker Space nearing completion, on site at the Repurpose Project

non-specialists. The recycled elements served to mediate conversations among students and even more significantly served as intermediaries between students and their clients at Repurpose. Students worked with Repurpose to reassign meaning to cast-off objects. The fact that the objects were already full-scale and readily available on site made this process dynamic and tangible, and it occurred in "real-time" unlike more conventional designer-client interactions that use scale models, drawings, and phases to design a project.

This experience of co-creation has value. And just as the component parts of the assemblage performed their legacies of use and re-use throughout the studio's process, the Trash Castle will itself hold future performances.[14] More broadly, the project at Repurpose took a modest step toward understanding architecture as a collective body of knowledge and practical know-how—a knowledge commons that includes material ecologies and cultures of reusable technology amid interstices of the waste stream in and out of both academia and the profession.

A mindset of making is the only way to engage with the space. The Repurpose mission is twofold: first, limit material sent directly to the landfill by providing another chance for its use, and second, perhaps even more ambitious, provide hands-on education to ensure that local residents have knowledge, skills, and imagination to make what they need from the abundance of refuse available here. The ground is literally the store, and the refuse is now the stock. As a mobile extension of Repurpose, the Maker

14. What Bennett calls "attentive encounters between people-materialities and thing-materialities." Bennett, *Vibrant Matter*, viii.

Space will become the schoolhouse where all ages can learn how to fix and build using the unexpectedly available stock of the day—the common objects discarded by society.

One unexpected part of our experience, along with our students, was that the more we made with our hands, the less we valued our early architectural drawings and models as projections of the possible outcomes of the project. The normative pedagogical and design tools native to the design studio (such as computer modeling, printed drawings, pin-up boards) were devalued in the context of Repurpose's scrap yard. The early, beautifully rendered compositional production that was plotted on large format posters were themselves discarded. The physical objects sourced from Repurpose, and the Maker Space itself, as a kind of full-scale model, were the new focal points of the design process. We witnessed a shift in the utility of design tools and objects with respect to the students' process of designing and building architecture: Why work on the drawing, when the physical object is at hand?

The Repurpose Project plans to send the Maker Space into the city. The trailer's mobility means that Repurpose can expand the reach of their mission and provide access to knowledge and materials to a diverse population across the city's public spaces. The Maker Space is a tool of learning that also, quite literally, provides access to necessary tools and common objects, which might empower makers throughout the city. As a heuristic device, it assists the process of learning about the waste stream and about ways to use discarded materials. In the city, the mobile Maker Space is also a significant tool for dialogues about waste and valuation.

As it curates junk, like the Repurpose Project's home base, the Maker Space provides a forum for regeneration and change in the city. As a catalyst for innovation and creativity, it occupies what Thompson termed a "region of flexibility" between objects that are transient and durable. But there is an important difference. As Thompson notes, "access to innovation and creativity is not freely available to all members of our society," but the Maker Space's mobility and the Repurpose Project's mission to offer hands-on education to all citizens begin to bridge this gap of access.[15] If the Repurpose Project models a knowledge commons for alternative architectural practices, then the Maker Space extends this commons out into the city, where residents might reconsider the value of common objects within an educational setting designed and built through a similar process of valuation and making.

15. Thompson, *Rubbish Theory*, 25–26..

Donna L. Cohen is Associate Professor of Architecture, Affiliate Faculty of the Center for African Studies, and liason for the African Architecture Working Group. She is co-founding principal of Armstrong + Cohen Architecture, focusing on community initiated projects. # optional short bio, no more than 100 words; markdown ok, not paragraphs

Charlie Hailey is Professor of Architecture and Distinguished Teaching Scholar in the School of Architecture at the University of Florida. A registered architect, Hailey has received numerous awards and grants including a Guggenheim Fellowship, Fulbright Scholarship, and Graham Foundation grant. He is the author of Design/Build with Jersey Devil (Princeton Architectural Press, 2016), Spoil Island: Reading the Makeshift Archipelago (Rowman & Littlefield, 2013), Camps: A Guide to 21st-Century Space (MIT Press, 2009), Campsite: Architectures of Duration and Place (LSU Press, 2008), and most recently Slab City: Dispatches from the Last Free Place (MIT Press, 2018) with photographer Donovan Wylie.

DK Osseo-Asare is co-founding principal of transatlantic architecture and integrated design studio Low Design Office (LOWDO); co-founder of Agbogbloshie Makerspace Platform (AMP); and assistant professor of architecture and engineering design at Penn State University, where he directs Humanitarian Materials Lab.

Bibliography

Belanger, Pierre. *Landscape as Infrastructure: A Base Primer*. Abingdon-on-Thames and New York, NY: Routledge, 2016. https://doi.org/10.4324/9781315629155.

Bennett, Jane. *Vibrant Matter: A Political Ecology of Things*. Durham and London: Duke University Press, 2010. https://doi.org/10.1215/9780822391623.

Berger, Alan. *Drosscape: Wasting Land in Urban America*. New York: Princeton Architectural Press, 2006.

Bergson, Henri. *Creative Evolution*. Translated by Arthur Mitchell. New York: Dover Publications, 1998.

———. *Matter and Memory*. Translated by N. M. Paul and W. S. Palmer. New York: Zone Books, 1990.

Douglas, Mary. *Purity and Danger An Analysis of Concepts of Polution and Taboo*. Westport, CT: Frederick A. Praeger, 1969.

Eglash, Ron, and Ellen Foster. "On the Politics of Generative Justice: African Traditions and Maker Communities." In *What Do Science, Technology, and Innovation Mean from Africa*, edited by C. Mavhunga, 117–136. Cambridge, MA: The MIT Press, 2017.

Emgin, Bahar. "Trashion: The Return of the Disposed." *Design Issues* 28, no. 1 (January 2012): 63–71. https://doi.org/10.1162/DESI_a_00124.

Hetherington, Kevin. "Secondhandedness: Consumption, Disposal, and Absent Presence." *Environment and Planning D: Society and Space*, February 1, 2004. https://doi.org/10.1068/d315t.

Latour, Bruno. *We Have Never Been Modern*. Translated by Catherine Porter. Cambridge, MA: Harvard Univ Press, 1993.

Malewitz, Raymond. *The Practice of Misuse: Rugged Consumerism in Contemporary American Culture*. Stanford, CA: Stanford University Press, 2014. https://doi.org/10.11126/stanford/9780804791960.003.0001.

Reno, Joshua. "Toward a New Theory of Waste: From 'Matter out of Place' to Signs of Life." *Theory, Culture & Society* 31, no. 6 (November 1, 2014): 3–27. https://doi.org/10.1177/0263276413500999.

———. "Your Trash Is Someone's Treasure: The Politics of Value at a Michigan Landfill." *Journal of Material Culture* 14, no. 1 (March 1, 2009): 29–46. https://doi.org/10.1177/1359183508100007.

Stevens, Wallace. *Opus Posthumous*. New York: Vintage, 1990.

———. *The Collected Poems*. New York: Knopf, 1990.

Thompson, Michael. *Rubbish Theory: The Creation and Destruction of Value*. Oxford and New York: Oxford University Press, 1979.

Turner, Fred. *From Counterculture to Cyberculture*. Chicago: University of Chicago Press, 2006. https://doi.org/10.7208/chicago/9780226817439.001.0001.

Weissman, Daniel. "Landfill as Urbanism." *Soiled: Groundscrapers* 1, no. 1 (2011): 28–41.

CPCL Vol.2 no.2 | 2019

CPCL
EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES

MISCELLANEA

Mapping Uses, People and Places: Towards a Counter-Cartography of Commoning Practices and Spaces for Commons. A Case Study in Pavia, Italy

Ioanni Delsante — University of Huddersfield (United Kingdom); University of Pavia (Italy) — I.Delsante@hud.ac.uk
Serena Orlandi — University of Bologna (Italy) — serena.orlandi4@unibo.it

ABSTRACT

The agency of mapping has been an increasingly relevant area of enquiry at the very least since James Corner published his seminal paper on the agency of mapping in 1999. A few projects aiming to map the commons in cities have since developed, providing critical or counter-cartographies in which information on local groups and communities, activities and other informal evidence is collated.

This paper draws on the concept of urban commons as third places in the sense of being beyond market or state control and management, on the notion that commons cannot exist without commoning practices and on the idea of common spaces as distinct from public, private or communal ones. As such, urban commons should be mapped not as static or invariable but rather as dynamic entities that evolve over time. From that perspective, the agency of mapping should take into consideration both current commoning practices and places suitable for these agencies to happen. Spatial features and architectural configurations may also play a role in calling for, or hosting, those agencies.

This paper proposes a methodology based on both primary and secondary data collection. The former is based on a variety of methods and tactics including psycho-geographical tours, non-interactive and interactive forms of observations and mapping. The process of mapping aims to showcase both what is already taking place and possibilities for future uses as a "hidden potential." The findings include the identification of specific places where several layers converge: these may become case studies to be further investigated.

KEYWORDS

Third Spaces; Urban Commons; Commoning Practices; Critical Mapping; Counter Cartography.

PEER REVIEWED
https://doi.org/10.6092/issn.2612-0496/9768
ISSN 2612-0496

Introduction: commons as third spaces

Commons may be described or defined in several ways. Commons have historically been recognised, especially in Common Law countries (e.g. England), as land on which local groups or communities, whose members are called commoners, are granted specific rights to access and share resources.[1] In the Italian context, there are some historical precedents of commons as land and/or its natural resources, such as high mountain pastures (e.g. *communalia* in the province of Parma), usually paired with collective uses (*i.e. usi civici*). While Roman Law accepted these pre-existent rights, it also recognised distinct categories of goods, including public and common ones (*res publicae, res communiae*). However, twentieth-century legislation erased earlier notions of common property and collective rights. This development not only left Italy's national panorama with a gap in terms of acknowledging existing commons but also prevented the creation of new ones.[2]

Over the last couple of decades, the notion of the commons has expanded towards the global and the digital, which have joined other dimensions like the urban commons. However, a review of the scholarly literature indicates that there is not yet agreement on how to define these new phenomena, even if it is possible to track certain key features that could be shared among them.

A first attempt was undertaken by Foster and Iaione and embedded into the several city-wide regulations on common goods and in the Co-City project.[3] For example, Bologna defines common goods as "the goods, tangible, intangible and digital, that citizens and the Administration, also through participative and deliberative procedures, recognize to be functional to the individual and collective wellbeing, activating consequently towards them […], to share the responsibility with the Administration of their care or regeneration in order to improve the collective enjoyment."[4]

For other scholars, urban commons are recognised as forms of spaces that are beyond both state and market logic.[5] As such, we consider them as a type of "third space," although with a slightly different meaning

1. See, for example, 'What is Common Land?' https://foundationforcommonland.org.uk/a-guide-to-common-land-and-commoning, accessed January 28, 2020, and Christopher Rodgers and Duncan Mackay, "Creating 'new' commons for the twenty-first century: Innovative legal models for 'green space,'" *Journal of Environmental Planning and Management* 61, no. 5–6 (2017): 1051–69.

2. See Giuseppe di Genio, Eugenio Benevento, Elena Conte, *Beni comuni e usi civici*, (Limena: Edizioni libreriauniversitaria.it, 2016).

3. Sheila Foster and Christian Iaione, "The City as a Commons," *Yale Law and Policy Review* 34, no. 2 (2016): 281–349.

4. Municipality of Bologna, "Regulation on Collaboration Between Citizens and the City for the Care and Regeneration of Urban Commons," accessed January 22, 2020, http://www.comune.bologna.it/media/files/bolognaregulation.pdf.

5. See Mary Dellenbaugh et al., eds., *Urban Commons: Moving Beyond State and Market* (Berlin: Birkhäuser, 2020).

from how that term was originally used.[6] Current literature supports this statement and expands it in several directions: land ownership, governance, degree of accessibility and activities and functions that urban commons may host or support. In relation to land ownership and its role in urban transformations, for example, the concept of commons goes beyond the traditional dichotomy between state and market. The idea of the commons exists beyond ownership-based functions and rules, as it refers to specific uses by groups or local communities, uses that are temporary rather than permanent.[7]

In terms of accessibility, the spaces of commons work differently from both public spaces and private spaces, although access may be still limited in time and/or to specific groups and communities. As to activities and uses, urban commons may involve forms of production, or better, co-production. The traditional activities of grazing or fishing are replaced in urban areas by the idea of sharing resources for communal purposes. This applies to urban agriculture and to spaces for creative or cultural production. Self-defined groups of people gather to share not only space but also infrastructure, technical equipment, machinery and whatever else is needed to co-produce art, culture and even goods. New forms of governance are usually needed to self-manage resources and enable peer production.[8]

Agencies of mapping, counter-mapping, mapping the commons

The agency of mapping has become an increasingly important area of enquiry in several disciplines, including architecture and urban studies.[9] It is described as a "creative practice" in which agency lies in "uncovering realities previously unseen or unimagined, even across seemingly exhausted grounds."[10] When it applies to current territories, it "re-makes [them] over and over again, each time with new and diverse

6. See Ray Oldenburg, *The Great Good Place: Cafes, Coffee Shops, Community Centers, Beauty Parlors, General Stores, Bars, Hangouts and How They Get You Through the Day*, 1st ed. (New York: Paragon House, 1989). The concept of third spaces originally referred to spaces other than homes (first places) or working places (second places) and included a wide variety of spaces with varying degrees of publicity: parks, squares, malls and soon. More recently, co-working and co-living spaces have been interpreted as mixed or hybrid forms of third spaces. For some authors, third spaces should include "informal public places in which we interact" and those that "offer places of interaction—promoting togetherness."

7. Ioanni Delsante, "The Temporary City, Urban Commons and Commoning Practices" (Keynote Speech, University of Brescia, September 4, 2018).

8. Nadia Bertolino and Ioanni Delsante, "Spatial Practices, Commoning and the Peer Production of Culture: Struggles and Aspirations of Grassroots Groups in Eastern Milan," Journal of Peer Production 11 (January 2018), http://peerproduction.net/issues/issue-11-city/peer-reviewed-papers/social-practices-commoning-peer-production-of-culture/.

9. James Corner, "The Agency of Mapping: Speculation, Critique and Invention," in *The Landscape Imagination: Collected Essays of James Corner* 1990–2010, ed. James Corner and Alison Bick Hirsch (New York: Princeton Architectural Press, 2014), 197–240.

10. Ibid., 197.

consequences."[11] This capacity to reformulate what already exists is a key point in Corner's narrative; he describes it as "more than just the physical attributes of terrain (topography, rivers, roads, buildings)," by encompassing "the various hidden forces that underlie the workings of a given place."[12] These may include historical events and local stories, economic and legislative conditions and even political interests. In light of the renewed interest in mapping towards design, "the map is first employed as a means of 'finding' and then 'founding' new projects."[13] Maps are "sites for the imaging and projecting of alternative worlds"; as such, the map "'gathers' and 'shows' things presently (and always) invisible."[14] Corner makes clear that, for him, "maps have very little to do with representation as depiction."[15] And the implications for architectural, urban design and planning are significant, as mapping is an "operational" tool that can enable critical understanding and reading, thanks to its "liberating efficacy" and its "exploratory" character, which can actualise "new territories and prospects out of pervasive yet dormant conditions."[16]

In the Italian context, several recent projects have produced markedly new cartographies. Mapping the Urban Voids[17] was a project delivered in 2012 by the not-for-profit organisation Temporiuso in partnership with the City Council of Milan and the Politecnico Milano. Partially set up in response to the social movement called Macao and its activities in that city,[18] the project maps - for the very first time - both private and public spaces that are vacant or underutilised. It maps not only availability but also the demand for space in town through an online form to allow wider participation. It goes beyond the traditional idea of function(s) in the planning process, looking forward to temporary uses and interventions that could take place under new local regulations approved later in 2012.

Along similar lines, a project to map underused or vacant buildings in Pavia has been underway since 2016, producing a detailed map that includes open spaces and buildings spread all around town.[19] It also provided an opportunity for public audiences to identify places by filling in forms and issued a tentative call for re-using spaces. However, mapping urban voids or vacant places in cities does not in itself provide a map of commoning actions or of urban commons.

---

11. Ibid., 197.
12. Ibid., 198.
13. Ibid., 208.
14. Ibid., 208.
15. Ibid., 209.
16. Ibid., 235.
17. See also http://www.temporiuso.org/?page_id=8, accessed January 22, 2020.
18. Ioanni Delsante and Nadia Bertolino, "Urban Spaces' Commoning and Its Impact on Planning: A Case Study of the Former Slaughterhouse Exchange Building in Milan," *Der Offentliche Sektor - The Public Sector* 43, no. 1 (June 9, 2017): 45–56.
19. https://ateliercitta.com/ex-vuoto-pavia/, accessed January 22, 2020.

A few initiatives or research projects have aimed specifically at mapping the commons in urban contexts. Some provide counter-maps as an alternative to those produced by political or institutional authorities. Counter-maps aim to unfold power relations that are hidden or not made obvious by institutional cartographies. Natural resources at risk, migrations, refugees, social or environmental inequalities and the like emerge through counter-mapping activities.[20] We hold that the agency of mapping urban commons may well represent an agency of counter-mapping for at least two reasons: commons (in the traditional meaning of land or land use) are not self-evident if they are not attached to a specific land ownership status, and planning tools and maps do not traditionally include commons at all, as they map functions attached to property rights.

Some relevant projects have aimed to map commons in urban and rural contexts: among those targeting cities, it is worth noting the ones undertaken in Athens, Istanbul and several cities in Brazil, among others.[21] Commons as interpreted in this paper are dynamic entities that cannot be constrained within only two or three spatial dimensions; rather, they embed more information in terms of urban history, governance and the like. Some research projects, like the one developed in Athens,[22] have explored the idea of having a geographic information system (GIS) based form of cartography that can overlay the physical map with other kinds of information such as the name of a space, the date it was established and the groups or community who have taken ownership; GIS tools allow users to embed multi-dimensional information on specific places. The common feature in these projects is having a fully and freely accessible resource to be shared among commoners and the wider community.

In examining the Italian context, we find a mismatch between the state of play of policymaking, which appears very advanced, and the current cartographies that are produced. The Bologna regulations and the Co-City project have produced traditional forms of cartographies that provide a useful tool to local communities and authorities, including city councils. However, they largely adopt an institutional perspective that does not fully reflect the complexity and dynamic conditions of what is happening on the ground. To expand this point, we articulate on two factors. The first is the idea that spaces are mapped only once they have been identified by the City Council or a Collaboration Act has been agreed to with local groups. The evidence for this is that other self-managed spaces in town (including

20. Hazen, Helen D., and Leila Harris. "Power of Maps: (Counter) Mapping for Conservation," *Acme International E-journal of Critical Geographies* 4, no. 1 (2006).

21. Pablo de Soto et al., "Mapping the Urban Commons: A Parametric and Audiovisual Method," *V!RUS* 11 (2015), http://www.nomads.usp.br/virus/virus11/?sec=7&item=1&lang=en; kollektif orangotango+, ed., This Is Not an Atlas (Bielefeld: transcript Verlag, 2018), https://notanatlas.org/book/, accessed January 28, 2020.

22. de Soto et al., "Mapping the Urban Commons."

social centres or XM24) do not appear in the same database.[23] Second, most of the spaces are publicly owned, so the map does not include the privately owned spaces—even if vacant—for which local groups or communities may have proposals or intentions to re-use.

Moreover, we observe that the current state of the art of commons-oriented mapping underrepresents places and spaces in terms of their spatial configuration and features. If this is a minor issue in rural contexts, we regard it as a major shortcoming when mapping agencies refer to dense contexts rich in urban history, culture and architectural heritage. Planning tools and cartographies also suffer from this, as they have traditionally focused on other aspects, sometimes on a larger scale. However, spatial configuration and features are an essential element of the agency of mapping urban commons, as they convey the relationship between people, uses and habits and specific places and buildings that are formal rather than informal. Buildings are characterised by typological and morphological features that have been studied from several perspectives. They have often been intentionally designed in relation to open spaces such as squares or in relation or opposition to other buildings in their immediate surroundings. As Aldo Rossi notes, we should look at the relationship between objects rather than at objects in themselves. Monuments, for Rossi, have a degree of permanence within the urban structure. Their significance is related to the richness of their relationships, whether tangible or intangible, rather than by their function. In fact, function may well change over time.[24]

On a different note, Herman Herzberger has underlined the importance of social relationships in connection to space and ultimately to architecture. His theories, along with his built works, show how space can better accommodate social uses and gatherings, formal or otherwise.[25] These contributions, and the gaps identified in current commons-oriented maps and cartographies, highlight the need to unfold social networks and agencies in relation to urban spaces and buildings in light of their physical features. Because buildings have a degree of permanence but serve varying uses and functions over time (Rossi) and spatial configurations can also inform or activate social relations (Hertzberger), urban commons should be described in relation to them.

---

23. Comune di Bologna, "Patti di Collaborazione," http://partecipa.comune.bologna.it/beni-comuni, accessed January 28, 2020.

24. Aldo Rossi, *The Architecture of the City,* trans. Joan Ockman and Diane Ghirardo (Cambridge, MA: The MIT Press, 1984).

25. Herman Hertzberger, *Lessons for Students in Architecture* (Rotterdam: 010 Publishers, 2005).

Mapping the urban commons in the current Italian context

Many Italian cities have recently approved regulations to manage and govern the urban commons, so it is understandable that more and more cartographies will soon be produced. However, the specifics of the Italian panorama and legislation should also be taken into consideration: Italian law, for example, does not recognise any form of collective property, which can be either public or private, but not collective.[26] In that respect, the action or project of mapping commons in an Italian urban context cannot follow traditional processes of mapping common land or resources, because commons would not be recognisable as such.

Even though a number of towns and cities have recently approved regulations, urban commons and commoning practices remain almost invisible to the planning process. Maps and cartographies produced by institutions and institutional agencies may not reflect either the current state of play or aspirations that could be expressed by grassroots groups or local communities. This invisibility is equally true of these maps' relationship to available places, including vacant or underused ones.

In such circumstances, the aim of mapping commons places or spaces, or places suitable for commoning actions, calls for an innovative methodology. In addition, because the transformations in most cities are ongoing or in the very early stages of development, the mapping process should not only document what is currently happening[27] but also showcase the networks and relationships through which new commons or commoning actions could be initiated.

Research questions

To what extent can the agency of mapping unfold the notion of commons in cities? To what extent do commoning actions and practices unfold in relation to places, spaces, buildings and their configuration towards the creation of commons? More specifically, in what form do the links between commoning agencies and spatial features emerge in urban contexts? Is it possible, through the agency of mapping, to explore the potential for common spaces? In the Italian context, in what sense does the agency of mapping urban commons differ from current institutionalised mapping processes? How does the hidden potential of mapping agencies emerge in relation to social practices, networks, spaces and places? Finally, what

26. However, there are residual forms of shared uses or rights called "civic uses" (*usi civici*). These are rooted in past legislation and survive in a very few places, usually rural or high mountain areas.

27. In "Mapping the Urban Commons," de Soto identifies an effective methodology to map current and ongoing commoning actions in a town and then applies it to Athens. This effort produced a critical cartography of that city.

role does the urban scale play in highlighting relationships and networks towards the production of counter-cartographies?

An experimental methodology

Recalling Corner and his proposed agency of mapping, the present paper aims to reveal a hidden potential rather than to describe a phenomenon that is already self-evident. This aspiration is explicitly distanced from the usual practices of mapping and planning. The paper draws on relevant literature and consider urban commons as essentially composed of three sets or layers: common pool resources, social groups and local communities and sets of rules or governance models.[28] Several authors couple the noun "commons" with the verb "commoning" to describe more clearly its relation to actions or spatial practices, and this paper builds on David Bollier's position on commons and commoning as necessarily linked and reciprocally nurturing.[29]

The present paper describes an innovative methodology that is tested in Pavia. The methodology consists of a sequence of mapping exercises based on secondary data (archival work, databases, etc.) and primary data collected through fieldwork, psycho-geographical walks and sensing the city, interactive and non-interactive observations including photographic surveys, visual analysis and informal interviews.

Maps collate data and visually compose them at urban scale. Each layer is critically analysed both on its own and in its relation to the others. The resulting maps represent and visualise relationships between various elements and reflect the aspirations and needs collated from a wide range of social groups and communities. As a result, while each map represents only a sample, its content nevertheless originates with active citizens and grassroots groups.

The methodology is designed to achieve a twofold aim: the first is to acknowledge the co-existence of current uses and commoning practices, current social groups and proactive communities and available or underused spaces in town. The second, which results from the first, is to enable the emergence of the links, networks and potential for current practices to occur in specific places or spaces, with spatial configuration given due attention. The paper ultimately seeks to reveal the hidden potential of urban commons in Pavia through the agency of mapping.

The methodology and the application to a case study in Pavia do have certain limitations. The methodology is experimental, so it will need some refinement over time. As primary data collection is derived from direct observation, some elements may be missed. Moreover, the amount of

28. Dellenbaugh et al., *Urban Commons*.

29. David Bollier, "The Commons, Short and Sweet," accessed January 22, 2020, http://www.bollier.org/commons-short-and-sweet.

fieldwork required is very extensive and potentially unlimited. Producing a detailed mapping of all groups and local communities is well beyond the scope of the proposed methodology. The choice of a case study allows for testing the methodology on the ground and helps identify significant case studies to be further developed via research-by-design and participatory processes.

A preliminary survey via psycho-geographical walks

Psycho-geographical walks seek to reveal urban areas and features from a new perspective.[30] By drifting around the city fabric, the observer uses this method to look at often familiar surroundings with fresh eyes and may allow unnoticed, unusual and unexpected details to be revealed. A number of psycho-geographical walks were undertaken in Pavia, following similar rules but going in different directions. As the historical city fabric is very regular and structured largely on the Roman grid (80 m x 80 m), very detailed instructions were provided at the beginning, such as changing direction at every corner (first right, second left, third right and so on).[31]

The walks revealed the richness of activities and uses in town, beyond the hierarchy given by open spaces like main squares and the key streets in the urban grid. Encounters happen in many places and reveal unusual or unexpected places, uses and users: The Third Age University, oratories and spaces for gathering, vacant or underused spaces, charities and not-for-profit and cultural associations are but some examples.

These urban encounters reveal agents, uses and practices that can all be further investigated. Beyond different types of casual encounters, more structured forms of observation and ethnography ensued, and it is necessary to better unfold what they do and how they relate to urban spaces, if in fact they do contribute towards the production of urban spaces. As noted above, it is important to acknowledge how secondary data such as current city council surveys and planning documents are not sufficient to reveal these [Fig. 1–4].

30. Guy Débord, "Theorie de La Dérive," Les Lèvres Nues 9 (November 1956), trans. Ken Knabb as "Theory of the Dérive," https://www.cddc.vt.edu/sionline/si/theory.html, accessed January 22, 2020.

31. These walks involved groups of three or four people and were carried out in collaboration with a group of students from the Architecture and Architectural Composition 1 course at the University of Pavia in the 2018–2019 academic year.

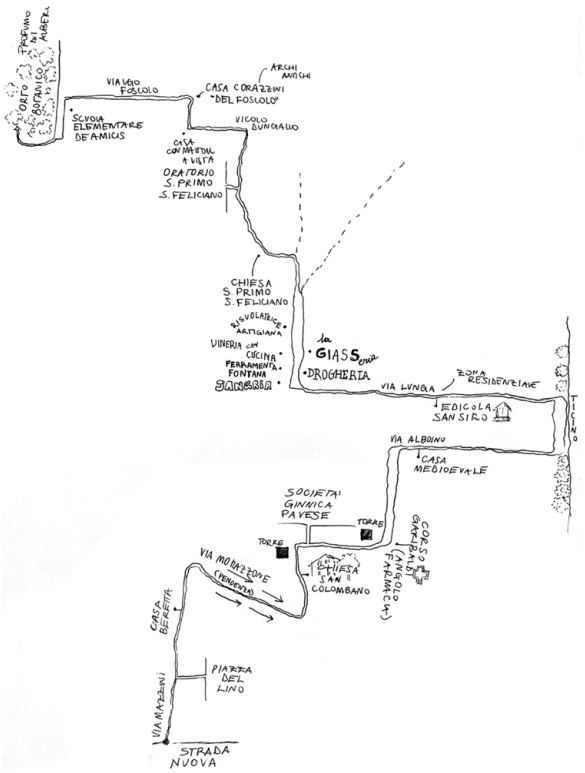


FIG. 1 Mental map produced during a psycho-geographical walk in Pavia (image by Anita Beluffi, Maddalena Duse, Linda Migliavacca, Michela Riboni).

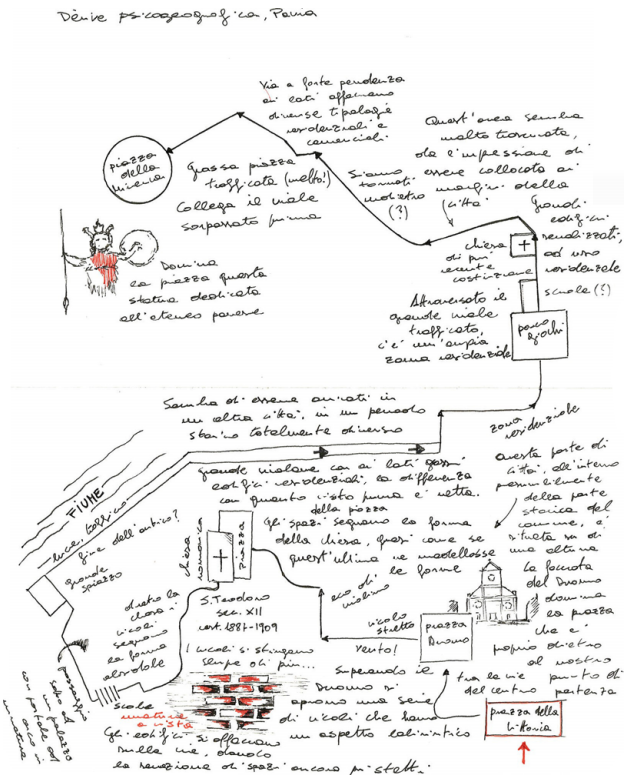


FIG. 2 Annotations from one of the dérive walks and drifting in town (image by Francesco Cavalloro, Alberto Pettineo).

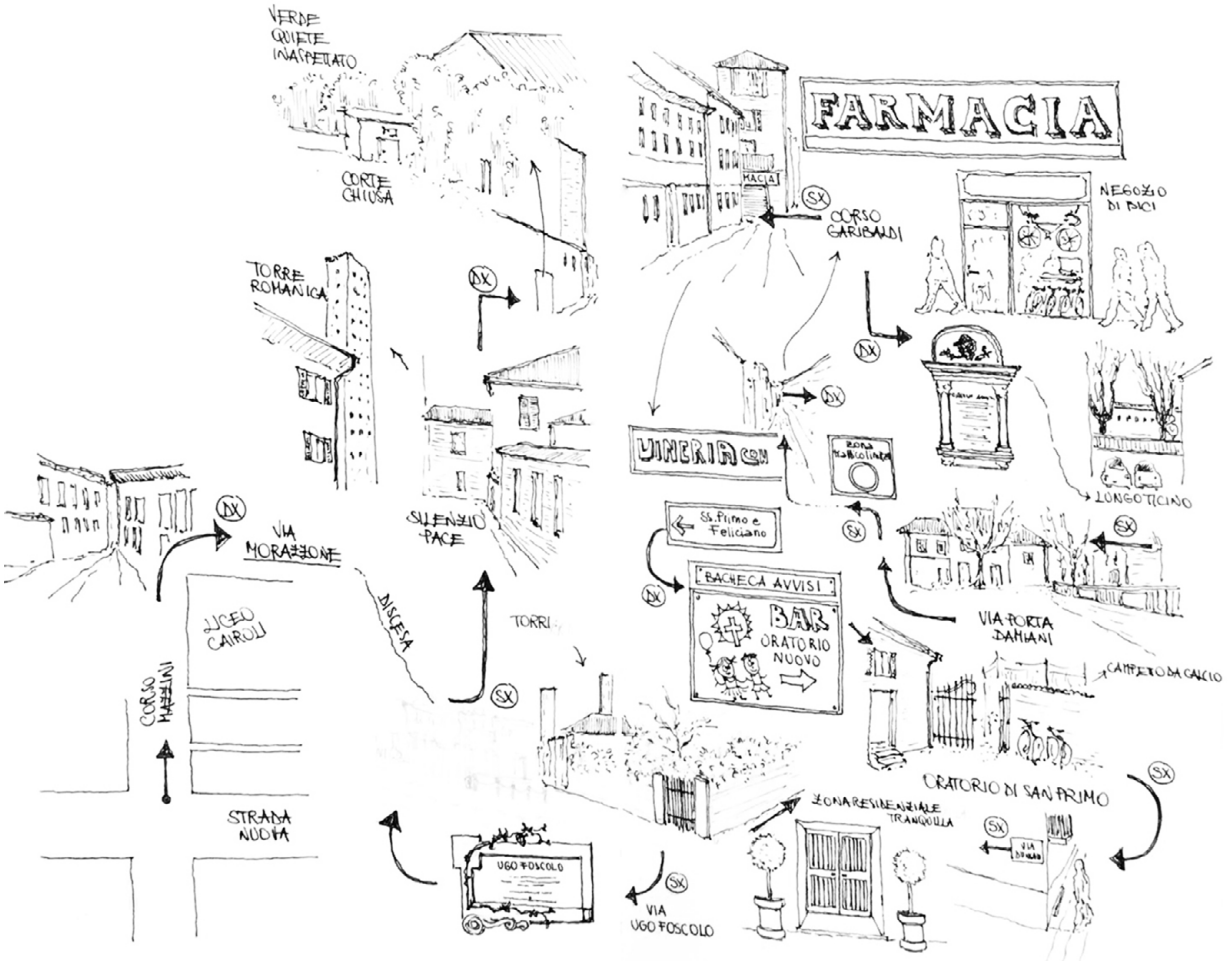


FIG. 3 Various sketches of buildings and urban spaces, as composed during a dérive walk (image by Anita Beluffi, Maddalena Duse, Linda Migliavacca, Michela Riboni).

FIG. 4 A picture taken during one of the city walks, in via Morazzone (image by Anita Beluffi, Maddalena Duse, Linda Migliavacca, Michela Riboni).

Mapping uses and habits beyond functions and zoning

By mapping uses and habits, the methodology aims to identify different forms of spatial uses and practices, including those that may be temporary or informal and thus independent of established functions and planning regulations. Temporary uses and appropriation of spaces are closely linked to the history and evolution of towns and cities. Market spaces, for example, often represent a vital element of urban life and structures. They may be formally defined as buildings but still only temporarily occupy urban spaces like streets with porches and squares. Relevant precedents such as the Campo dei Fiori in Rome, for example, still host trading activities in a weekly open-air market, a tradition that dates to medieval times.

Festivals are another well-established form of temporary appropriation of urban spaces that can reveal hidden meanings. The Palio di Siena and the Semana Santa in Sevilla, for example, display a completely different set of activities that may include gatherings and processions that appropriate urban spaces in an extraordinary way. If these are well-known examples of how traditions and historical habits can survive even through the present day, there are several other temporary uses or forms of appropriation in contemporary cities that deserve more careful observation and investigation.

The mapping exercise is based on fieldwork activity that was either preceded or followed by secondary data collection, including archival work. When an activity or use was identified, then the extent to which it is rooted in urban history became relevant (including exceptional circumstances such as periods of war or post-disaster recovery). Several spaces in Pavia were mapped as part of this exercise. It is possible to identify two sub-categories of uses and habits: the first refers to spaces that are temporarily used in a more or less formalised way. These include weekly or biweekly markets that usually take place in well-known squares (Piazza Petrarca) or other public spaces. They also include annual events such as fairs (Autunno Pavese) and other leisure or cultural events in town (Notte Bianca, Festival della Fotografia, Giocanda Festival and so on).

A second sub-layer involves temporary but informal activities. These are not usually rigidly defined and can have various levels of permission from local authorities. Relevant examples are some university spaces, certain public spaces in town, the riverfront (Lungo Ticino) and other informal occupations. For example, university courtyards are used in several ways: inner courtyards become spaces where to sit, read, reflect or simply spend some time observing people's comings and goings.

Viale Matteotti is a boulevard with a wide pedestrian area running down the middle. Located quite centrally, it connects several public spaces such as the gardens facing the Castello Visconteo, the Piazza Petrarca and the public spaces closer to the train station. On top of trade activities, informal gatherings take place in the pedestrian spaces. Specific ethnic groups populate them, especially those from Eastern Europe. Other types of informal gatherings and meeting places are recognisable in Pavia, such as the stairs facing the cathedral in Piazza Duomo, which are used by younger generations to meet up from early in the evening until very late at night. The riverfront is another space that is widely used by several different user groups. Especially where it is wider and less constrained by the old city walls, it hosts a range of different activities running from sport uses to leisure activities including self-organised picnics and barbecues.

This mapping exercise has revealed a richness of activities that planning tools do not capture and that are not usually mapped city-wide. Strikingly, most of them are strongly distinguished by user or age group. Further investigation also showed how some groups tend to identify one or more spaces in Pavia that best suit their needs **[Fig. 5]**.

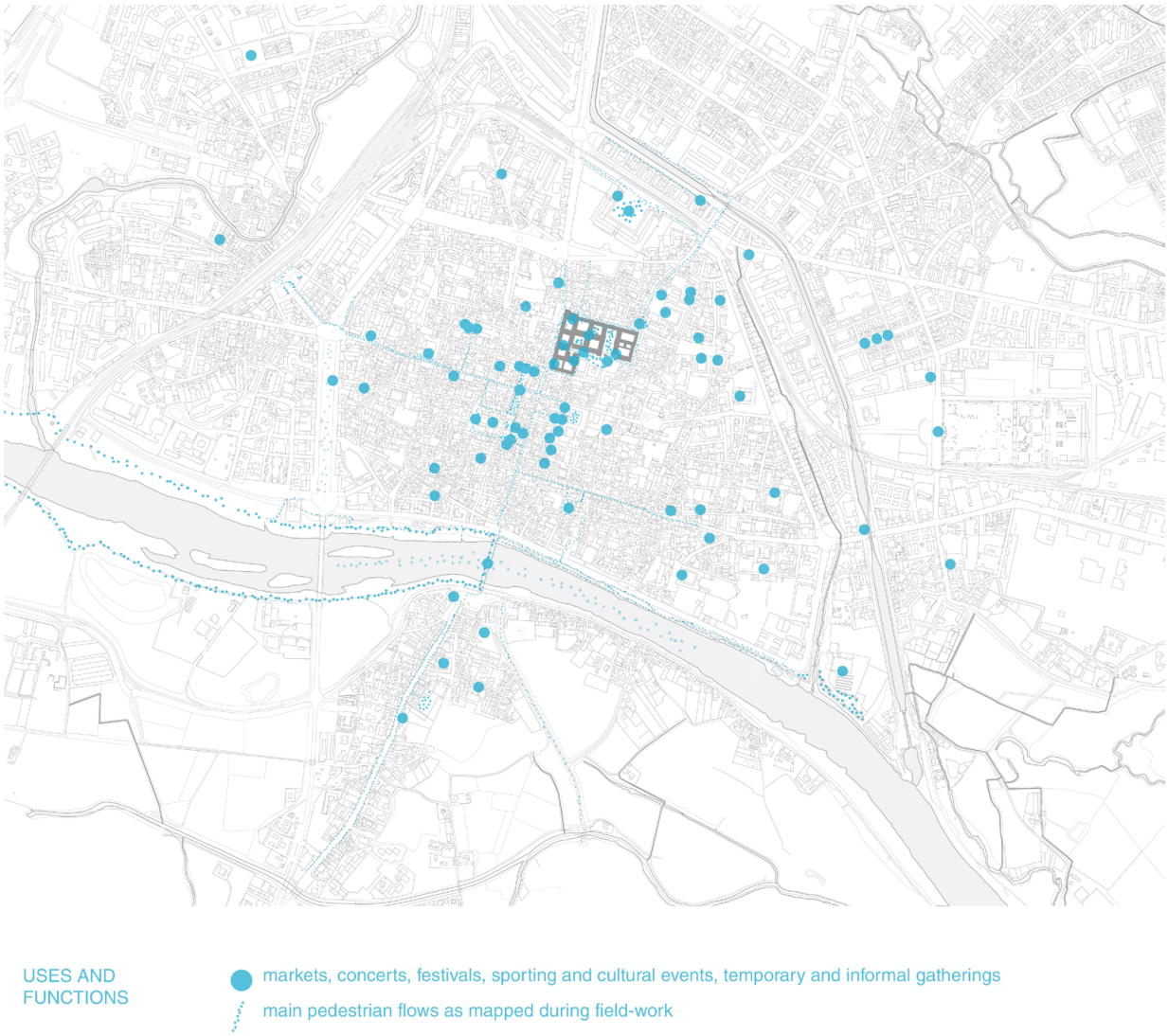


FIG. 5 Mapping uses and habits in Pavia, beyond functions and zoning (drawing by authors).

Mapping local networks, social groups and communities

The focus now shifts towards social groups and local and digital networks and communities that play a role in appropriating or producing space in Pavia. While the psycho-geographic walks and the mapping exercise provided a solid foundation from which to proceed, further investigation and data collection were needed, and secondary data were available to produce a preliminary list of actors and stakeholders. The findings showed a richness in terms of presence and variety of groups or networks in the town. They vary greatly in terms of history, governance and aims, but it was possible to identify at least three typologies.

The first is composed of local communities, not-for-profit organisations or groups that link their actions to very specific places such as a neighbourhood, the river, the Naviglio Grande canal or a specific place or building. One example is the association linked with the Borgo Ticino neighbourhood. The second typology is composed of groups, communities or network that self-identify in relation to a goal. These can be linked to local or global challenges (the natural environment, poverty, immigration, etc.) and can have a variety of focuses including social and environmental dimensions; the "Friends of the River Ticino" (Amici del Ticino) association is one example. The third typology self-identifies by the idea of doing or making something together: music, other cultural endeavours, sport and so on. There are many of these groups, some of which were established on the internet rather than in a physical space. The Giocanda Festival (2019) serves as an example, as do the bicycle repair sessions held in the Piazza delle Tre Torri.

The mapping exercise provided the opportunity to situate various agencies in the cartography, providing immediate visual evidence of where they operate in town. To do so, the mapping identifies not only the physical basis of each (and any intended to be permanent) but also the relationships with several other places in Pavia, where they take action or undertake activities which may be temporary or a depiction of what is going on at a given moment and thus evolve over time. Moreover, the mapping also provides an idea of density in terms of where they are based and the sites where they operate. It is interesting to note that the town centre, with its dense urban structure, does not reflect the distribution or density of these groups; on the contrary, they are more present and proactive beyond the edges of Pavia's historical centre.

An additional mapping drew on the first effort to focus on urban spaces and buildings, with the aim of analysing type and morphology and using tools such as maps, sketches, photographs of the elements or parts of cities taken into consideration. The specific aim is to understand how the form and the typology of a building or its level of openness and closure define its features according to its perception, use and potential for common appropriation [Fig. 6].

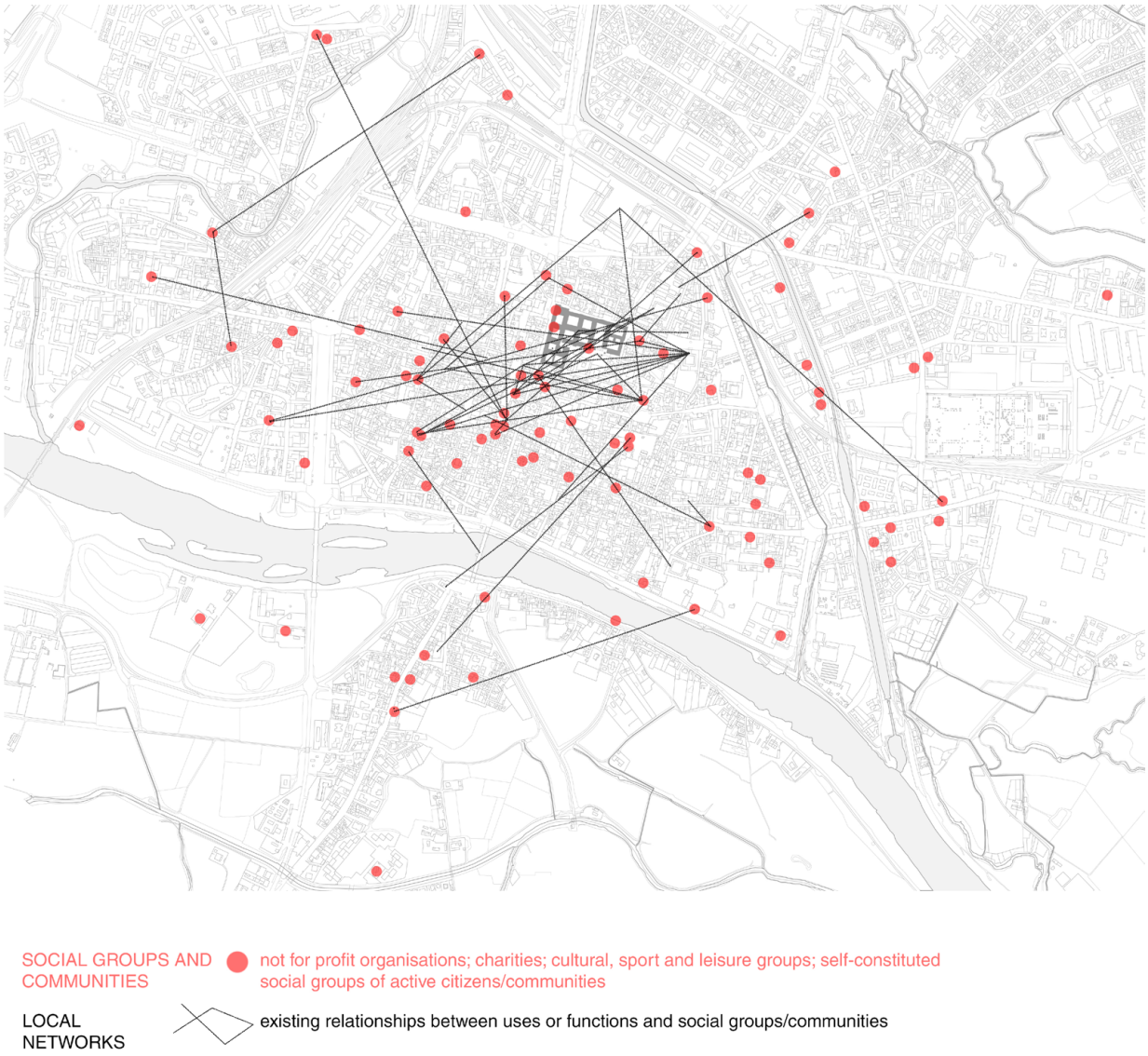


FIG. 6 Mapping social and grassroots groups, local networks and communities in Pavia (drawing by authors).

Mapping spaces and buildings, including vacant or underused buildings

First, the reflection is based on the concept of the cityscape's apparent clarity or "legibility," which is defined by Kevin Lynch as the ease with which its parts can be recognised and organised into a coherent pattern.[32] This term is later recalled by Leon Krier in terms of a "clear legibility of the geometric characteristics and aesthetic qualities that allow the use of an outer space as a properly urban space"[33] that represents a useful step in understanding the degree of consciousness and acknowledgement of a specific given place. Legibility and acknowledgement translate into spatial qualities that, regardless of public or private ownership, invite accessibility and relationship.

32. Kevin Lynch, *The Image of the City* (Cambridge, MA: MIT Press, 1960).

33. Rob Krier, *Stadtraum Urban Space* (Solingen, Germany: Umbau-Verlag, 2005), 24.

A different aspect to be considered is how urban spaces' typo-morphological features like shape, profile, scale or height specifically affect the pattern-network of relationships and hierarchies which—combined with the cultural awareness of groups or communities—let people perceive a place in the city as a reference and make it recognisable. Moreover, a critical association is sought between the characteristics of invariance inherent in the consolidated concept of "type"[34]—court, hall, line, block and so on—and the variables linked to the use or occupation of space, whether temporary or permanent, regulated or spontaneous. This may be connected, for example, to seasons or temporary events and to questions of identity and place, and provides a map in constant flux, where the fixed scene of the cityscape is constantly renewed and revised by collective appropriation.

For example, the complex of the Central University of Pavia is readable as a defined system within the medieval urban structure, despite the compactness of the streetfronts. However, thanks to the different access points to its courts, it is actually open and permeable, becoming a natural continuation of the surrounding network of streets and squares and encouraging its use for moving, meeting, standing and gathering. Another example is the system of public spaces that revolve around the buildings of the Duomo and the Palazzo del Broletto that produces different uses and appropriations of urban space. These are somehow instigated or shaped by architectural thresholds like arcaded galleries and access stairways that, at different points in the day or year, assume different degrees of publicity or accessibility for commoning practices.

These cases—which were among those analysed within the city of Pavia—can serve as models to understand the dynamics of legibility and appropriation of public spaces for communal uses or commoning practices; they proved useful for capturing the links between physical spaces and their perception—including in terms of value—by different social groups and communities [Fig. 7].

We add to the analyses above a mapping phase to find vacant or underused buildings and urban spaces that represent potential resources for the city. This kind of mapping is not strictly related to a particular typo-morphological feature but to current uses (or lack thereof). It is also, though not exclusively, based on existing secondary data such as the Ex-Vuoti database.[35] It aims to recognise buildings and open spaces (both private and public, as rightly pointed out by Temporiuso in Milan),[36] which are even partially vacant, abandoned or underused [Fig. 8].

---

34. Carlos Martí Arís, *Le variazioni dell'identità. Il tipo di architettura*, ed. M. De Benedetti, trans. E. Laurenzi (Novara: CittàStudi, 2012).

35. Atelier Città has been conducting the Ex-Vuoti project in Pavia since 2016. Atelier Città, "Ex-Vuoto Pavia," accessed January 22, 2020, https://ateliercitta.com/ex-vuoto-pavia/.

36. See http://www.temporiuso.org/?page_id=8, accessed January 22, 2020.

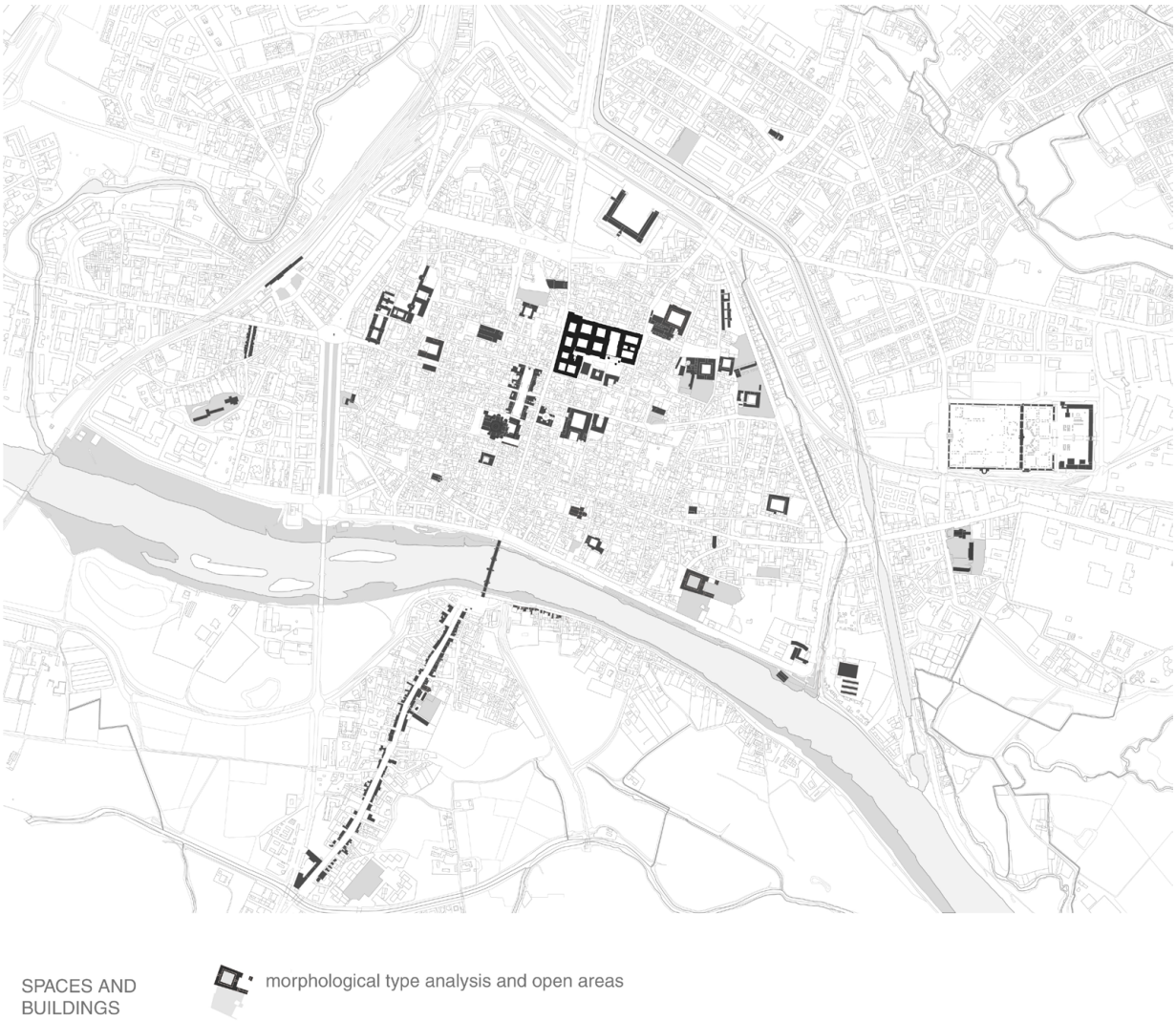


FIG. 7 Mapping of significant spaces and buildings in Pavia through their typo-morphological Features (drawing by authors).

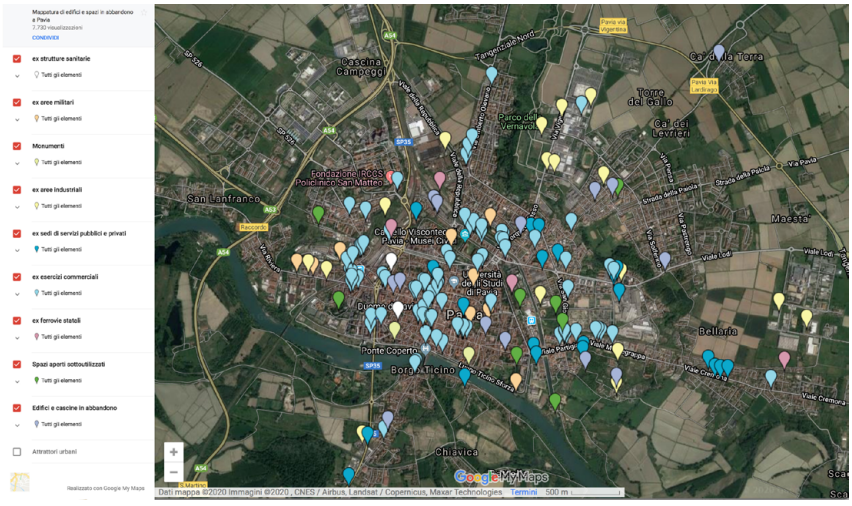


FIG. 8 Vacant spaces in Pavia from the Ex-Vuoti database undertaken in Pavia since 2016, https://ateliercitta.com/ex-vuoto-pavia/#mappa-dei-vuoti, accessed January 20, 2020.

Towards a counter-cartography of Pavia

The phases of data collection and mapping described above were followed by a critical re-elaboration of information, which we call critical mapping,[37] that moves towards the creation of a counter-cartography of Pavia that is based on critically analysing and finding relationships between the various layers of information that are overlaid on a physical map of the city. This kind of mapping exercise comes out of several iterations and refinements of the analysis process. The findings consist of tangible and intangible relations between uses, communities and spaces, all of which become evident through the mapping. They may be already in place or simply offer the potential for future scenarios [Fig. 9–11].

The mapping aims to show the multiple relationships between social groups or communities, uses and places; the places may have a relation of proximity to the social groups or fit needs or aspirations that they have expressed or are self-evident from the groups' agendas. These spaces can thus accommodate or host actions of commoning, through which they have the potential to become urban commons. They are highlighted in light of the co-presence of space that is interpreted as a resource by a group or a community that has a degree of self-regulation in delivering their agenda in the form of rules or regulations. It is important to note how this cartography reproduces an image of the city that is completely independent from the either public or private ownership and from fixed functional uses. As such, the map provides a picture of what the city could be rather than what it is.

This cartography shows that these spaces are as present in the historic centre as in the more peripheral areas and involve a wide variety of places in terms of accessibility, legibility, land ownership and maintenance. These include commercial arcades like the Galleria Manzoni, vacant shops and underused spaces in residential neighbourhoods, as in the Città Giardino, some public buildings including a university complex and surrounding spaces (the Botanical Garden complex) and other well-known private buildings like the nineteenth-century Cupola Arnaboldi. They also include urban voids and underused spaces like a former fuel distribution station, the Naviglio Pavese banks and the residual spaces around them, the Ticino riverbanks and underused infrastructures and buildings along them, such as the former Idroscalo.

---

37. The term is sometimes used as synonymous with radical cartography or experimental geography: "Critical mapping acknowledges that maps are not neutral conveyors of fact; more importantly, it embraces the idea that maps have agency" Kian Goh, "Critical Mapping," MVMTBLDG (blog), February 20, 2011, https://mvmtbldg.wordpress.com/2011/02/20/critical-mapping/. Critical cartography is defined as "a one-two punch of new mapping practices and theoretical critique. Critical cartography challenges academic cartography by linking geographic knowledge with power, and thus is political"; Jeremy W. Crampton and John Krygier, "An Introduction to Critical Cartography," *ACME: An International Journal for Critical Geographies* 4, no. 1 (2005): 11.

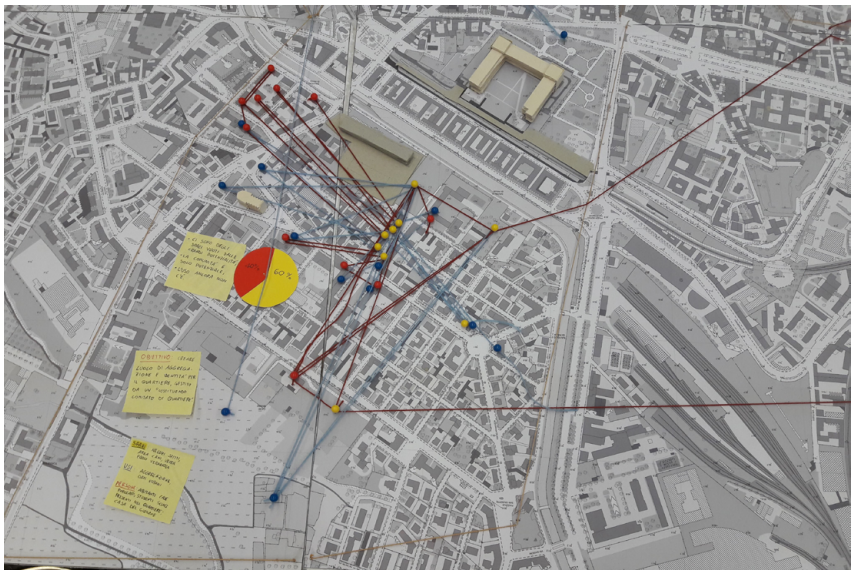


FIG. 9 Picture of the mapping performed on the physical model of Pavia, including annotations on Città Giardino neighbourhood (Image by the authors).

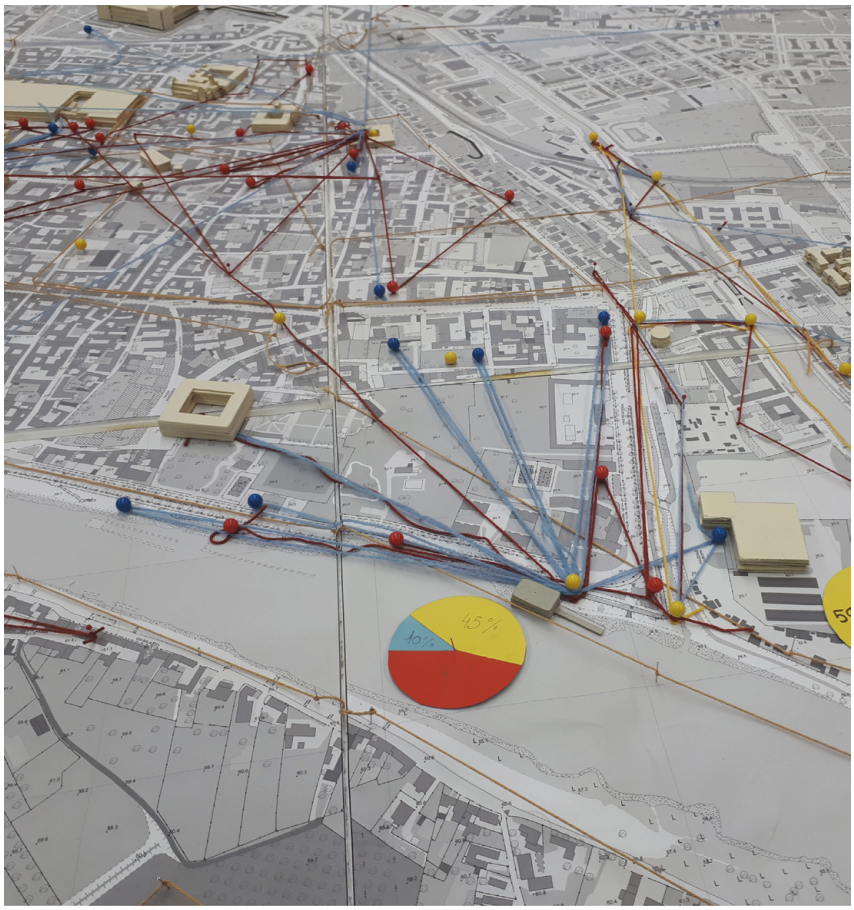


FIG. 10 Picture of the mapping performed on the physical model of Pavia. Detail from the south-east part of the town centre, between the Collegio Borromeo and the Idroscalo (image by the authors).

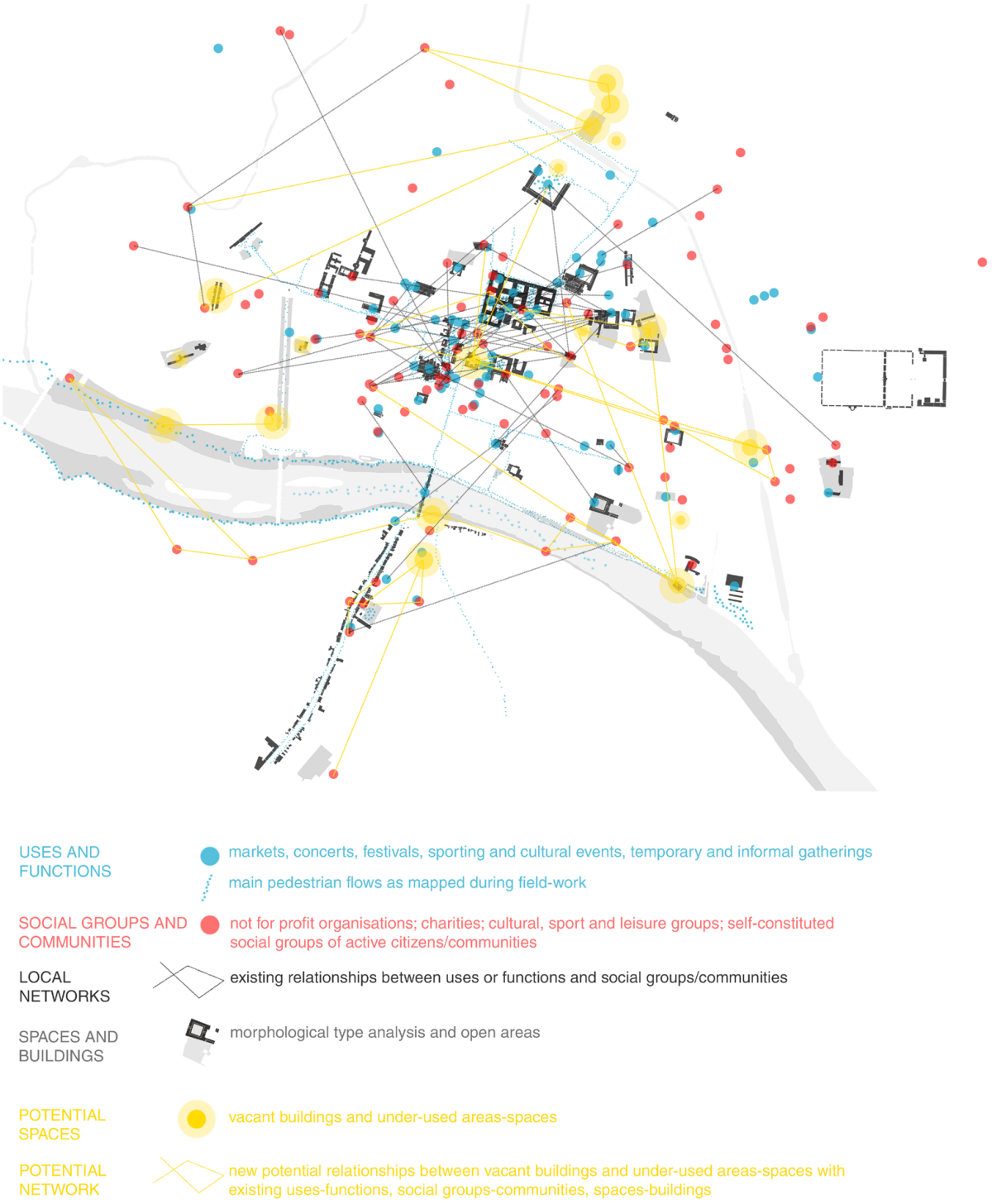


FIG. 11 Iterative mapping and overlapping of several layers reveals links and relationships between the various categories (drawing by authors).

Two cases unfolded: the central university and the Cupola Arnaboldi

The University of Pavia's central building is organised around a series of open-air courtyards with porches, most of which are enclosed on all four sides, although others are open towards the city and its public space. Because the university is fully integrated within the urban structure, its spaces have a number of crossings. The survey showed how spaces are strongly polarised between those dedicated to urban flows and crossings and those dedicated to gatherings and social activities. The findings also revealed how these spaces are used by a wider community of users, well beyond university students. The uses themselves also varied: informal ones like a bicycle repair workshop, group discussions, free or leisure time and temporary homeless shelters complement more institutional uses like lectures, study rooms and the like [Fig. 12–16].

By acknowledging both formal and informal uses, the paper tries to situate them in relation to the physical configuration of the spaces in which those uses occur. A conventional figure-ground and typological analysis supports this approach and recalls the idea of how architecture can encourage social networks. Architectural spaces become available for multiple, open-ended uses. Spaces are related to uses rather than to the fixed functions on which urban planning regulations are so focused. Spaces obtain meanings in relation to specific uses and groups or communities who take ownership, so the meaning we attribute to them is relative rather than absolute.

While a more in-depth analysis would be necessary to reveal the full potential of the University of Pavia's spaces, it is clear how various groups use them for informal, temporary activities. It is also worth noting how architectural elements and devices such as courtyards, thresholds and benches come into play in hosting commoning practices. They become third spaces in the sense that these informal uses take place neither due to nor in spite of but beyond the facts of ownership.

The Cupola Arnaboldi case study involves a currently underused nineteenth-century building. The gallery is covered by an iron and glass dome - inspired by remarkable examples such as the Galleria Vittorio Emanuele in Milan - and was built in 1872, intended by the mayor of the day to serve as a meeting place where farmers and breeders could negotiate exchanges and prices for goods. The architectural value of the building, the role of public utility for which it was conceived and built, its position in the heart of the city and its character of openness and porosity with respect to the surrounding urban context are just some of the aspects that reveal its commoning potential.

Today, the space is mainly used as a simple walkway. However, it occasionally hosts temporary events like the Ticino Festival or a farmers market mounted by the Italian Farmers Confederation.

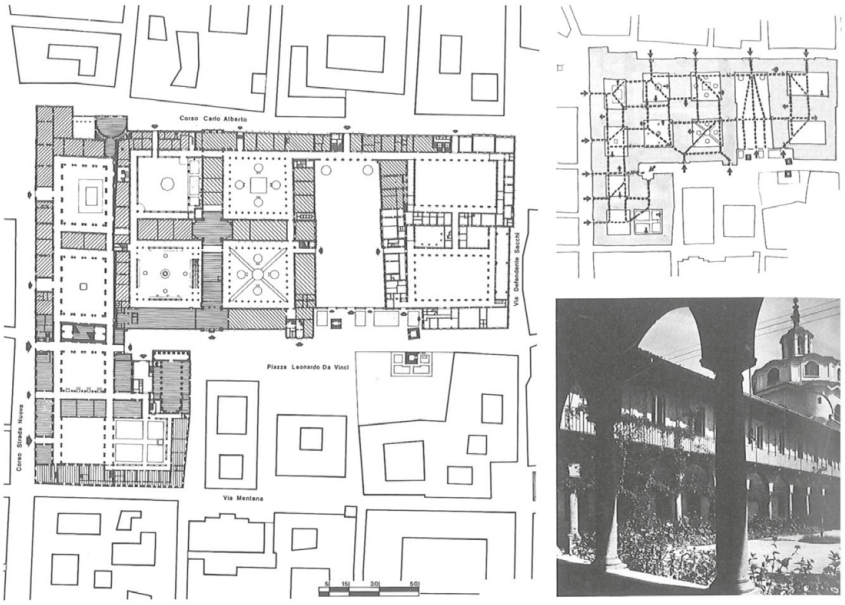


FIG. 12 Map of the university and its courtyards in relation to the city of Pavia. From Giancarlo de Carlo, "Pavie: la ville et le modèle multipolaire,"*L'Architecture d'Aujourd'hui* 183 (January–February, 1976): 52–62..

FIG. 15 University of Pavia central building: walking and seating along one of the covered porches (image by Anita Beluffi, Maddalena Duse, Linda Migliavacca, Michela Riboni).

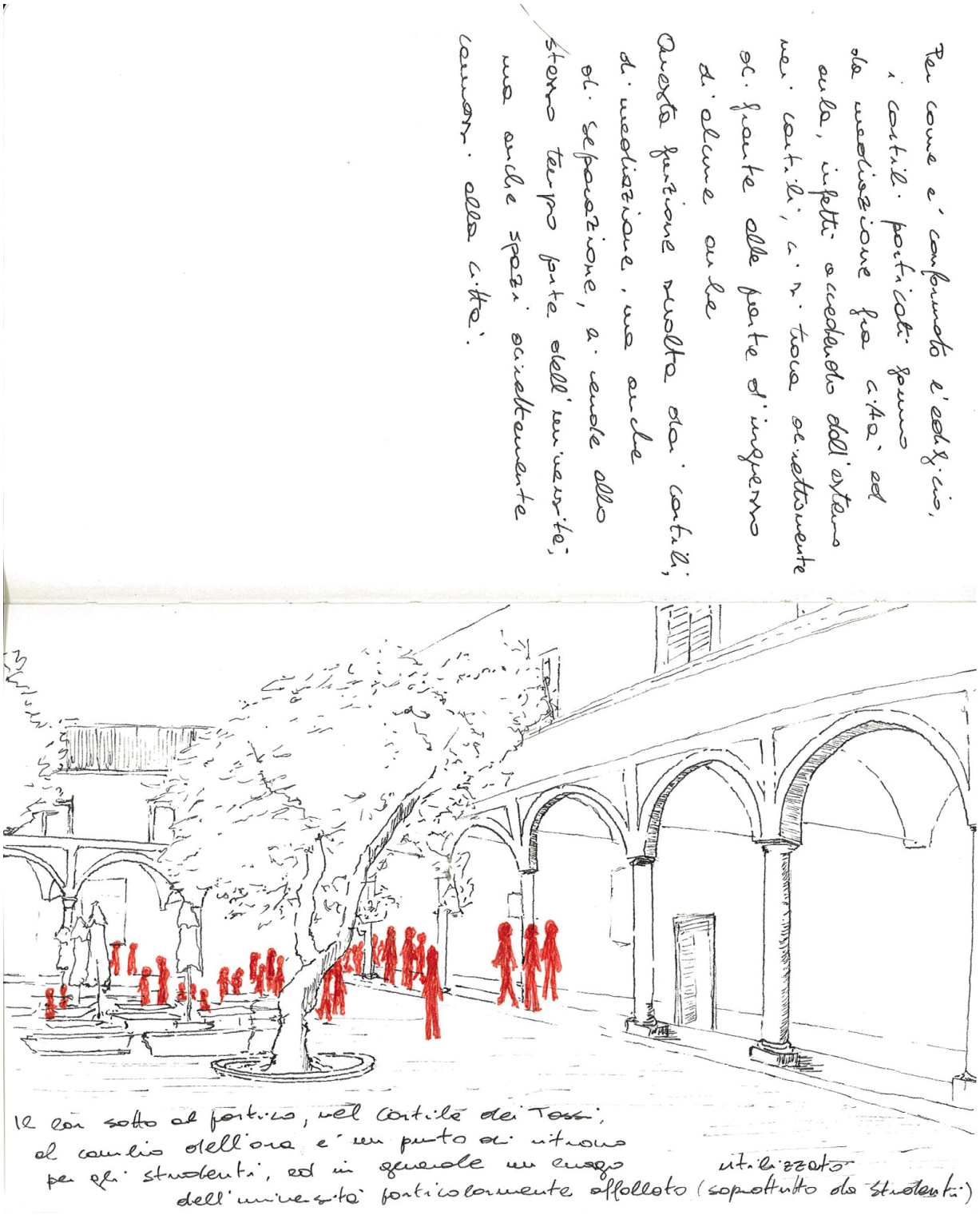


FIG. 16 Sketches derived from non-interactive observation of the University courtyards (image by Francesco Cavalloro, Alberto Pettineo).

FIG. 13 Piazza Leonardo da Vinci, bike repair session and temporary uses during the Giocanda Festival (photo no. 13 by Ciclofficina Pavia, photo no.14 by Giocanda Festival).

FIG. 14 Piazza Leonardo da Vinci, bike repair session and temporary uses during the Giocanda Festival (photo no. 13 by Ciclofficina Pavia, photo no.14 by Giocanda Festival).

More interestingly, it occasionally hosts informal gatherings, as with the Festival Giocanda. The City Council did not support the 2019 edition and proposed moving it from the city centre streets to the institutional setting of the Visconteo Castle courtyard. However, the organisers preferred to maintain the spontaneous and informal nature of the festival, which is based on street games and gatherings. The Cupola became one of the main places identified by festival participants, who gathered and performed spontaneously in the arcade [Fig. 17–20].

FIG. 17 Picture of the Cupola Arnaboldi used as a temporary market. From Roberto Leydi, Bruno Pianta, Angelo Stella, *Pavia e il suo territorio* (Milano: Silvana Editoriale, 1990): 212

FIG. 18 Cupola Arnaboldi, an image from the national festival of grape, 1925 – 1945. Musei Civici di Pavia, fondo Fondo Guglielmo Chiolini.

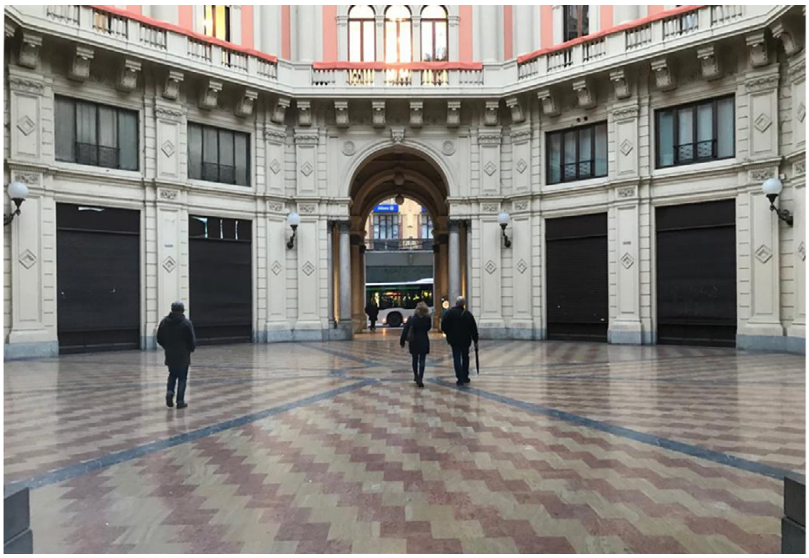


FIG. 19-20 Current picture of the Cupola Arnaboldi, with most of the shops and spaces left vacant. However, temporary uses and informal events still take place occasioanlly, as it has been during the Giocanda Festival in 2019, which was a not formally authorised by the City Council (image 19 by the authors, image 20 by Giocanda Festival).

Concluding remarks

The proposed methodology—a dynamic and iterative mapping process that reveals several different layers—aims to acknowledge spaces for their current and potential commoning practices and moved towards acknowledging an urban commons. The outcome took the form of a critical cartography that could support the development of bottom-up, economically viable and environmentally sustainable urban actions. A participatory event open to experts and the general public was organised to showcase and discuss preliminary findings,[38] following which the methodology was refined and adapted to fit a wider urban context.

By working towards the identification of a network of both tangible and intangible relationships, we present an open-ended tool that accommodates collaborative work and peer-to-peer processes. In fact, participation and bottom-up processes can be easily integrated. Moreover, the methodology is strongly interdisciplinary and can thus accommodate professionals from any number of disciplines who are seeking to find common ground.

The emerging counter-cartography of Pavia ultimately identifies places, spaces and buildings through matches with uses and social groups or communities. It ultimately aims to provide a foundation for creating future scenarios. In that respect, various hypotheses were then preliminarily explored in the form of design-oriented actions or proposals[39] that drew on relevant precedents, the regulation of urban commons in Pavia approved in June 2016 and participatory tools like crowdfunding or the participatory budget (bilancio partecipativo).[40]

The proposed mapping methodology is still in an experimental phase, but it has already proven to be relevant beyond the academic purposes of this study. In fact, the findings may prove to be useful to support public administrations in driving participatory and community-based projects based on more accurate matches between spatial features and socio-economic drivers. Moreover, the mapping shows the presence of various stakeholders that have multiple and complex links with one another. The mapping

---

38. Preliminary findings were showcased during a participatory event included in the 2019 Sustainability Festival (Festival della Sostenibilità) that took place on May 17, 2019 and was hosted by the Department of Civil Engineering and Architecture of the University of Pavia.

39. Developed within the course Pavia: Urban Commons and Architectural Design (academic year 2018–2019). Professors: Dr. Ioanni del Sante, Dr. Serena Orlandi; Tutor: Andrea Vittorio Sellaro; Students: Taha Alorabi, Francesca Antoniacci, Anna Maria Apetrei, Giulia Bellani, Riccardo Bellati, Anita Beluffi, Leonardo Carannante, Francesca Carrara, Francesco Cavalloro, Melanie Cedeno, Karla Cruz, Chiara Cutarelli, Beatrice Dell'Orco, Maddalena Duse, Gianluca Forges, Francesca Fracazzini, Siria Franchini, Giovanni Giunta, Intissar Guizani, Carmine Isi, Alex Kanev, Osmancan Korkmak, Linda Migliavacca, Alberto Pettineo, Lorenzo Quaglini, Michela Riboni.

40. A practice related to the effective participation of the population in taking decisions in some areas of collective spending. See relevant experiences in Porto Alegre (Brazil), which is cited in Ioanni Delsante and Luciana Miron (2017). Citizens usually identify several requests that the city council undertakes to implement according to type and spending limits. It is usually an ongoing process on an annual basis that involves co-planning and financing projects that are selected by public vote.

may instigate additional research questions, such as how to manage potential conflicts among different actors or issues of replicability and the scalability of individual experiences.

Ioanni Delsante is currently Reader in Urban Design at the University of Huddersfield and Research Fellow in Architectural and Urban Design at the University of Pavia. Presently the Course Leader for MA Urban Design at the University of Huddersfield, he has taught at the University of Pavia, Politecnico di Milano and Tongji University of Shanghai. He is a member of the PhD programme Advisory Committee in Arquitectura at the Escuela Tècnica Superior de Arquitectura, University of Sevilla and Chair of the Urban Futures and Design Lab at the University of Huddersfield. A Co-Editor of the Journal of Architecture, he regularly acts as a peer reviewer for a number of journals and research councils. He was previously a member of the British Council Science Research Reviewer Panel (2015–2017). His current research interests deal with forms of alter-urbanisation and alternative urban transformations through the lens of the commons.

Serena Orlandi, University of Bologna, PhD, Adjunct Professor and Teaching Fellow in the Department of Architecture at the University of Bologna and University of Pavia. In April 2018, she presented his doctoral thesis in Architectural and Urban Composition, developed in cooperation between the University of Bologna and the Universidad Nacional de Colombia—Bogotá, on the relationship between modern architecture in Colombian and European contexts. Her research activity is documented by participation in workshops on the urban space project, conferences and scientific publications. Her work in the academic field is accompanied by professional activity as freelance architect.

References

Atelier Città. "Ex-Vuoto Pavia." Accessed January 22, 2020, https://ateliercitta.com/ex-vuoto-pavia/.

Bertolino, Nadia, and Ioanni Delsante. "Spatial Practices, Commoning and the Peer Production of Culture: Struggles and Aspirations of Grassroots Groups in Eastern Milan." *Journal of Peer Production* 11 (January 2018). Accessed January 28, 2020. http://peerproduction.net/issues/issue-11-city/peer-reviewed-papers/social-practices-commoning-peer-production-of-culture/.

Bollier, David. "The Commons, Short and Sweet." Accessed January 22, 2020. http://www.bollier.org/commons-short-and-sweet.

Corner, James. "The Agency of Mapping: Speculation, Critique and Invention." In *The Landscape Imagination: Collected Essays of James Corner* 1990–2010, edited by James Corner and Alison Bick Hirsch, 197–240. New York: Princeton Architectural Press, 2014.

Crampton, Jeremy W, and John Krygier. "An Introduction to Critical Cartography." *ACME: An International Journal for Critical Geographies 4*, no. 1 (2005): 11--33.

De Carlo, Giancarlo. "Pavie: la ville et le modèle multipolaire." *L'Architecture d'Aujourd'hui*. n. 183 (January–February, 1976): 52-62.

de Soto, Pablo, Daphne Dragona, Demitri Delinikols, Asilhan Senel, and José Pérez de Lama. "Mapping the Urban Commons: A Parametrical and Audiovisual Method." *V!RUS* 11 (2015). Accessed January 28, 2020. http://www.nomads.usp.br/virus/virus11/?sec=7&item=1&lang=en.

Débord, Guy. "Theorie de La Dérive." Les Lèvres Nues 9 (November 1956). Translated by Ken Knabb as "Theory of the Dérive." Accessed January 28, 2020. https://www.cddc.vt.edu/sionline/si/theory.html.

Dellenbaugh, Mary, Markus Kip, Majken Bieniok, Agnes Müller, and Martin Schwegmann, eds. *Urban Commons: Moving Beyond State and Market*. Berlin: Birkhäuser, 2015. https://doi.org/10.1515/9783038214953.

Delsante, Ioanni, and Nadia Bertolino. "Urban Spaces' Commoning and Its Impact on Planning: A Case Study of the Former Slaughterhouse Exchange Building in Milan." *Der Offentliche Sektor - The Public Sector* 43, no. 1 (June 9, 2017): 45–56.

Delsante, Ioanni and Luciana I.G. Miron. "Urban growth, regeneration and social inclusion in Porto Alegre: The City Entrance Integrated Programme case study". *UPLanD - Journal of Urban Planning, Landscape & environmental Design*. 2017, 2(2). 239-254.

di Genio, Giuseppe, Eugenio Benevento, Elena Conte. *Beni comuni e usi civici*. Limena: Edizioni libreriauniversitaria.it, 2016.

Foster, Sheila, and Christian Iaione. "The City as a Commons." *Yale Law and Policy Review* 34, no. 2 (2016): 281–349. https://dx.doi.org/10.2139/ssrn.2653084.

Goh, Kian. "Critical Mapping." *MVMTBLDG* (blog), February 20, 2011. Accessed January 28, 2020. https://mvmtbldg.wordpress.com/2011/02/20/critical-mapping/.

Hazen, Helen D., and Leila Harris. "Power of Maps: (Counter) Mapping for Conservation," Acme International E-journal of Critical Geographies 4, no. 1 (2006). http://dx.doi.org/10.14288/1.0357973.

Hertzberger, Herman. *Lessons for Students in Architecture*. Rotterdam: 010 Publishers, 2005.

kollektif orangotango+, ed. *This Is Not an Atlas*. Bielefeld: Transcript Verlag, 2018. Accessed January 28, 2020. https://notanatlas.org/book/.

Krier, Rob. *Stadtraum Urban Space*. Solingen, Germany: Umbau-Verlag, 2005.

Lefebvre, Henri. *Critique of Everyday Life*. London: Verso, 1991.

Leydi, Roberto, Bruno Pianta, Angelo Stella. *Pavia e il suo territorio*. Milano: Silvana Editoriale, 1990.

Lynch, Kevin. *The Image of the City*. Cambridge, MA: MIT Press, 1960.

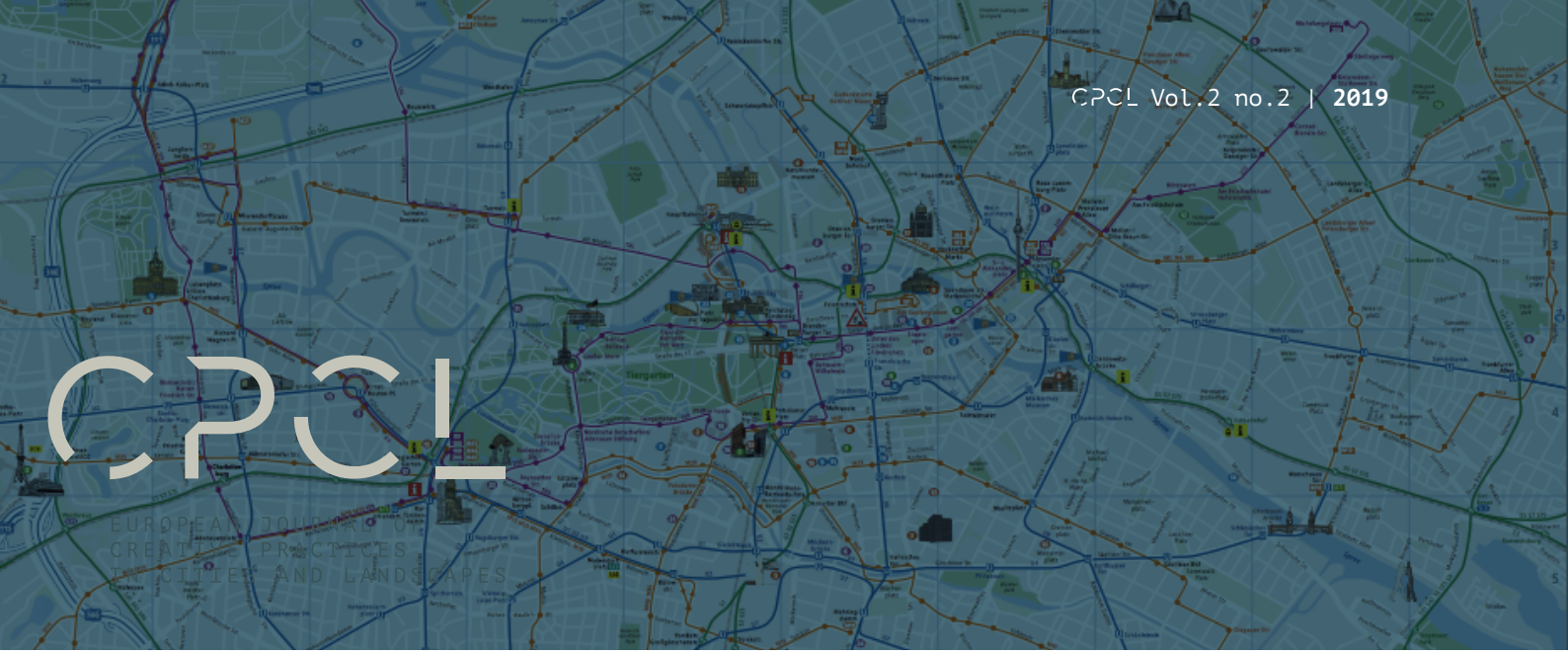
Martí Arís, Carlos. *Le variazioni dell'identità. Il tipo di architettura*. Edited by M. De Benedetti. Translated by E. Laurenzi. Novara: CittàStudi, 2012.

Municipality of Bologna. Regulation on Collaboration Between Citizens and the City for the Care and Regeneration of Urban Commons. Accessed January 22, 2020. http://www.comune.bologna.it/media/files/bolognaregulation.pdf.

Oldenburg, Ray. *The Great Good Place: Cafes, Coffee Shops, Community Centers, Beauty Parlors, General Stores, Bars, Hangouts and How They Get You Through the Day*. 1st ed. New York: Paragon House, 1989.

Rodgers, Christopher, and Duncan Mackay. "Creating 'new' commons for the twenty-first century: Innovative legal models for 'green space.'" *Journal of Environmental Planning and Management* 61, no. 5–6 (2017): 1051–69. https://doi.org/10.1080/09640568.2017.1333407.

Rossi, Aldo. *The Architecture of the City*. Translated by Joan Ockman and Diane Ghirardo. Cambridge, MA: The MIT Press, 1984.



MISCELLANEA

Where Is Berlin? Cultural Commons and Urban Policy Among Real and Virtual Walls

Chiara Carolina Donelli — University of Parma — donelli.chiara@gmail.com
Michele Trimarchi — Magna Graecia University (Italy); University of Bologna (Italy) — michele.trimarchi@unibo.it

ABSTRACT

"Poor but Sexy" is Berlin, in a well-known institutional slogan. The city has experienced a unique evolution since the end of World War II and the Cold War years, attracting creative talents who crafted a metropolitan and cosmopolitan network of fertile connections and exchanges. Berlin appears to be structured in micro-areas: *kiez* is the urban and social unit, a small commons where shared views and actions define the neighbourhood. Since the fall of the Wall, the Berlin community has lived in a multiple-layered town whose dynamics revealed many contradictions, due to the virtual walls and maps that end up opposing to the elaboration of a consistent metropolitan strategy. This article discusses the role of cultural commons in urban development, which does not fit a unique model or mechanism. An effective administrative action can encourage the diffusion and location of creative industries and cultural enterprises, generating a sustainable value chain for Berlin's identity, based upon cultural commons.

KEYWORDS

Social Dynamics; Urban Strategies; Cultural Commons; Art System; Localisation.

PEER REVIEWED
https://doi.org/10.6092/issn.2612-0496/9126
ISSN 2612-0496

1 Cultural Commons within a complex urban texture

Urban Commons in Berlin can be interpreted through the concept of kiez,[1] the micro-framework defining the urban structure. Berlin is formed by twelve Bezirke, self-government units with no legal personality. But kiez refers to a city neighbourhood: a relatively small community within a larger town, a district that has developed its own charm and distinctive image, gradually created by the inhabitants' social identity. The word kiez is therefore used by Berliners to describe the neighbourhood where they live and feel at home. It is an atmospheric stratification of local and relational memories rather than a precisely defined area with formal labels and borders. Nothing can contribute more to the diversification of the city than this strong sense of identity of a specific area; the kiez palimpsest could be considered the partial outcome of the strategies aimed at careful urban renewal[2] in the attempt at combining the physical renewal of buildings with the need to preserve the existing urban and social structure.

Development and urban growth have been peculiar in Berlin, and differently from other European towns they were based on the shared beliefs that:

- the displacement of low-income population from the city centre should be avoided;
- the socially hybrid structure of the city has to be preserved;
- the residents should be involved in the process of decisions directly affecting them.

Will this belief resist when the number of residents is expected to increase? What is going to happen when the enormous need for space will have to be primarily satisfied? This question is still unsolved, but it emphasises the divided texture of the city, where the problems of reconstruction have been essential for the reflection upon the shape of the cultural landscape and the design of public action.

2 Can a wall/scarf play the role of a backbone?

For decades the Berlin Wall has played the role of a backbone for cultural and social dynamics, viewed from both (somehow reciprocally impermeable) perspectives. As many previous analyses suggest, the fact

1. Kiez is a German word that refers to a city neighbourhood, a relatively small community within a larger town. The word is mainly used in Berlin and northern Germany. In Berlin the term usually has a positive connotation, as inhabitants often identify with the Kiez they live in (http://www.berlin.de).

2. Concept developed in the western half of the city in the context of 1987 International Buildings Exhibition (IBA), 1984. It was Firstly applied in Prenzlauerberg in 1993. Bauausstellung Berlin GmbH and Internationale Bauausstellung Berlin, *The City Center as a Place to Live: Efforts in Careful Urban Renewal*. (Berlin: Bauausstellung Berlin, 1984)

that the city had been heavily bombed in the WWII, and rigidly divided by a wall until twenty-five years ago, should be considered as the stepping stone for understanding its specificity.[3] The complex history over its shoulders offers distinctive reflections upon the urban layout[4]: no needs to invent a new city,[5] the challenge was rather to understand and restore its identity. The crucial question was not "How can Urban Planners recapture the loss?" but "Which one, among the Berlin's many pasts, should they choose?" The memory of the 1920s without Nazis and Communists? Or the Berlin divided but without the Wall? Either Western or Eastern memories?

The singular situation in front of the planner was a city in which the Wall inhibited any push into the hinterlands and left a big empty grey zone crossing it in the middle. The concepts of centre and periphery were completely upside-down. The fall of the Wall has been the occasion for unavoidably and desirably reshaping the whole metropolitan area and its newly opened connections with the German territories.[6] Post-reunification has meant here a twenty-five years long boom in creativity: the city of talents pursued the urban marketing strategy to subsidise creativity aiming at a successful urban development for the future.[7] The image the city wanted to screen itself in was a tidy link between culture and creativity.

This was the case of the two symbols of Berlin: the Reichstag and the East Side Gallery, in which contemporary art had solved many controversial political problems.[8] Indeed, after a first disruptive wave against the symbol of the division, a process of re-appropriation followed. Other similar solutions, such as the Bernauer Strasse Park Memorial (1999), and the Berlin Wall Trail 160-km cycling path developed in 2010, were adopted years after. The Wall was over, and Berlin had to craft a new backbone. The city was building its vocabulary around the words: dynamic, cheap and innovative; new massive investment programs, like the regeneration

---

3. Brian Ladd, *The Ghosts of Berlin: Confronting German History in the Urban Landscape* (Chicago: University of Chicago Press, 1998)

4. Boris Grésillon, "Berlin, Cultural Metropolis: Changes in the Cultural Geography of Berlin Since Reunification," *Ecumene* 6, no. 3 (July 1999): 284–94, https://doi.org/10.1177/096746089900600303

5. Elizabeth A Strom, *Building the New Berlin: The Politics of Urban Development in Germany's Capital City* (Lanham, Md.: Lexington Books, 2001)

6. Margit Mayer, "New Lines of Division in the New Berlin," in *Toward a New Metropolitanism Reconstituing Public Culture, Urban Citizenship, and the Multicultural Imaginary in New York and Berlin*, ed. Antje Dallmann, Günter H Lenz, and Friedrich Ulfers (Heidelberg: Winter, 2006), 171-83

7. Stefan Krätke, "City of Talents? Berlin's Regional Economy, Socio-Spatial Fabric and 'Worst Practice' Urban Governance," *International Journal of Urban and Regional Research* 28, no. 3 (2004): 511–29, https://doi.org/10.1111/j.0309-1317.2004.00533.x

8. From the 1970s to the early 2000s, many authors highlighted the progression of the pairing of culture and urban planning. Among them Sharon Zukin, *Loft Living: Culture and Capital in Urban Change*. (Baltimore: Johns Hopkins University Press, 1982); Michael Sorkin, *Variations on a Theme Park: The New American City and the End of Public Space* (New York, NY: Hill; Wang, 1992); Michael Parkinson and Franco Bianchini, *Cultural Policy and Urban Regeneration: The West European Experience* (Manchester: Manchester University Press, 1993).

of Postdamer Platz[9] and the renewal of the Museuminsel, were being carried out.

In such a way Berlin managed to market itself from "divided city" to a globally-known international cultural district, and from a Cold War Wall tourism into a wide and multidimensional cultural destination.[10] Still, that was not enough to keep it from falling into financial bankrupt in 2001. Where is the "poor but sexy" Berlin? The overmentioned slogan was a clever practice of turning upside-down the image of the ongoing financial crisis of local government in 2000. In such a respect the 2001 administration led by Mayor Klaus Wowereit represented a new strategic direction, where new policies were implemented in order to boost Berlin's role as a creative city and overcome the consequences of the fast de-industrialisation occurred after the reunification.

The challenge was to craft a diffused quality of urban life: cultural facilities; independent and artist's run galleries rather than museums and established cultural centres; small green areas and parks rather than big sports stadiums, spread in the city; small cafes and bars rather than chain restaurants. This reflects Wowereit's approach, including his famous slogan. In other words, Berlin was bankrupt but possessed an image of "coolness" which could be exploited in the name of profit. If until the early 2000s we could observe a focus on the pursuit of the "capital of culture" status, now we can clearly observe a pursuit of the status of "creative city."[11]

Wowereit's strategic plan seems to be fully achieved. What made the creation of a creative hub in the middle of Europe possible? Not only a strategic plan but a cauldron of cultural policies, public action, attitude and different contingencies:

- The openness of the city towards a wide range of possibilities led to the creation of a bunch of different types of format.
- The historical tidy relation between the city and contemporary art. The art scene was playing a key role in the recovery process based on the city's attractiveness for artists, and it never missed to provide artists with new materials and new forms of interest: starting from the Wall, passing through the squat movements, arriving to the plethora of neglected sites.
- The charm image magnets for the young were effective. Berlin was marked as an alternative city during the division, when

9. Potsdamer Platz, was sold in May 1990 by the Berlin Senate to the Daimler-Benz corporation at a price below market value-a controversial sale later challenged by the European Commission. Ladd, *The Ghosts of Berlin*

10. Claudia Seldin, "The Creative Shift—Considerations on the 21st Century Approach to Cultural Urban Planning: The Case of Berlin," *Culture + Urban Space 65* (2014), https://cultureurbanspace.interartive.org/creative-seldin

11. Richard Florida, *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life.* (New York: Basic Books, 2002); Richard L Florida, *Cities and the Creative Class* (New York, N.Y.; London: Routledge, 2005); Charles Landry and Franco Bianchini, *The Creative City* (London: Demos in association with Comedia, 1995).

western citizens were exempt from the military service and therefore it soon started to attract many non-conventional young residents. No mandatory closing times for bars led to a thriving nightlife where small cafes, independent production, graffiti art and subcultural squats merged to generate a cool and authentic wave.

- The simple fact of being the capital exerted a strong attraction on organisations and artists due to the higher visibility and financial options it could provide them with.
- The capital of encounter and network creation induced artists to come and go. The community is being continuously transformed, with no central point. Pluralism and variability appear to be unique features of Berlins' art scene.
- The hard shelter of good and affordable living conditions played also a crucial role for the development of contemporary art.
- The concession of visas for foreign artists and professionals of the "creative class" played an important role.
- The state support of start-ups and project spaces provided entrants in the art system to feel taken care of.
- The polycentric structure of the city was a very important factor: every kiez is a small city itself, ending up in a multitude of social structures and living conditions. This polycentric structure could be also found in the art scene: such a differentiated panorama fitted everyone's need.

Berlin is a city of contradictions: ongoing economic woes and dramatic history but also creativity and cultural richness continue to flourish.[12] Is really Berlin the metropolis of hope, or instead it became the metropolis of the hopeful? Two cases are developed and discussed in order for us to examine and evaluate such trends.

3 Different maps, different stories, the same city

3.1 Berlin's backbone: mapping the intangible

Berlin is huge, it has the same extension of New York City (area of 892 square kilometres) with one third population (3.4 million inhabitants).[13] It is laying there, as close as possible to reality; we could say it is democratic, with no material barriers even in the touristic hubs somehow inspiring the "Berlin doesn't love you" slogan. It is shaped by a structure of bus networks, inner connections, urban lakes (not just blue dots in the map), widespread green areas, empty spaces and, again, infinite streets: Berlin stands there, naked in front of its visitors. Close to it, the U-Bahn map, a

12. Elsa Vivant, "Creatives in the City: Urban Contradictions of the Creative City," *City, Culture and Society* 4, no. 2 (June 2013): 57–63, https://doi.org/10.1016/j.ccs.2013.02.003

13. *Statistischer Bericht*, Amt für Statistik Berlin-Brandenburg, Potsdam, December 31, 2013.

knot of colourful lines, intersections, stations, connections used to travel and think long-distance. Thinking about Berlin through its various maps arises from the fascination of two completely different structures, telling the same stories. Why not turning upside-down the dynamics and use the same structure (cultural maps) for telling different stories?

Each map is drawing new connections, telling different stories and reshaping the city's skeleton. Creativity has always played a huge role on how we think places, it is naturally built in the process of organising and planning. Berlin has incorporated the creative discourse within its urban development, requiring (and crafting) new rules aimed at orientating urban planning, in order for the city to build a specific and highly competitive image of itself. Therefore, in order for us to understand where is Berlin we need to start with its cultural map, analysing different areas to understand their most evident features, sinking into its contradictory aspects and perspectives, accepting the impossibility of drawing whatever general rules or analyses, also related to its landscape.

3.2 Staatliche Museen zu Berlin

The National Museums in Berlin, originated by the Royal Museum by Friedrich Wilhelm III of Prussia, now belong to the Stiftung Preußischer Kulturbesitz (The Prussian Cultural Heritage Foundation) and are supported collectively by the German Federal Government and the sixteen Länder. The location of the National Museums in the map is reassuring for the visitors: museums are mainly centrally located, often aggregated in clusters, they refer all to the same website, discounted admission for cumulative entrance is allowed, they have been renewed (some are brand new), and easily accessible. What clearly emerges is the absence of any master plans, neither for the collections and exhibitions, nor for their territorial locations.

Located in various neighbourhoods throughout the city, major sites could be easily pinpointed. The main point of interest was represented by the two former eastern sectors: Museumsinsel and the Humboldt Forum, for their central location and as the symbol of a glorious past sullied by the DDR period,[14] and the Kulturforum, as a part of the massive renewal of the area of Postdamer Platz. Together with the State Museums, Berlin has a wide range of different institutions and exhibition spaces devoted to Contemporary Art; some of them are partly publicly financed: Martin-Gropius-Bau, Haus der Kulturen der Welt, Akademie der Künste, Kunstverein. They enrich the range of public exhibition spaces, as well as private collections and experimental forms of the independent scene. Since they are

14. After its reconstruction the island became a cultural showcase for the DDR and the Soviet Union. Its location in the eastern part of Berlin had important impacts on the way in which the museums were rebuilt and the DDR focused the rebuilding of the museums on restoring and reconstruction rather than on modernisation.

not sharing any programming with the State Museums our analysis will not deal with them.

Moving South from Museumsinsel in the eastern sector, following the route of the massive urban redeveloped node of Postdamer platz and the Bundestag, we find the recent museum area of the Kulturforum. The museums complex was built to overcome the absence of a suitable cultural complex in the eastern half of Berlin. The long-term plan of the foundation is to make the Museumsinsel into an area for museums showing classical art (and moving back the Gemäldegalerie to the Bode museum), while making the Kulturforum into an area dedicated to modern art museums (and add the recently donated Pietzsch collection to the Kulturforum).[15]

None of the museums of the Museumsinsel has in agenda activities, workshops, special programs aimed at encouraging visitors (especially the residents) to came back and "live," instead of simply "getting in," the museum. The inclusive map of the state museums is confusing, not well finished, compared with the one distributed with the Berlin Welcome Card, which proves much more appealing and neat.

4 Galleries and the art market

4.1 Remoteness from the market?

The reputation of being "Poor but Sexy" does not imply a distance from the market but somehow fuels it: Berlin is now more than just one hotspot of the international art production. Germany's capital is home to around 400 galleries, and for almost twenty years a new gallery was opened almost weekly in various locations across the city. The galleries offer more than 57,000 square metres of exhibition space for artists from home and abroad to show their work. Although Berlin's reputation as a sort of "non-economic zone," for art galleries it seems almost an imperative to, at least, open a branch in the city. According to the research work carried out by the Institute of Strategic Resource Development,[16] one of the main attractions to prefer Berlin is the lively art scene, for both the artist living here and their audience.

There is a shared perception from the cultural actors that Berlin art's sustainability could not really rely upon the city's market, which is not able to adequately respond to an oversized offer. The art market shows many weaknesses, and the local troops of collectors do not manage to fulfil the

15. Charly Wilder, "Debate Pits Modern Art Against Old Masters," *Der Spiegel*, September 2012, https://www.spiegel.de/international/zeitgeist/berlin-s-culture-war-debate-pits-modern-art-against-old-masters-a-855704.html

16. Institut für Strategieentwicklung (IFSE), "Studio Berlin. In Kooperation Mit Dem Neuen Berliner Kunstverein (N.b.k.)" (Berlin: Institut für Strategieentwicklung (IFSE), June 2010); Institut für Strategieentwicklung (IFSE), "Studio Berlin II. In Kooperation Mit Dem Neuen Berliner Kunstverein (N.b.k.)" (Berlin: Institut für Strategieentwicklung (IFSE), June 2011)

available options. Despite the art professionals' complaint that the city lacks a real collectors' class, this is a negligible problem because Berlin plays the role of central node in the worldwide network. In an international perspective, Berlin's model is particularly desirable for potential connections, for both its bohemian image and low production expenses.

4.2 Different maps for different markets

The art commercial scene follows different routes of evolution compared to State Museums and the independent scene. The choice of their location is mainly based on different scenarios according to the network built by the galleries. What makes the decisive difference between Berlin and an art galleries' neighbourhood, such as New York City's Chelsea, is that Berlin galleries are scattered all over the city rather than being concentrated only in one single district. The two criteria adopted used here to analyse the galleries' locations in the city centre are: Index and LVBG. The former has been chosen due to its wide diffusion and historical importance,[17] the latter (Landesverband Berliner Galerien—LVBG) has been adopted according to the selective requirement for being included.[18] Using both criteria four main commercial clusters could be drawn. Berlin-Mitte is the district with the highest density of galleries, although through the years galleries have been changing to a large extent. Most of the young galleries settled around Auguststrasse were founded in the 1990s. The district that once used to be the symbol of the independent ongoing culture is now affordable only for established galleries due to the increasing average rents. While large galleries enhance their reputation moving to new and fashionable district, smaller galleries locate in neighbourhoods where spaces are more convenient and/or available. [Fig. 1]

Berlin-Mitte is the most important location for galleries. This is followed by districts of the former western part of the city: Charlottenburg and Schöneberg (Kurfürstenstrasse e Postdamerstrasse). The hub, along Potsdamer Strasse, situated mostly in West Berlin's Tiergarten district, has its origin back in the beginning of last century. Located in this district (and enjoying a lively night life) until World War II, art dealers moved to Charlottenburg, which became the preferred area of some prominent galleries and art dealers before the fall of the Wall.

---

17. Index brochure has been founded in 2001 and is published quarterly. In the early years, the selection for the "index" was done in a democratic decision-making process by the galleries. Meanwhile, the number of galleries is so big that it is selected strictly, who will be among the 60 chosen ones. The responsibility for this lies in the hands of a selection committee appointed for two years.

18. Requirement to become members: Gallery shall be in operation for 3 years. The Gallery shall produce at least 4 exhibition per year. The Gallery must have its own space, suitable for art presentation. Opening hours must be at least 20 hours per week. The Gallery shall continuously promote artists alive with appropriate space to present their work. The Gallery shall operate by the standard guidelines of the Federation of European Art Galleries Association (F.E.A.G.A.). <www.berliner-galerien.de>.

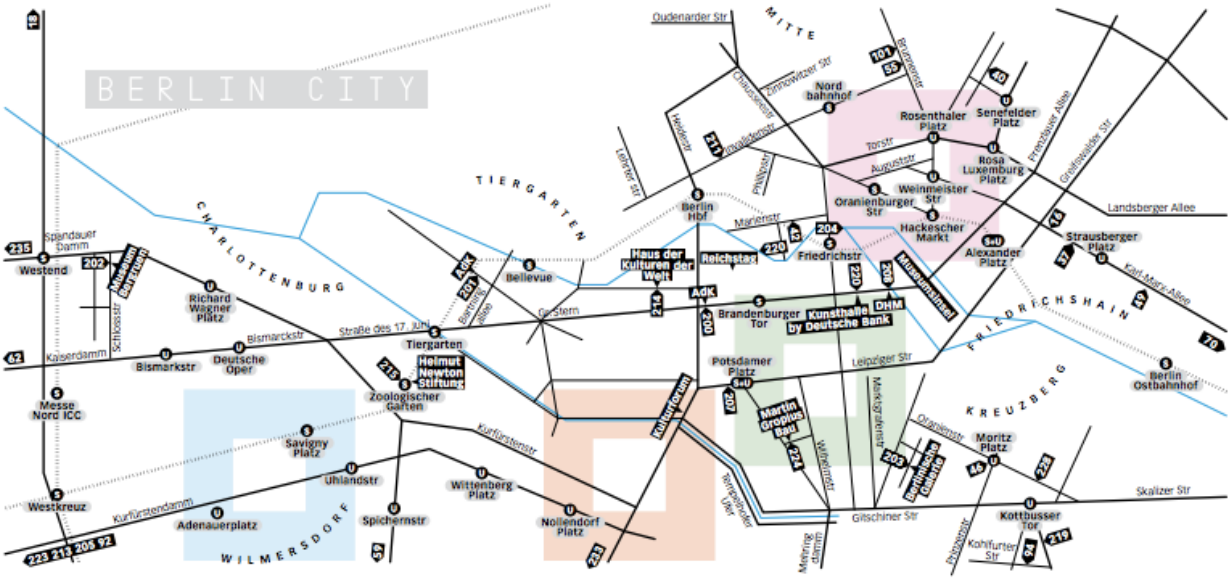


FIG. 1 Landesverband Berliner Galerien (LVBG) Map, 2014

The continued movement of galleries in and out of the district continues to give it a fresh lease in terms of art and lifestyle, or how it was defined an exodus of luxury to West Berlin.[19] More and more investors tend to live in the western district, and so business goes where its clients are.[20]

There is also another story, the one of the Galleries which resettle out of the beaten tracks, and quickly become magnets for new settlements and resettlement of further galleries, which is what already happens, for example, in Kreuzberg. Most of the galleries in Berlin have several moves behind them, and in the geography of this movement we can observe two major trends. The former moves from one art centre to the next gallery hotspot, and the latter intentionally avoids clusters, settles in less occupied places such as Moabit, Neukölln or Wedding, and gradually redefines its focus.

4.3 Between institution and market: Kommunale Galerien

At the junction between commercial galleries and the State Museums there are thirty freely accessible local galleries in different Berlin districts. Kommunale Galerien Berlin form together the AK KGB—Arbeitskreis Kommunale Galerien Berlin (Working Group Municipal Galleries Berlin) places for the promoting artists, where innovative artistic experiments and new communication formats take place; they are also active in art education projects for people from different backgrounds, cultural traditions and generations. They have been built for creating networking action among different milieus and professionals, particularly between the independent scene and institutional cultural workers.

19. Isabelle Graw, "The Myth of Remoteness from the Market," *Texte Zur Kunst* 94 (2014): 62
20. ibid.: 62

5 The independent scene

5.1 Zwischennutzung

A major force and many peculiar factors related to Berlin's cultural geography are the Projekträume (project spaces, interim use). Project spaces are alternative, self-organised art spaces, usually run by artists or curators who contribute to the Berlin art scene from different perspectives. Since 1972, when the first project space opened its door in Berlin, their number kept increasing year by year.[21] Open and fluid structure, easy to reallocate, affordable price, high numbers of potential participants, are all features that perfectly match with the city's start-up culture.

The practice of Zwischennutzung (temporary rent contract usually with controlled price introduced in Berlin in the 1990s)[22] feeds for the most part the proliferation of such a culture. The diversity of temporary usage reflects the heterogenous nature of their promoters: start-ups; migrants; system refugees; drop-outs; part-time activists. The grounds were particularly influential for the proliferation of such contracts due to high amount of wasted and empty spaces, the outcome of the speculative boom of the early 1990s.[23] They are literally wastelands: "urban sites that appear to be unmarketable in the medium to long term," as phrased by the Department for Urban Development.[24] A trend in the use of such a type of contract could be observed especially in low-income, high immigration kieze, and this provides landlords with incentives to use such a contract to avoid squatters and redevelop the area, without being bound in long term contracts. [Fig. 2]

At the same time, the cultural activities offered to the local community are regarded as the key element in the upgrade of problematic areas: on one hand the usual audience of off-scenes discovers new places in the city, and establishes new connections, being stimulated by curiosity. Artists and curators, on the other hand, gain access to temporary working spaces for a lower or free rent, although they have to face short term

---

21. Studio Urban Catalyst, "Urban Catalysts. Strategies for Temporary Uses—Potential for Development of Urban Residual Areas in European Metropolises" (Berlin, 2003), www.templace.com/think-pool/one786f.html?think_id=4272

22. Klaus Overmeyer et al., *Urban Pioneers: Temporary Use and Urban Development in Berlin = Berlin: Stadtentwicklung Durch Zwischennutzung*. (Berlin: Jovis, 2007)

23. Following the reunification of the city, in the early 1990s many of the vacant sites located in the central districts of Berlin became prime pieces of real estate in the context of the speculative boom which hit Berlin in 1990–1991. Many sites in the Friedrichstadt were snapped up by international investors; while one the most famous "wastelands" inherited from Berlin's division, the Potsdamer Platz, was sold in May 1990 by the Berlin Senate to the *Daimler-Benz corporation* at a price below market value—a controversial sale later challenged by the European Commission. This was a period of economic boom and inflated growth forecasts for Berlin, which came to an end in 1993. Those brief years of building boom left an oversupply of office space which has not been absorbed since. Lower than expected growth rates and investment flows have limited the demand for commercial development on Berlin's remaining vacant lots. Claire Colomb, "Pushing the Urban Frontier: Temporary Uses of Space, City Marketing and the Creative City Discourse in 2000s Berlin," *Journal of Urban Affairs* 34, no. 2 (2012): 131–52, https://doi.org/10.1111/j.1467-9906.2012.00607.x

24. Overmeyer et al., *Urban Pioneers*

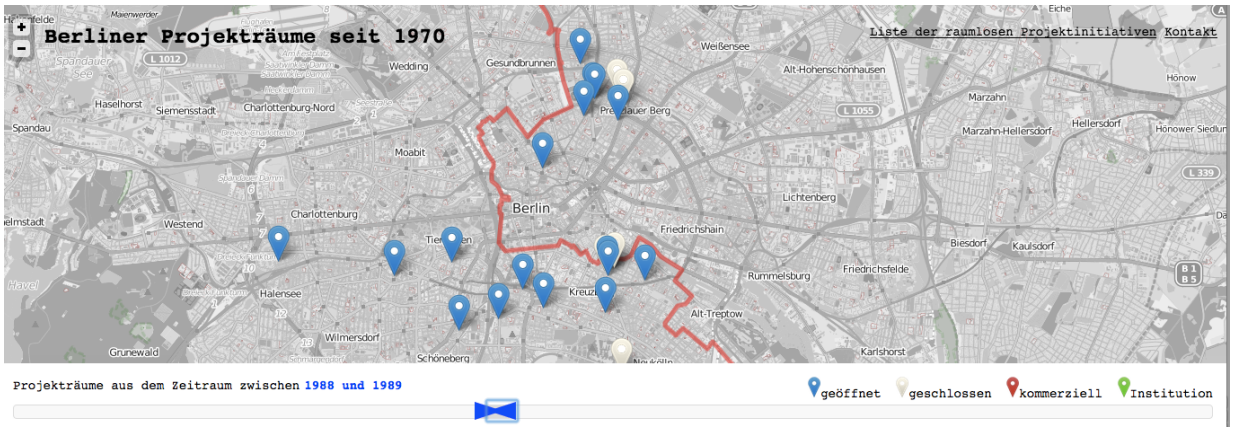


FIG. 2 Interaktive Projekträumekarte, 1988-1988. Powered by Leaflet—Projektraumdaten und Webseite/Data and Webside: Séverine Marguin und Erik Streb del Toro. Data https://openstreetmap.org. Titles: http://wikimedia.org/ and http://www.projektraeume-berlin.net/

programming. Despite the long neglect in 2007, policy-makers started[25] to realise that one of the city's main features could be promoted as a strength to attract more young creatives, and mentioned the availability of vacant spaces for temporary uses as the key for the continuous development of the cultural economy. The artists, the ones who were facing the dark side of gentrification processes[26] and tried to escape from it, are the actors who unconsciously fed it. Indeed, the former poor area of Kreuzberg and Neukölln are now simply gentrified areas.

5.2 What is close to you: Projekträumekarte

The Interaktive Projekträumekarte (interactive historical map) realised in the Freie Szene context by Severine Marguine are pinpointed in the map with different realities.[27] The problematic part of these realities is the absence of any networks or databases of information related to the locations. Not only visitors but the actors themselves do not know each other. To analyse the trajectories of these temporary uses and interim spaces means to understand the broader political economy of urban transformation, economic restructuring, and changing urban governance in Berlin.[28]

Soon after the fall of the Wall, the former Wall East Sector of Prenzlauer Berg and Mitte (Oranienburgerstrasse) saw new spaces blossoming thanks to the declaration of the area as a redevelopment zone (Sanierungsgebietn). The old district of Prenzlauer Berg was in the immediate vicinity of the city centre but was circumvented by the Berlin Wall and had been therefore neglected during the lifetime of the Eastern Ger-

25. In 2007, the Senate Department of Urban Development commissioned a study to investigate how urban development and planning policy could encourage the further growth of cultural industries.

26. Loretta Lees, Tom Slater, and Elvin Wyly, *Gentrification* (New York: Routledge, 2008)

27. Cultural sociologist, Leuphana Universität Lüneburg + EHESS Paris. The creator of the map. Interviewed on 21 August 2014

28. Florian Haydn and Robert Temel, *Temporary Urban Spaces*: Concepts for the Use of City Spaces (Basel: Birkhäuser, 2006)

man state.[29] In the second half of the 1990s a considerable increase in investments occurred, resulting in a rise of prices and an increasing number of spaces (indicatively around 2000) closed or moved to different areas. The area of Mitte, as described before, indeed saw the commercialisation and institutionalisation of many structures that used to be independent in the 1990s.

The wealthy areas of the West, as Charlottenburg and Wilmersdorf, never really experienced such a diffusion of Projekträume, differently from the galleries scene, and barely no social housing building, compared to traditionally inner urban, unemployed working-class areas such as Kreuzberg, Friederichschain, or Neukölln. In the course of the development of the city, gentrification became the dominant trend for development of most inner-city neighbourhoods; various studies already discuss the different types of gentrification and the different phases recorded in various times.[30]

From the fall of the Wall the northern areas have lost room at the benefit of the southern districts. Indeed, the concentration of newly opened pioneer locations (such as project spaces, clubs, galleries) has shifted from Mitte (1992), to Prenzlauer Berg (1997), to Friedrichshain (2002) in a clockwise movement across the city, reaching Kreuzberg and even parts of Neukölln.[31] The establishment of this sort of cultural and sub-cultural poles is connected with a shift of image of the new locations, specifically the development of an "artists' quarter," "gallery district" or "hip district" in both the media and public perception. Consequently, rental price rose not only for housing but also for the retail segment, so that interim use, dependent on affordable rent, started to move.[32] [Fig. 3]

Differently from the large-scale investment of the 1990s, the city is now involved in the global competition for creativity-based industries, and some way has to be found to keep some commodities or places unique and attractive enough. The implication of this is that urban policy-makers are now explicitly targeting the "off-beat," "alternative," and previously "underground" subcultural and artistic sectors,[33] for instance Kreuzberg as a gentrified, established underground cool area.

---

29. Matthias Bernt, *Stadterneuerung Unter Aufwertungsdruck* (Sinzheim: Pro-Universitate-Verl., 1998); Stefan Krätke, "Berlins Umbau Zur Neuen Metropole," *Leviathan* 19, no. 3 (1991): 327–52, https://www.jstor.org/stable/23984081; Matthias Bernt and Andrej Holm, "Exploring the Substance and Style of Gentrification: Berlin's 'Prenzlberg'," in *Gentrification in a Global Context: The New Urban Colonialism*, ed. Rowland Atkinson and Gary Bridge (London; New York: Routledge, 2005), 107–26

30. Andrej Holm, "Berlin's Gentrification Mainstream," in *The Berlin Reader: A Compendium on Urban Change and Activism*, ed. Matthias Bernt, Britta Grell, and Andrej Holm (Bielefeld: transcript Verlag, 2013), 171–88; Neil Smith, "New Globalism, New Urbanism: Gentrification as Global Urban Strategy," *Antipode* 34, no. 3 (2002): 427–50, https://doi.org/10.1111/1467-8330.00249

31. ibid

32. Kate Shaw, "The Place of Alternative Culture and the Politics of Its Protection in Berlin, Amsterdam and Melbourne," Planning Theory & Practice 6, no. 2 (June 2005): 149–69, https://doi.org/10.1080/14649350500136830

33. The importance of the approximate 150 non-profit and mostly self-funded artists' run spaces was recently honoured by the Berlin Senate. In September 2012, the first prizes for artistic spaces were awarded. Seven selected artists' initiatives received a €30,000 grant each.

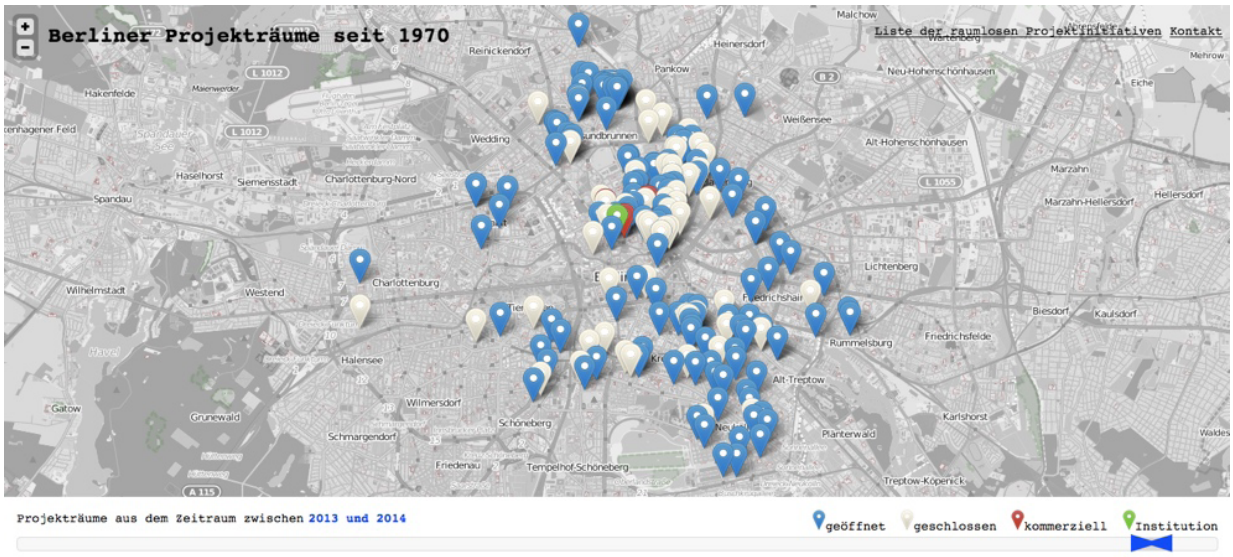


FIG. 3 Interaktive Projekträumekarte, 2013-2014. Powered by Leaflet—Projektraumdaten und Webseite/Data and Webside: Séverine Marguin und Erik Streb del Toro. Data https://openstreetmap.org. Titles: http://wikimedia.org/ and http://www.projektraeume-berlin.net/

6. Broadcast map: the image to tourists

The maps are pieces of the puzzle describing the city's identity. Every map has been crafted by different entities to build or make visible connections, to attract visitors or customers, and to provide them with guide and orientation.[34] None of the previously considered maps has been built for showcasing a specific image aimed at marketing the public.

"Berlin doesn't love you," say many stickers plastering traffic lights in Kreuzberg. Besides the mainstream not all the residents, especially the residents in the city centre, have reacted so enthusiastically to the constantly increasing flood of visitors.[35] In 1992–1993 it was decided to involve the private sector more strongly in the marketing of Berlin as a tourist goal.[36] The tourism office Berlin Tourismus Marketing GmbH (BTM) – now renamed Visit Berlin – is a public-private partnership, partially financed by the city of Berlin and the tourism industry. In 1994 Partner für Berlin, a second public-private partnership was founded, and it started to carry out a marketing strategy for Berlin.

The marketing public relations activity carried out by the Berlin Senate and Partner für Berlin to reach this social-political objective has been varied and versatile throughout the years since the campaign "be Berlin," a

34. Johannes Novy, "What's New About New Tourism? And What Do Recent Change in Travel Implies for the 'Tourist City' Berlin," in *The Tourist City Berlin: Tourism and Architecture*, ed. Jana Richter (Salenstein: Braun, 2010)

35. Claire Colomb et al., "The 'Be Berlin' Campaign. Old Wine in New Bottles or Innovative Form of Participatory Place Branding?" in *Towards Effective Place Brand Management: Branding European Cities and Regions* (Cheltenham, UK; Northampton, MA: Edward Elgar, 2010), 173–90

36. Claire Colomb, Staging the *New Berlin: Place Marketing and the Politics of Urban Reinvention Post-1989* (London: Routledge, 2012); Johannes Novy and Sandra Huning, "New Tourism (Areas) in the 'New Berlin'," in *World Tourism Cities: Developing Tourism Off the Beaten Track*, ed. Robert Maitland and Peter Newman (London; New York: Routledge, 2009)

FIG. 4 Berlin Welcome Card Map, from https://visitberlin.de

participatory marketing campaign launched in 2008 in which the city was presented as an international and open metropolis, a young exciting location for business and science, as well as a future-oriented industrial region, a world renowned creative metropolis or quite simply the "place to be." In the first four years of "be Berlin" the city has developed a clear brand profile, and Berlin started to be promoted as "creative city." **[Fig. 4]**

As confirmed by an image survey conducted by TNS Infratest on behalf of the Berlin marketing campaign at the beginning of 2011, the "Metropolis on the Spree River" today is perceived more strongly as an attractive place where to live and work than in 2007. The high proportion of income in the city makes it increasingly difficult to distinguish between tourism and other forms of migration and mobility, as well as other forms of leisure and consumption. There is a growing number of highly mobile academics, artists, and creative workers, and entrepreneurs that can be encountered in Berlin. They are sometimes referred to as Yuccies (Young Urban Creative Internationals). As happened in East London, there is an increase in the number of cafes, bars, institutions and other venues for target groups that simply enjoy going out, or are eager for experiences. Urban and social processes focused upon transformation are clearly favoured.

The city's approach to tourism policy seems to convey its main efforts on marketing initiatives aimed at targeting temporary visitors, affluent consumers and voyagers, due to a tourist-oriented network of urban ser-

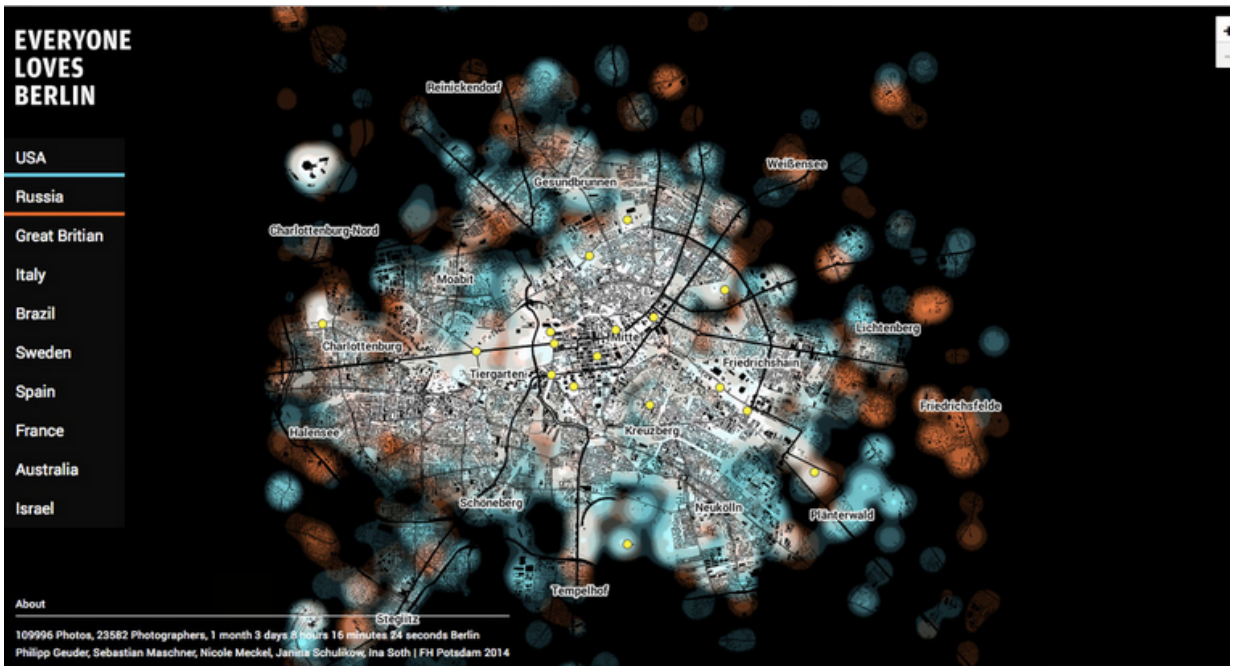


FIG. 5 Everyone loves Berlin, University of Applied Science, Potsdam https://incom.org/projekt/4679, 2014. The project was created in the seminar "Google Maps and beyond: Maps for Desktop, Mobile and Print" at the University for Applied Sciences Potsdam, and published on July 30, 2014.

vices. What is absent is the consideration of the impact that uncontrolled tourism ends up exerting upon residents and the neighbourhoods.

The two maps of the BVG and City Welcome Card put spotlight on the city centre, pinpointing places in the city centre with international vocation as major points of interest. The project "Everyone loves Berlin"[37] is looking at Instagram data from Berlin. To snap pictures and, consequently, to upload them on a social network means a recognition of some places rather than others as points of interest. [Fig. 5]

It is reassuring enough for urban planners, then the tourist map and the Everyone loves Berlin map barely coincide. The tourist maps are the actual result of the strategic urban planning in Berlin, based on policy, tools and strategies determining the medium and long-term goals for the future of the city.

7 A hidden map: Urban Development Planning

Behind the maps showcased to the public there are different organs and institutes, which analyse both the weak and the strong points of the city and set the areas of different potential development according with this. The task assigned to the Stadtentwicklungsplan Zentren 3[38] (urban development planning) is to identify social and spacial problems at an

37. Project by Nicole Meckel, Sebastian Moschner, Janina Schulikow,Ina Soth, Philipp Geuder of University of Postdam.

38. Urban development plans (UDP) are instruments for the informal city structural planning. Urban development plans are designed for the whole city of Berlin and include directives and objectives for different functions such as work, living, social infrastructure, transport, supply and waste disposal.

FIG. 6 Stadtentwicklungskonzept Berlin 2030, Transformationsräume der BerlinStrategie

early stage and to develop corresponding coping strategies to deal with these problems.

While Berlin is still attracting young people, the structure of the population is changing: the urban community is becoming older and more international.[39] No longer the Wall divides the city today, but the S-Bahn Ring marks the separation between newcomers and "real Berliners." Within the ring only one up to three residents was born in Berlin. The map shows how the city failed in maintaining its native inhabitants in the inner area (it is a common problem of many cities where art and culture are a prevailing feature of the perceived identity). **[Fig. 6]**

The other interesting data are related to the nationality of migrants. Turkish immigrants are mostly concentrated in the west area: Wedding, Kreuzberg, partially in Neukölln. The new lines of immigration still follow the former route of the wall. The high number of immigrants in the centre seems to contradict the gentrification displacement due to the progressive rise of prices; gentrification occurs here in the form of "displacement

39. *Statistischer Bericht,* Amt für Statistik Berlin-Brandenburg, Potsdam, December 31, 2013

from lifestyle" reducing housing quality (shared apartments, old and not renewed buildings).[40]

A considerable part of immigration is related to the city's cultural opportunities. In the BerlinStrategie | Stadtentwicklungs-konzept Berlin 2030 (Urban Development Concept Berlin 2030)[41] an entry is reserved for the "cultural diversity." Different strengths deserve a key role in the creation of possible future opportunities for the city, as underlined in the urban development concept, which emphasises the importance of an extended and diversified cultural supply, of architectural views as witnesses of the different ages of the city, of the ability to attract creative industries, of multiculturalism, and of public funding of the arts.

8 When problems become opportunities: what's after?

8.1 Too many maps for a consistent strategy

In the light of the controversial evolution of the dynamics of art within the urban fabric, as experienced by Berlin in the late years, the question is whether urban commons, with their powerful political dimension, can transcend extreme needs and symbolic resistance on the one hand and harmless local initiatives on the other:[42] big investment was never supported by any consistent policy or long-term strategy, but was heavier without any consideration of the ongoing situation. This could be easily observed in the maps: in the years in which the municipality was investing on the Mitte district (Postdamer Platz, Museuminsel, Reichstag), the independent cultural scene was carrying interest in completely different areas, mostly more conventionally recognised and more strictly related with the residents. The attempt was to fill the empty grey zone left by the Wall with high profile architecture without the recognition that the population, the real potential stakeholder, had already been displaced away. [Fig. 7]

The new century brought the awareness of relying on a poor budget, and to be attractive at the same time. Was that an illusion? In the coming years poverty could not be any more adopted as an asset, and some questions needed to be asked. Answers were quite difficult, if not impossible, as Scheffler observed: Berlin is condemned to becoming and never to being. It is a mixture of disappointed expectations and unrevealed opportunities. The year of the fall of the Wall was for too long considered the year zero,

---

40. Jörg Blasius, "Verdrängungen in Einem Gentrifizierten Gebiet," in *Lebensstile in Den Städten: Konzepte Und Methoden*, ed. Jens S. Dangschat and Jörg Blasius (Wiesbaden: VS Verlag für Sozialwissenschaften, 1994), 408-25, https://doi.org/10.1007/978-3-663-10618-0_26

41. Senatsverwaltung für Stadtentwicklung und Umwelt, "Berlin Strategie 2030" (Berlin: Senatsverwaltung für Stadtentwicklung und Umwelt, 2015), http://www.stadtentwicklung.berlin.de/planen/stadtentwicklungskonzept/

42. Chiara Donelli, "Where Is Berlin? Too Many (Virtual) Walls Shape the Town and Its Communities," Tafter Journal 83 (August 2015), https://www.tafterjournal.it/2015/07/15/where-is-berlin-too-many-virtual-walls-shape-the-town-and-its-communities/

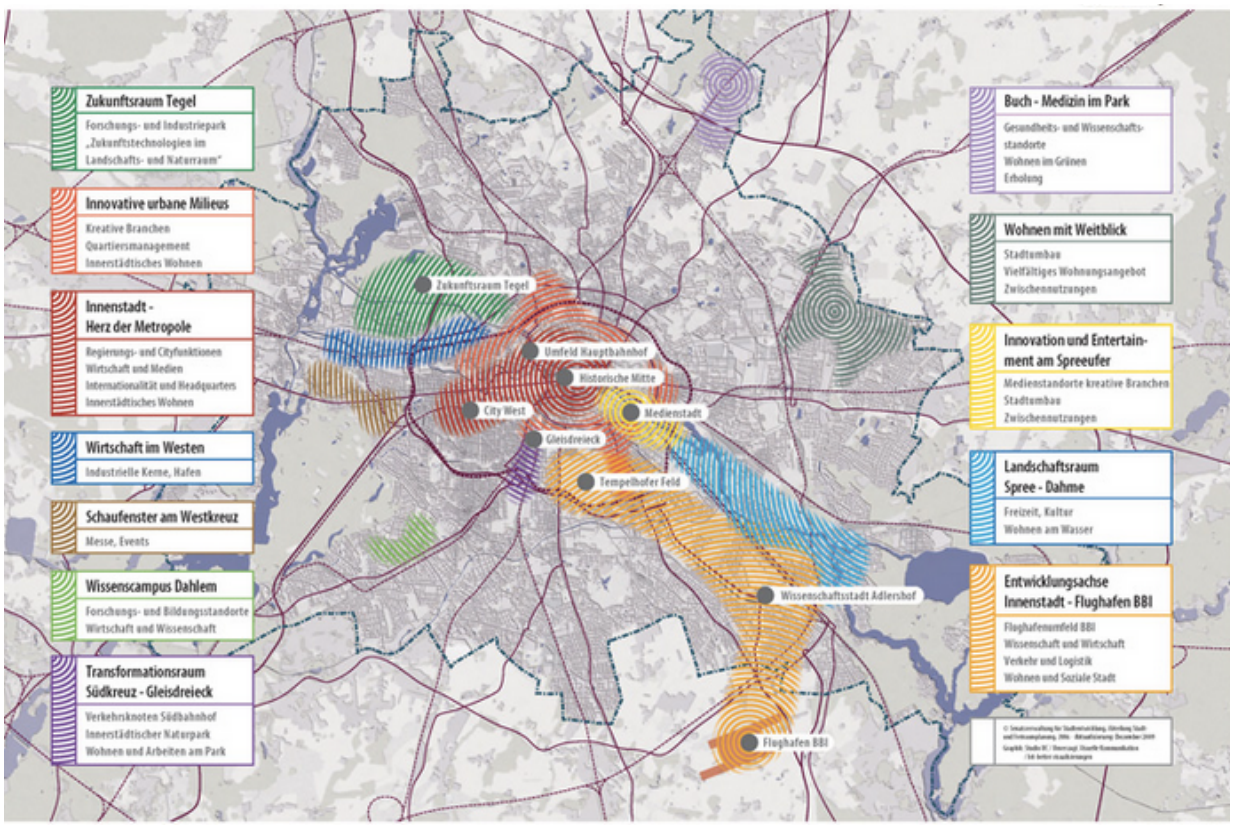


FIG. 7 Strategic development areas in Berlin. Senatsverwaltung fürStadtentwicklung und Umwelt, 2009

the point which everything could have been started from. The Wall was a big wand for the city, but this doesn't mean an absence of identity, although the municipal emphasis upon special effects, aimed at keeping high attention on Berlin, was not necessarily successful, and the city was not benefiting from such an approach. The needed backbone is still missing.

The question shouldn't be: "which cultural maps?" but: "how to develop a consistent map?" It is clear enough that there is still room for creating synergies and develop "inter-map" strategies. Berlin needs to craft a strategic exchequer where differences are acknowledged and respected, but similarities unified and connections strengthened, also considering the crucial role of contemporary art in shaping urban identity. Past experience could tell us a lot. The city did not learn from the success of Zwischennutzung, an interesting method to manage vacancy and to capitalise on the off scene. The magmatic and undefined movement of squat, and project space later, never met any institutional feedback and was never included in the city's planning. The independent scene is no longer understood primarily as a cultural attack against the mainstream or as the resistance to a hegemonic culture. Now it is time to start looking at it as niche markets to be fed.

Unbridled capital, Berlin holds the reputation of a city where everything is possible, where its own scars and voids become a playground for creativity and experimentation for everything, from the arts to politics and from architecture to philosophy; a carte blanche of unlimited possibilities. Different "Berlins" are laid on the maps as no grasped opportunities or

unexpected market losses. The city is (should be?) ready to be reinvented with new perspectives and real synergies.

8.2 Cultural commons for next years' Berlin

Quite often the word "commons" is used as a virtuous label for complex phenomena. It is not among our intentions to focus upon the political and policy view of commons, which often tends to focus upon sentimental statements rather than technical features. A common is undivided by nature, and the sharing setting can normally generate unsolved issues, whose crucial weight flows into the "tragedy of the commons," a major negative paradox able to show the symmetrical correspondence between costs and benefits. *Cujus commoda ejus incommoda*, used to say law experts in ancient Rome. It did not change that much.

Berlin suffers from the typical manufacturing capitalism disease which tends to measure outcomes (not certainly values, which are out of its vocabulary unless monetary) in a short-term perspective and in merely quantitative terms, i.e. ignoring the slower but more powerful impact upon society and the economy, and at the same time considering competition more realistic than co-operation. In such a backward framework creativity requires protection, and the intellectual property rights regulation tends to raise walls and to close doors. Whatever we may believe of the legal justifications of intellectual property protection, we should acknowledge the inter-disciplinary option whose features need to consistently combine the legal features of creativity on one hand, and the economic benefits of circulating creative ideas. In such a respect neither public ownership (too general) nor individual property (too particular) can consistently respond to the complex needs of a post-feudal and post-manufacturing framework in which the value of ideas can be properly measured through their ability to fertilise further creative intuitions, production and exchange.

Cultural commons[43] do not imply physical property: cultural heritage, museum endowment and even performing arts objects cannot represent a common property case; at the same time they cannot be normally traded in a private market framework, despite the numerous art thefts and the ambiguity of contemporary art equally hosted in public museums and in private collections.[44] Cultural commons cannot generate the "tragedy of the commons," since their shared use does not produce any spoliation or decay, and it does not imply the usual difficulty connected to the identification of the formal and substantial stakeholders. In cultural commons the value is generated by their cognitive power: what is being shared is knowledge and its infinite possible elaborations, which grow through

43. For a recent discussion on cultural commons, see Enrico Bertacchini et al., eds., *Cultural Commons: A New Perspective on the Production and Evolution of Cultures* (Cheltenham: Edward Elgar, 2012).

44. David Harvey, *Rebel Cities: From the Right to the City to the Urban Revolution*, 2012

time: cultural commons are positively affected by a natural multiplication of value. This implies that an investment in culture, associated to loose constraints and even options for shared enjoyment and common participation, is able to exert a strong impact in terms of quality of urban and social life, in a dimension that no other action can attain.

In such a respect, urban cultural commons can still be the effective response to Berlin's dilemmas between gentrification and anarchy. What the fall of the Wall generated has been a long and systematic loss of any territorial, social and even cultural orientation, due to the (too) many virtual walls whose impermeability ended up to keep the lively and magmatic patches of the city tightly separated. Even the Tacheles experience,[45] although fertile from many points of view, proved unable to craft social and cultural connections out of its physical area and its intellectual milieu. Commons can overcome reciprocal separation, since they multiply their creative, dialogic and relational value due to their common property in which individual effort is enhanced and acknowledged since other individuals are carrying such effort ahead, entering the process whereby creative intuitions are transformed into products and actions. Nobody is harmed.

Such an option requires specific administrative action, starting from a selective and generous tax exemption aimed at encouraging consistent although heterogeneous localisation in a district and shared use of facilities. Rather than monetary subsidies, whose flows end up to generate competition due to their quantitative constraints, public action should focus upon infrastructural, technological and human capital building support; this would, again, encourage the common management and responsibility of cultural resources and projects. It could avoid gentrification until the creative effort prevails upon the mere sale of atmospheres and products; and at the same time it could overcome the anarchic individualism normally related to the non-strategic growth of creative action, introducing substantial elements of shared responsibility and long-term views. Berlin needs cultural commons.

45. Verena Lenna and Michele Trimarchi, "For a Culture of Urban Commons. Practices and Policies," in *Art and Economics in the City: New Cultural Maps*, ed. Caterina Benincasa, Gianfranco Neri, and Michele Trimarchi (Bielefeld: transcript Verlag, 2019), 205–42.

Chiara Carolina Donelli, PhD, Research Fellow at University of Parma in Public and Cultural Management. She has been a visiting PhD at the University of South Australia . Her research interests includes cultural management, governance and philanthropy. She has bee working in the cultural fields for cultural organisation in the area of strategic projects. She has been a reviewer for Public Management Review.

Michele Trimarchi, PhD, teaches Public Economics (Catanzaro), Cultural Economics (Bologna), and Lateral Thinking (IED Roma). He is member of the editorial board of Creative Industries Journal, and of the international council of Creative Industries Federation. Expert in international cultural cooperation projects (Indonesia, Brazil, India, Balkan area, Guatemala), Michele is founder of Tools for Culture, a nonprofit active in the area of strategic projects for the arts and culture.

References

Bauausstellung Berlin GmbH, and Internationale Bauausstellung Berlin. *The City Center as a Place to Live: Efforts in Careful Urban Renewal*. Berlin: Bauausstellung Berlin, 1984.

Bernt, Matthias. *Stadterneuerung Unter Aufwertungsdruck*. Sinzheim: Pro-Universitate-Verl., 1998.

Bernt, Matthias, and Andrej Holm. "Exploring the Substance and Style of Gentrification: Berlin's 'Prenzlberg'." In *Gentrification in a Global Context: The New Urban Colonialism*, edited by Rowland Atkinson and Gary Bridge, 107–26. London; New York: Routledge, 2005.

Bertacchini, Enrico, Giangiacomo Bravo, Massimo Marrelli, and Walter Santagata, eds. *Cultural Commons: A New Perspective on the Production and Evolution of Cultures*. Cheltenham: Edward Elgar, 2012.

Blasius, Jörg. "Verdrängungen in Einem Gentrifizierten Gebiet." In *Lebensstile in Den Städten: Konzepte Und Methoden*, edited by Jens S. Dangschat and Jörg Blasius, 408-25. Wiesbaden: VS Verlag für Sozialwissenschaften, 1994. https://doi.org/10.1007/978-3-663-10618-0_26.

Catalyst, Studio Urban. "Urban Catalysts. Strategies for Temporary Uses—Potential for Development of Urban Residual Areas in European Metropolises." Berlin, 2003. www.templace.com/think-pool/one786f.html?think_id=4272.

Colomb, Claire. "Pushing the Urban Frontier: Temporary Uses of Space, City Marketing and the Creative City Discourse in 2000s Berlin." *Journal of Urban Affairs* 34, no. 2 (2012): 131–52. https://doi.org/10.1111/j.1467-9906.2012.00607.x.

———. *Staging the New Berlin: Place Marketing and the Politics of Urban Reinvention Post-1989*. London: Routledge, 2012.

Colomb, Claire, Ares Kalandides, Gregory Ashworth, and Kavaratzis Mihalis. "The 'Be Berlin' Campaign. Old Wine in New Bottles or Innovative Form of Participatory Place Branding?" In *Towards Effective Place Brand Management: Branding European Cities and Regions*, 173–90. Cheltenham, UK; Northampton, MA: Edward Elgar, 2010.

Donelli, Chiara. "Where Is Berlin? Too Many (Virtual) Walls Shape the Town and Its Communities." *Tafter Journal* 83 (August 2015). https://www.tafterjournal.it/2015/07/15/where-is-berlin-too-many-virtual-walls-shape-the-town-and-its-communities/.

Florida, Richard. *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life.* New York: Basic Books, 2002.

Florida, Richard L. *Cities and the Creative Class*. New York, N.Y.; London: Routledge, 2005.

Graw, Isabelle. "The Myth of Remoteness from the Market." *Texte Zur Kunst* 94 (2014).

Grésillon, Boris. "Berlin, Cultural Metropolis: Changes in the Cultural Geography of Berlin Since Reunification." *Ecumene* 6, no. 3 (July 1999): 284–94. https://doi.org/10.1177/096746089900600303.

Harvey, David. *Rebel Cities: From the Right to the City to the Urban Revolution*, 2012.

Haydn, Florian, and Robert Temel. *Temporary Urban Spaces: Concepts for the Use of City Spaces*. Basel: Birkhäuser, 2006.

Holm, Andrej. "Berlin's Gentrification Mainstream." In *The Berlin Reader: A Compendium on Urban Change and Activism*, edited by Matthias Bernt, Britta Grell, and Andrej Holm, 171–88. Bielefeld: transcript Verlag, 2013.

Krätke, Stefan. "Berlins Umbau Zur Neuen Metropole." *Leviathan* 19, no. 3 (1991): 327–52. https://www.jstor.org/stable/23984081.

———. "City of Talents? Berlin's Regional Economy, Socio-Spatial Fabric and 'Worst Practice' Urban Governance." *International Journal of Urban and Regional Research* 28, no. 3 (2004): 511–29. https://doi.org/10.1111/j.0309-1317.2004.00533.x.

Ladd, Brian. *The Ghosts of Berlin: Confronting German History in the Urban Landscape*. Chicago: University of Chicago Press, 1998.

Landry, Charles, and Franco Bianchini. The Creative City. London: Demos in association with Comedia, 1995.

Lees, Loretta, Tom Slater, and Elvin Wyly. *Gentrification*. New York: Routledge, 2008.

Lenna, Verena, and Michele Trimarchi. "For a Culture of Urban Commons. Practices and Policies." In *Art and Economics in the City: New Cultural Maps*, edited by Caterina Benincasa, Gianfranco Neri, and Michele Trimarchi, 205–42. Bielefeld: transcript Verlag, 2019.

Mayer, Margit. "New Lines of Division in the New Berlin." In T*oward a New Metropolitanism Reconstituing Public Culture, Urban Citizenship, and the Multicultural Imaginary in New York and Berlin*, edited by Antje Dallmann, Günter H Lenz, and Friedrich Ulfers, 171- 83. Heidelberg: Winter, 2006.

Novy, Johannes. "What's New About New Tourism? And What Do Recent Change in Travel Implies for the 'Tourist City' Berlin." In *The Tourist City Berlin: Tourism and Architecture*, edited by Jana Richter. Salenstein: Braun, 2010.

Novy, Johannes, and Sandra Huning. "New Tourism (Areas) in the 'New Berlin'." In *World Tourism Cities: Developing Tourism Off the Beaten Track*, edited by Robert Maitland and Peter Newman. London; New York: Routledge, 2009.

Overmeyer, Klaus, Holger Lauinger, Senatsverwaltung für Stadtentwicklung, and Studio UC. *Urban Pioneers: Temporary Use and Urban Development in Berlin = Berlin: Stadtentwicklung Durch Zwischennutzung*. Berlin: Jovis, 2007.

Parkinson, Michael, and Franco Bianchini. *Cultural Policy and Urban Regeneration: The West European Experience*. Manchester: Manchester University Press, 1993.

Seldin, Claudia. "The Creative Shift—Considerations on the 21st Century Approach to Cultural Urban Planning: The Case of Berlin." *Culture + Urban Space* 65 (2014). https://cultureurbanspace.interartive.org/creative-seldin.

Shaw, Kate. "The Place of Alternative Culture and the Politics of Its Protection in Berlin, Amsterdam and Melbourne." *Planning Theory & Practice* 6, no. 2 (June 2005): 149–69. https://doi.org/10.1080/14649350500136830.

Smith, Neil. "New Globalism, New Urbanism: Gentrification as Global Urban Strategy." *Antipode* 34, no. 3 (2002): 427–50. https://doi.org/10.1111/1467-8330.00249.

Sorkin, Michael. *Variations on a Theme Park: The New American City and the End of Public Space*. New York, NY: Hill; Wang, 1992.

Stadtentwicklung und Umwelt, Senatsverwaltung für. "Berlin Strategie 2030." Berlin: Senatsverwaltung für Stadtentwicklung und Umwelt, 2015. http://www.stadtentwicklung.berlin.de/planen/stadtentwicklungskonzept/.

Strategieentwicklung (IFSE), Institut für. "Studio Berlin II. In Kooperation Mit Dem Neuen Berliner Kunstverein (N.b.k.)." Berlin: Institut für Strategieentwicklung (IFSE), June 2011.

———. "Studio Berlin. In Kooperation Mit Dem Neuen Berliner Kunstverein (N.b.k.)." Berlin: Institut für Strategieentwicklung (IFSE), June 2010.

Strom, Elizabeth A. *Building the New Berlin: The Politics of Urban Development in Germany's Capital City*. Lanham, Md.: Lexington Books, 2001.

Vivant, Elsa. "Creatives in the City: Urban Contradictions of the Creative City." *City, Culture and Society* 4, no. 2 (June 2013): 57–63. https://doi.org/10.1016/j.ccs.2013.02.003.

Wilder, Charly. "Debate Pits Modern Art Against Old Masters." D*er Spiegel*, September 2012. https://www.spiegel.de/international/zeitgeist/berlin-s-culture-war-debate-pits-modern-art-against-old-masters-a-855704.html.

Zukin, Sharon. *Loft Living: Culture and Capital in Urban Change*. Baltimore: Johns Hopkins University Press, 1982.

CPCL Vol.2 no.2 | 2019

CPCL
EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES

PRACTICES

The New Role of Libraries: Places for All

Cécile Houpert — EUROCITIES (Belgium) — cecile.houpert@eurocities.eu

ABSTRACT

Libraries are reinventing the concept of open public places for everyone by becoming third places. "Third places" is a term coined by sociologist Ray Oldenburg and refers to places where people spend time between home ("first" place) and work ("second" place). Famous coffee chains brand their stores as third places. But the most effective third places come from the community in many forms, from creative breeding grounds to cultural centres, from neighbourhood gardens to open public spaces and to libraries. Third places are playing a growing role in cities as they function as meeting places for a variety of people, as spaces for cooperation, connection and inspiration. The text presents three recently designed and built public library buildings—De Krook in Ghent, Dokk1 in Aarhus and Oodi in Helsinki.

KEYWORDS

Libraries; Third places; Ghent; Aarhus; Helsinki.

https://doi.org/10.6092/issn.2612-0496/10429
ISSN 2612-0496

Libraries are reinventing the concept of open public places for everyone by becoming third places. "Third places" is a term coined by sociologist Ray Oldenburg and refers to places where people spend time between home ("first" place) and work ("second" place). Famous coffee chains brand their stores as third places. But the most effective third places come from the community in many forms, from creative breeding grounds to cultural centres, from neighbourhood gardens to open public spaces and to libraries. Third places are playing a growing role in cities as they function as meeting places for a variety of people, as spaces for cooperation, connection and inspiration. In Ghent, a vast third place opened in 2017: De Krook library, Ghent's new landmark and cultural centre, a place to read, to learn, to live, and to simply be.

1 The shell: an open balcony to the city

The idea to build a new library in Ghent dates back to 2005 when the old library was outgrowing its building in use since 1992. But for the first time in its 216 years of existence (the library was established in 1804), the city library ended up in a building that was truly designed as a library.

The building of De Krook must be seen within the framework of a large city development project for the city of Ghent. Plans to build a prestigious Music Forum were abandoned due to lack of funds and public support. The Flemish minister of culture at the time, Bert Anciaux, together with the alderman of culture in Ghent, redirected the plans towards the most accessible cultural temple of all: the library, where everyone is welcomed and can feel part of society.

The monumental building, which incorporates a work of art by Michaël Borremans[1] on its plaza, was designed by the Ghent architecture firm Coussée & Goris Architecten[2] and their partner RCR Arquitectes[3]. This Spanish architecture firm also won the Pritzker Prize in 2017, the highest international distinction for architecture **[Fig.1]**.

The idea of the architects was to create a building that would look like a city within a city with its streets and squares, an open balcony to the river, a shell that would become Ghent's new living room.

From the outside, the building can be read as a stack of horizontal plateaus with a view on the river Scheldt. Once inside, the building functions like a traditional department store, with its large atria and signature staircases which almost seem to be able to draw people upwards into the building. Going up, readers and visitors can enjoy the surrounding city and its attractive views, which create a physical link with the urban landscape. Extremely transparent and open, allowing local residents to meet and

1. http://www.zeno-x.com/artists/MB/michael_borremans.html, accessed January 22, 2020.
2. http://www.coussee-goris.com/, accessed January 22, 2020.
3. https://www.rcrarquitectes.es/rcr/, accessed January 22, 2020.

FIG. 1 De Krook, Ghent. Photo City of Ghent

discover what this reclaimed place has to offer, the building is thoroughly at home in its location.

2 Safe space for all: Ghent's new living room

In this digital era, city libraries are still relevant, but their roles are definitely changing. In a society which offers an abundance of information, there is a growing need to help people navigate the available knowledge. Ghent's new De Krook library has tailored its activities accordingly. The library's goal is to help people understand the changing world and help them add meaning to it. It is doing this by taking a central place in the debate on the knowledge-based society.

Of course, the library wants to remain an oasis of peace and quiet, with the same extensive collection of books, CDs, DVDs etc. It has more cosy reading corners and quiet reading and study areas than before. An unusual space to read and stay is De Trap van Steen en Wolken: the experience staircase "of brick and clouds," named after a famous book written by Flemish author Johan Daisne. Library visitors use it to rest, to read, to listen to monthly Library Sessions. Since its opening, the more "classic" role of the library is doing surprisingly better than expected or hoped. Library loans, instead of stagnating at a status quo—have increased by almost 10% [Fig.2].

FIG. 2 De Krook, Ghent. Photo City of Ghent

De Krook's basic services remain free: one doesn't have to consume here. One can just be. But the library is more than books. It is also a place to meet other people during lectures or debates, to develop skills in workshops, to experiment in the "maker's lab," to collaborate on research. The building also includes a multi-purpose room, a study room and a reading café, places highly appreciated by students who storm in at opening hour to get a space. The library also hosts several free advice services for legal question or career orientation and study. One highly appreciated service is the Digital Talent Point: a service that enables people to acquire basic IT skills, helped by trained staff. This service has become indispensable to the library, not only because there is a clear need to be helped in this digital age but also because the library adopted new systems and applications that require users' support as well. One such application is the "Ghent reads", an inspiration tool directly built into the bookshelves. Based on what other Ghent citizens borrowed in the library, the tool provides users with personalised advice on what to read next.

De Krook is a library of partnerships. Four key actors made it happen: the city of Ghent, the University of Ghent, the province of East-Flanders and imec (the Flemish research centre for nano electronics and digital technologies). In addition to the city library, imec and UGent are housed at De Krook. The various institutions work together and offer services at the site. They are known collectively as "the inhabitants of De Krook." The library is also working with 30 local partners, which makes De Krook much more than a house of books.

3 Creating expectations and adjusting to uses

The opening weekend back in 2017 drew 20,000 people into the building. Only seven months later the library welcomed its one millionth visit. The Ghent citizens have embraced this new third place as their own. And the library clearly tapped into a need. Ghent's residents find the way to the library, enjoy being here and are coming back.

De Krook wants to evolve towards a level of service that is tailored to the needs and expectations of all the Ghentians. The changing socio-demographics of the city have an impact on the library as well, and the library has to adapt to those: migration, rejuvenation, aging population, diversification, but also multilingualism and poverty are all typical city phenomena which require special attention and adapted actions [Fig.3].

But a brand new place using brand new systems require testing and a lot of care, and adjusting them to users' needs can take time. At the beginning, the adjustments needed for the building and physical installations were putting pressure on the operation of the library, pressure which was aggravated in the case of Ghent by the unexpectedly high usage of the place and premises. While exchanging with other cities about their experiences of opening new cultural premises as big as De Krook, colleagues from the city of Aarhus explained to colleagues in Ghent that about a year and a half of operation is needed to outgrow the "technical teething troubles." And they know what they are talking about.

FIG. 3 De Krook, Ghent. Photo City of Ghent

4 Hear what the Danes have to say

Aarhus's new library opened in 2016 as a multifunctional new complex, a perfect example of post-industrial regeneration: the Dokk1 building[4] houses the main public library of the city (the old venue has since been sold and used for other purposes), but creativity and resources have produced a centre with a much wider scale of functions. During its first year of operation Dokk1 has had 1.2 million visitors. Beyond the functions of a cutting edge 21st century library, the building houses an ultramodern automated parking area and an official citizen services centre that is not fenced off from the reading, internet and leisure spaces of the library.

The setup is what could be labelled a Danish type of public-private partnership. The investment was initiated and steered by the city, managed by a national foundation that has the right to run the parking place for a proper length of time; as in cases of other cultural investments a number of further business based foundations have contributed to the financing of the construction as well as some of the functioning costs [Fig.4].

Designing the many details of Dokk1 was done upon the analysis of the basic needs of people, having human growth in sight. With the evolution of the answers given to the perceived needs a centre was produced that responds to needs that the city had not even identified at the very start.

FIG. 4 Dokk1, Aarhus. Photo Aarhus Public Libraries

4. https://dokk1.dk/english, accessed January 22, 2020.

FIG. 5 Dokk1, Aarhus. Photo Adam Mørk

Dokk1 is open seven days a week from 8 am to 10 pm, unstaffed in the late hours. The various spaces are regularly used for events—readings, performances, debates etc.—about 40% of which in conjunction with co-organisers and 20% fully by external partners. Dokk1 houses offices for over a hundred clerks at the citizen services; library staff is 60 people plus 40 IT specialists. The 1% of the investment budget that Danish law assigns to artistic works allowed, among other things, the creation of The Gong—a huge metal tube that gives sound whenever a new child is born in the hospitals of the city.

From the opening Dokk1 has been used intensively by citizens and has instantly been incorporated into the tissue of the city. The project has successfully reintegrated the former harbour area into the life of Aarhus, contributing to the upgrading of the neighbourhood, attracting various businesses and services in the area [Fig.5].

Both Aarhus and Ghent needed to adjust some of the work processes to the reality of the new building, the new operation, the unimagined high use by visitors. While settling in the city, libraries also need to finetune the

innovative work processes for functions that are new to the library, such as meeting room exploitation, the maintenance of the book transport system, or the reception of visitors that do not come for the library. All these new tasks are part of cutting edge libraries that want to be more than places of reading, and turn into third places.

5 Lessons for all when developing places for all

These lessons from Ghent's library are lessons for all cities. When designing third places, city makers have to remember that they are about and for people. Dutch architect Aat Vos[5] identifies five dimensions that need to be taken into account when developing third places: people, places, experience, programming and future. The primary task would therefore be to ask people what they want their spaces to look like **[Fig.6]**.

Another good example comes from Finland: Helsinki Central Library Oodi[6] was a project for the 100th anniversary of Finnish independence. Oodi is a 185,677-square-foot public library that sits in the centre of the city, directly opposite the Finnish Parliament. In Finland, access to all libraries is guaranteed by law, and this three-floor, energy-efficient library was designed by Finnish architecture firm ALA Architects[7] to be a "living room for the

FIG. 6 Oodi, Helsinki, skyview. Photo Kuvio

5. https://aatvos.com, accessed January 22, 2020.
6. https://www.oodihelsinki.fi/en/, accessed January 22, 2020.
7. http://ala.fi/, accessed January 22, 2020.

FIG. 7 Oodi, Helsinki. Grand opening. Photo Risto Rimppi

nation" made with 99 miles of Finnish spruce timber. There are even nine living trees on the third level, bathed in light with floor-to-ceiling windows.

Oodi has been designed by listening to and engaging its users so that it would match city residents' hopes and needs in the best possible manner. In 2012, hundreds of library dreams of residents were collected, and with the help of participatory budgeting city residents were able to allocate funds to the development projects of the Central Library. Over the years, various customer panels and development communities have shared their input as users in Oodi's design process. Future users have had their say, for example, in the choice of Oodi's seats and the collection of magazines and journals. The name of the library, too, was selected through an open name competition [Fig.7].

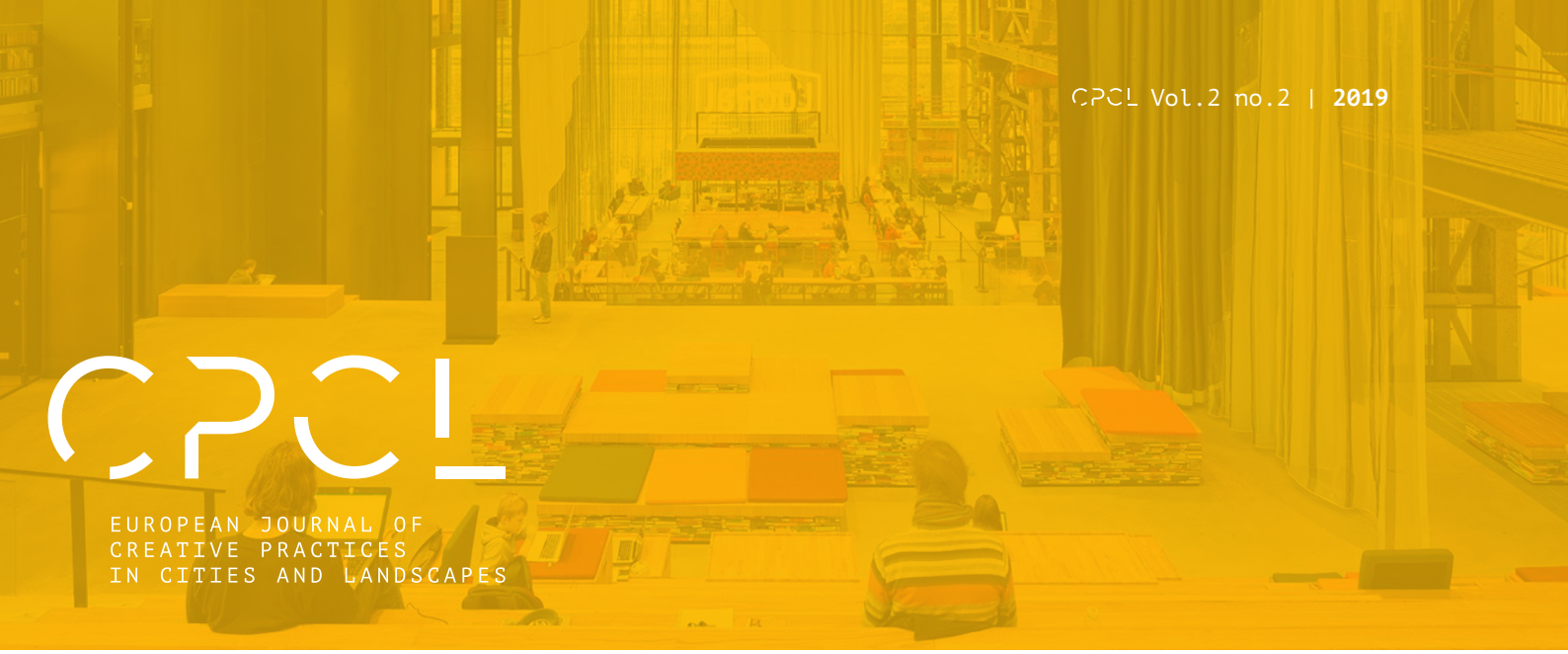
These tips are part of a non-exhaustive checklist for city makers. Other recommendations include to develop an open and transparent place, both from the inside and the outside; know the users; make the place accessible for free; create meaningful experiences; diversify the offer; merge public and commercial; and do not shy away from experimentation. In Ghent they embraced a participatory approach as much as they could. For instance, while designing the Youth Library they involved youngsters intensively for a few years. First living lab research helped the youngsters frame what their library should look like, later with a group of young ambassadors called Team Krook they defined the activities to be held here. Youngsters asked for a gaming corner which is very much used today and is one of the library's many successes.

More info: https://dekrook.be/ (accessed January 22, 2020).

Contact:
Krist Biebauw—directorBibliotheek De Krook
Myriam Makebaplein 1
9000 Ghent, Belgium
Krist.biebauw@stad.gent

Cécile Houpert: After a Master degree in European affairs and international relations, Cécile joined EUROCITIES in 2015 as part of the culture team where she works as project officer for culture and cultural heritage. She was involved in the management of the Culture for Cities and Regions initiative, a three-year peer-learning programme for European cities and regions financed by the European Commission. She now coordinates EUROCITIES' activities as part of the H2020 project ROCK, monitoring implementation in the 10 ROCK cities and organising peer-learning and capacity-building activities with partners. She is also involved in EUROCITIES' culture forum and working groups related activities.

CPCL Vol.2 no.2 | 2019



CPCL
EUROPEAN JOURNAL OF
CREATIVE PRACTICES
IN CITIES AND LANDSCAPES

PRACTICES

Public libraries and "Making." Experiences in the Netherlands

Olindo Caso — Delft University of Technology (Netherlands) — o.caso@tudelft.nl

ABSTRACT

The public library holds a key position in the present geography of the urban public realm, as it emphasizes the centrality of self-directed culture in contemporary society by mirroring the processes of individual empowerment underpinned by technological changes. It transforms the public space in a place of collective action and individual participation, contributing to forming the urban commons in the contemporary splintered society. At present, visiting a library is an urban public act of collective participation / inclusion. The crucial condition for this is the paradigmatic transition from a passive knowledge-consumption model to an active knowledge-production model—by which libraries increasingly position "making" at the intersection of public culture and public realm, bringing performative spaces and creative opportunities within the public sphere of all citizens. How do library buildings accommodate these public relationships, and in how far are they successful in doing it? The article proposes a theoretical underpinning framework for the development of the public library in the context of the contemporary socio-cultural conditions in order to position recent experiences in the Netherlands. The aim is to enlighten the current relationships between urban commons, making culture, and the architecture of the public library with an eye on future developments.

KEYWORDS

Public Library; Makerspace; Third Place; Public Interiors; Cultural Infrastructure; Hybrid Building.

https://doi.org/10.6092/issn.2612-0496/9547
ISSN 2612-0496

During the last 10 years cultural typologies are increasingly changing from passive containers of information and (art) exposing devices to active centers of social engagement and co-creation, where "making" becomes the preferred *modus operandi* in the relationships between individuals and society. This is what seems to emerge by considering the developments in the Netherlands, in particular when referring to the public library.

1.

The resurgence of the library as a physical building[1] has much to do with the rediscovering of culture as a maker of public space and collective urban life,[2] an approach that has acquired prominence in city (re)development since the Eighties.[3] The role of the architectural design in conferring a specific quality to urban places coincides in the case of the library with the re-envisioning of the cultural idea of community, even more so when this is animated by micro-cultures and individual agents. Mattern[4] proposed the metaphor of "social infrastructure" as a fitting reference for understanding this contemporary library, at the same time emphasizing its contextual embedment in society.

Following the rise of the new making culture,[5] public libraries started to host different types of performative spaces[6] in order to offer workspaces, tools and tutoring that enable their users to make, discover, co-create, collaborate and share. Jochumsen[7] described these performative spaces and their growing diffusion in the Danish library landscape: "in a public library, the concept 'performative space' is used to describe spaces in which the library's users are inspired to create new artistic expressions or are given the ability to design, create and produce various

1. Casper Hvenegaard Rasmussen and Henrik Jochumsen, "The Fall and Rise of the Physical Library" (17th BOBCATSSS Symposium Porto, Porto, 2009), http://eprints.rclis.org/12925/1/40.pdf.

2. Dorte Skot-Hansen, Casper Hvenegaard Rasmussen, and Henrik Jochumsen, "The Role of Public Libraries in Culture-led Urban Regeneration," *New Library World* 114, no. 1/2 (January 1, 2013): 7–19, <https://doi.org/10.1108/03074801311291929>. Tim Abrahams, "What Culture Is to a City," *Architectural Review* 239, no. 1427 (January 2016): 3–11.

3. Steven Miles and Ronan Paddison, "Introduction: The Rise and Rise of Culture-Led Urban Regeneration:," *Urban Studies* 42, no. 5–6 (July 2, 2016): 833–839, <https://doi.org/10.1080/00420980500107508>. Jonathan Vickery, "The emergence of culture-led regeneration: a policy concept and its discontents," vol. Research Papers n. 9 (Coventry: University of Warwick. Centre for Cultural Policy Studies, 2007), http://wrap.warwick.ac.uk/36991/1/WRAP_Vickery_ccps.paper9.pdf.

4. Shannon Mattern, "Library as Infrastructure," *Places Journal*, June 9, 2014, https://doi.org/10.22269/140609.

5. Chris Anderson, *Makers: The New Industrial Revolution* (New York: Random House, 2012). Mark Hatch, *Maker Movement Manifesto Rules for Innovation in the New World of Crafters, Hackers, and Tinkerers* (New York: McGraw-Hill, 2013).

6. Theresa Willingham and Jeroen de Boer, *Makerspaces in Libraries*, Library Technology Essentials 4 (Lanham, Maryland: Rowman & Littlefield, 2015). Olindo Caso, "The New Public Library as Supportive Environment for the Contemporary Homo Faber," in Olindo Caso and Joran A. Kuijper, *ATLAS. Makerspaces in Public Libraries in The Netherlands* (Delft: TU Delft Open, 2019).

7. Henrik Jochumsen, Dorte Skot-Hansen, and Casper Hvenegaard Rasmussen, "Towards Culture 3.0-–Performative Space in the Public Library," *International Journal of Cultural Policy* 23, no. 4 (July 4, 2017): 512–24, https://doi.org/10.1080/10286632.2015.1043291.

kinds of products or cultural artefacts in interaction with other users and professionals."[8] In the performative space it is possible to distinguish among creation space and innovation space."The creation space represents performative spaces in libraries where artistic tools […] are provided for the users. Here the users can also get know-how on staging events and how to present their products. The innovation space represents performative spaces in the form of various types of so-called makerspaces and hackerspaces, in which IT technology is the central hub."[9]

The trend towards the performative-oriented public library was already remarkable in the United States, often a precursor of developments in other parts of the (western) world. Already in 2011 the American Libraries Association proposed development scenarios for American libraries among which the creation library was a relevant strategic option.[10] At that time the development of groups of makers, both craftsmens and digital (hackers), was already a growing phenomenon. The concurrency of digital technologies and fabrication possibilities gave rise at the MIT Boston to the concept of FabLab[11] which rapidly extended world-wide. The first FabLab at a public library was opened at the Fayetteville (NY) library in 2012,[12] followed by Westport Public Library in Connecticut.[13] Nowadays the offer of makerspaces in American public and academic libraries is a standard feature.[14]

2.

Making is growingly embedded also in the cultural offer of Nordic libraries and kulturhus, and libraries in the United Kingdom recently started to do the same.[15] In the Netherlands, the diffusion of performative spaces in the context of the public library takes place within library concepts that promote social encounter, discovery and the public sphere, where (literacy in) digitalization and new media increasingly occupies a relevant position.[16] In doing this, the public library presents itself in the community as an

8 Ibid., 6.

9 Ibid.

10 Roger Eli Levien, *Confronting the Future: Strategic Visions for the 21st Century Public Library* (Washington, D.C.: ALA Office for Information Technology Policy, 2011).

11 Neil Gershenfeld, "How to Make Almost Anything: The Digital Fabrication Revolution," *Foreign Affairs* 91, no. 6 (2012): 42–57.

12 However this FabLab was not inspired by the MIT's concept (Fabrication Laboratory), but it was a "Fabulous Laboratory" developed by Lauren Britton. See: Willingham and Boer, *Makerspaces in Libraries*.

13 Ibid.

14 Ibid.

15 See: https://www.gov.uk/government/publications/libraries-and-makerspaces/libraries-and-makerspaces

16 Caso, "The New Public Library.."

elective "third space"[17] by supplying a comfortable, safe environment for all citizens in order to relax, learn or meet with others, as well beyond of the library's primary cultural scope. Visiting a library is no longer a functional action solely directed towards a specific goal, but it becomes an urban public act of collective participation and inclusion. For this the urban public space extends into the library public interiors providing the city with a stage for (local) urban narratives. The transition is low-threshold, it forms a public continuous that includes the library cafés and the tribune[18] and that is structured by a sequence of informally furnished sitting places, bay areas, niches, workshop rooms, interactive screens, study islands. Examples can be found in Arnhem and Delft, among others.

The Rozet in Arnhem[19] **[Figs. 1a - 1b]** is designed as extension of urban public ground into the cultural hub (including among others the library and art school), in the form of a gently climbing street wrapping the cultural program and offering collective opportunities to seat, meet, and participate in urban life. The climbing street (a stepped tribune) is also used for events, expositions or as a showcase; it is a spatial connector among the internal cultural programs. Rozet is by itself a connector in the city, relinking the historical center and the post-war reconstruction of the river area.[20] The cultural center OPEN in Delft is the result of the merging of the DOK library and the VAK, an extracurricular art school. It is conceived as a "village" of workshops connected by an informal landscape of study places, seats, niche areas that offers popular gathering places to the local community. The hosting building is the same of the former library,[21] but after a small expansion that makes it possible to access it from different streets, as a public passage. The central, large staircase turns into a tribune when hosting events **[Figs. 2a - 2b]**.

The raise of performative spaces in Dutch libraries[22] can be placed in the light of the cultural transition from consumption to production, when active participation becomes part of the hybrid public space. By helping a widespread, democratic diffusion of 21st century skills (technology, creativity, self-sufficiency, entrepreneurship) and by rendering them part

17 Ray Oldenburg, The Great Good Place: Cafes, Coffee Shops, Community Centers, Beauty Parlors, General Stores, Bars, Hangouts and How They Get You Through the Day, 1st edition (New York: Paragon House, 1989). Aat Vos, 3RD 4 ALL. How to Create a Relevant Public Space (Rotterdam: nai010 Publishers, 2017).

18 Depending on scale and specific situation, yet a tribune is today a standard presence in public libraries.

19 Rozet has been designed by Neutelings Riedijk Architects.

20 Zsofia Bene, Olindo Caso, and Marian Koren, "Le Centre Culturel Rozet Aux Pays-Bas, Un Exemple Réussi de Bibliothèque Intégrée," in *Un Monde de Bibliothèques*, ed. Julien Roche (Paris: Electre Édition du Cercle de la Librairie, 2019), 163-169.

21 DOK has been designed by Dok Architects (the hosting building) and Aat Vos (library interiors). The offices also collaborated in OPEN, which has seen a strong participation from the involved cultural agents.

22 "Makerplaatsen in Openbare Bibliotheken: Onderzoeksresultaten BOP-Enquete Makerplaatsen" (Den Haag: Nationale bibliotheek van Nederland, 2018), https://www.kb.nl/sites/default/files/docs/rapportage_makerplaatsen_2018_def_0.pdf.

FIG. 1A Cultural Center Rozet, Arnhem. Interior. Image: Olindo Caso.

FIG. 1B Cultural Center Rozet, Arnhem. Interior. Image: Olindo Caso.

of their public interiors, factually libraries attempt to position making at the intersection of public culture and public realm, for they bring fablabs, makerspaces[23] and other creative opportunities within the public sphere

23 The terminology used to indicate makerspaces is varied as it might refer to different typologies. For an overview see: Guy Cavalcanti, "Is It a Hackerspace, Makerspace, TechShop, or FabLab? | Make:," Make: DIY Projects and Ideas for Makers, May 22, 2013, https://makezine.com/2013/05/22/the-difference-between-hackerspaces-makerspaces-techshops-and-fablabs/.

FIG. 2A OPEN, Delft. Interior. Image: Olindo Caso..

FIG. 2B OPEN, Delft. Interior. Image: Olindo Caso.

of all citizens in turn keeping pace with societal developments. This connection between the third space character of the public interiors of Dutch libraries and the diffusion of making culture is a new step in the redefinition of the features of the contemporary public space, and an evolution in public library design. The new public library of Tilburg[24] is remarkable in this sense as it brings making at the center of the library experience. It is located in a cultural heritage building, a former train workshop shed (the LocHal, locomotives shed) in the railway area whose obsoleted industrial setting is currently being re-developed into a new urban area. The new library is a main trigger in the operation. The library is designed to be a laboratory for inspiration, learning and innovation. In addition to workshop rooms, a number of "labs" populate the building as the library program has been re-envisioned according to a "making" modality: "DigiLab," "GameLab," "FutureLab," "FoodLab," "LearningLab," "TimeLab," "DialogueLab," "WordLab," altogether shaping the *makerij* (literally: the place of making). In the library, flexible wooden elements can be used to construct a personal meeting place or a personal niche, connecting themes as individualization, customization, spatial identification, inclusion of micro-cultures / counter-cultures to the library: in once the bottom-up construction of socio-spatial commons around the culture of making **[Figs. 3a - 3b]**.

FIG. 3A Interiors of the LocHal, Tilburg. Image: Mecanoo Architects

24 The LocHal has been inaugurated in January 2019. The building design is by Civic Architects, Braaksma & Roos, and Inside Outside/Petra Blaisse. The interior design is by Mecanoo Architects. The LocHal hosts the Public Library, Seats2meet (an enterprise offering meeting and work facilities), and KunstLoc Brabant, a center for art and culture.

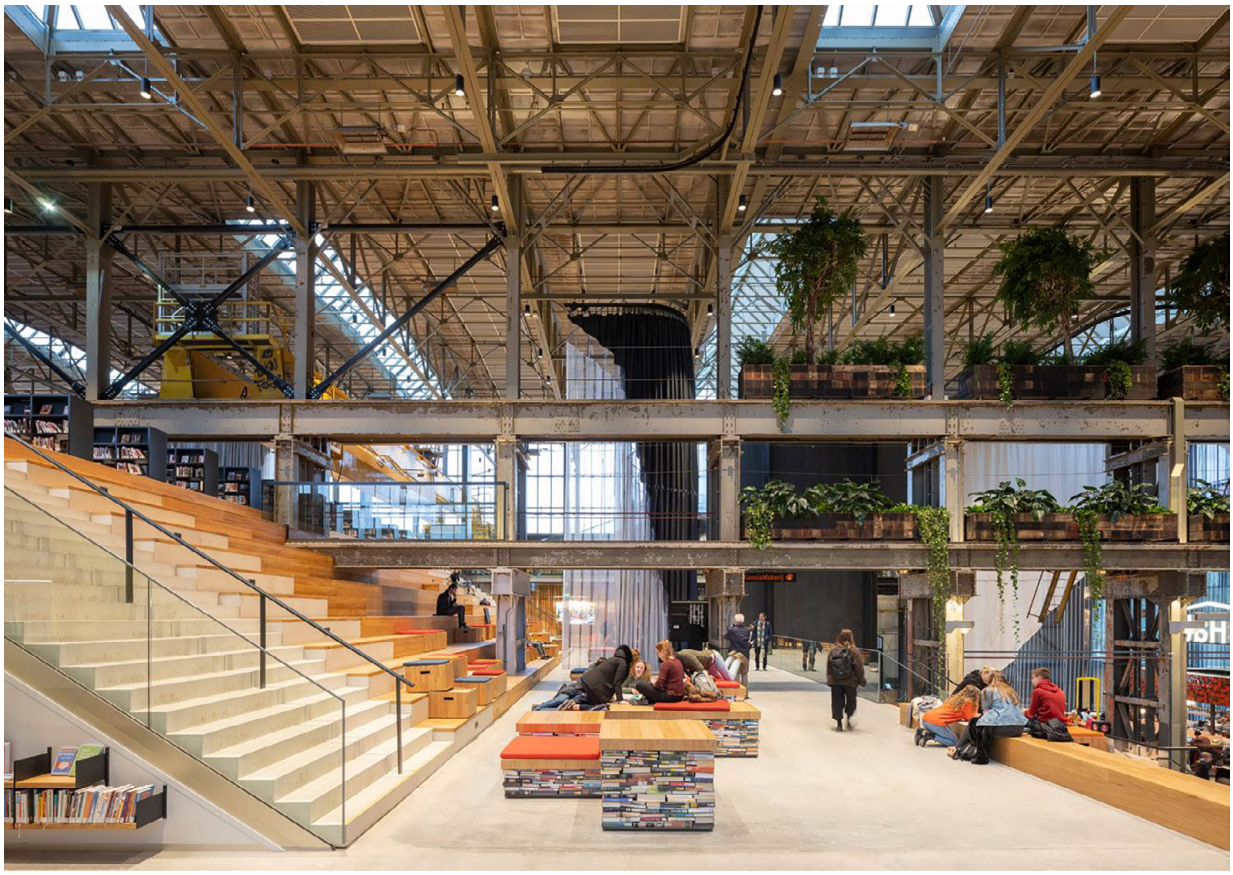


FIG. 3B Interiors of the LocHal, Tilburg. Image: Mecanoo Architects

3.

The LocHal shows the potential of library environments in connecting community and culture through the design of a public place. However, this kind of extensive operations are possible when supported by a shared ambitious urban program that provides adequate investments.[25] The average libraries need to realize the link between making, culture and community/public realm by adaptations, initiating makerspaces within the boundaries of their ordinary physical and financial rooms. How does the public library in the Netherlands realize the connections between making culture and public realm? What physical characters of making are mostly diffused in Dutch public libraries? For this, an empirical mapping[26] has recently shed light on the spatial characteristics of the development of makerspaces in the context of the public library in the Netherlands. The mapping reported the position of the makerspace in the library/building of reference; the spatial typology of the makerspace, its equipment and target; the relationships of the makerspaces with the library program and

25 The role of LocHal as urban trigger for the development of the railway area in part explains the ambitions and the investments. This is a similar situation as in other public library enterprises, like OBA Central at Amsterdam.

26 Olindo Caso and Joran A. Kuijper, *Atlas: Makerspaces in Public Libraries in The Netherlands* (Delft: TU Delft Open, 2019), http://resolver.tudelft.nl/uuid:9a5b9b6b-0e0e-408a-8cba-d0b22b7c302e.

with the outside public space; quantity data as to size and workplaces. This information is represented by means of isometric drawings and data [Figs. 4a - 4b].

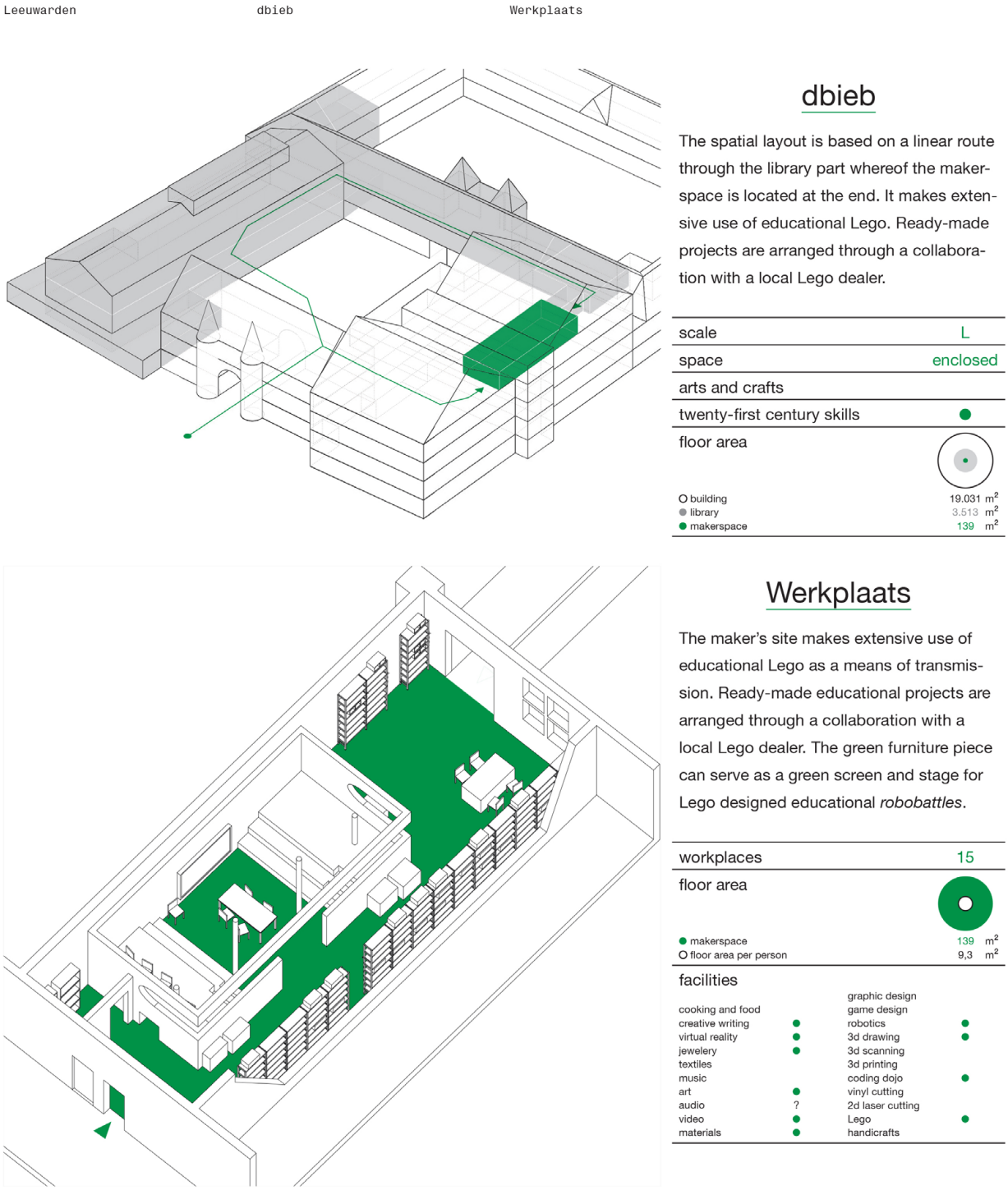


FIG. 4A Mapping makerspaces in public libraries. The "dbieb" in Leeuwarden. Source: Caso and Kuijper, *ATLAS*. Image by Joran Kuijper.

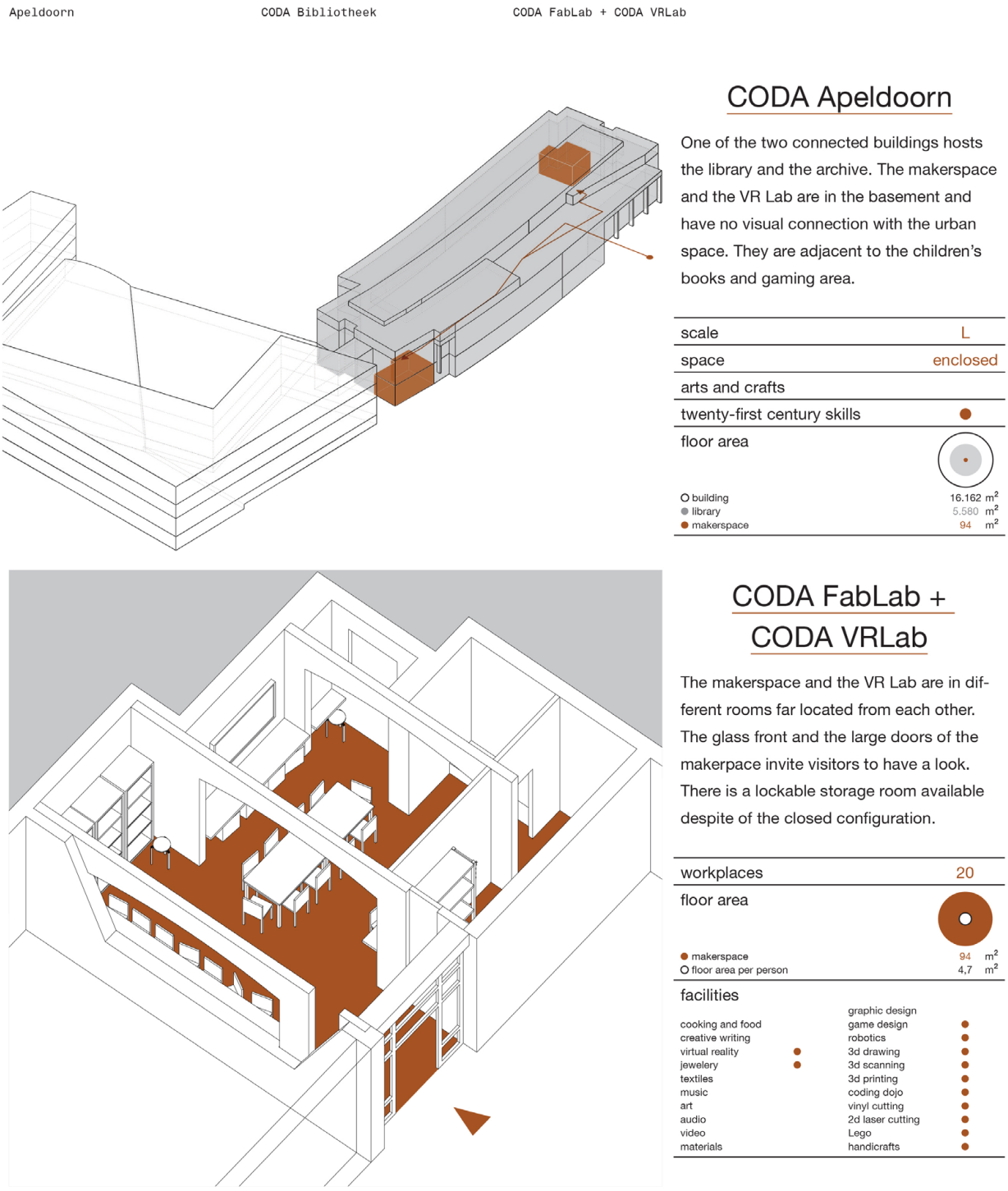


FIG. 4B Mapping makerspaces in public libraries. The CODA FabLab in Apeldoorn. Source: Caso and Kuijper, *ATLAS*. Image by Joran Kuijper.

The choice of the spatial typology adopted for the makerspaces is interesting for considering the relationships between making and the public realm of the library. At this end, both open or closed makerspace configurations are adopted, with the former being more integrated in the overall public library environment than the latter, that use to hold stronger relationships with functional library areas as workshops, meeting rooms, auditorium.[27]

27 Olindo Caso, "Spatial Characters of Fifteen Library Makerspaces in the Netherlands," in Olindo Caso and Joran A. Kuijper, *ATLAS. Makerspaces in Public Libraries in The Netherlands* (Delft: TU Delft Open, 2019).

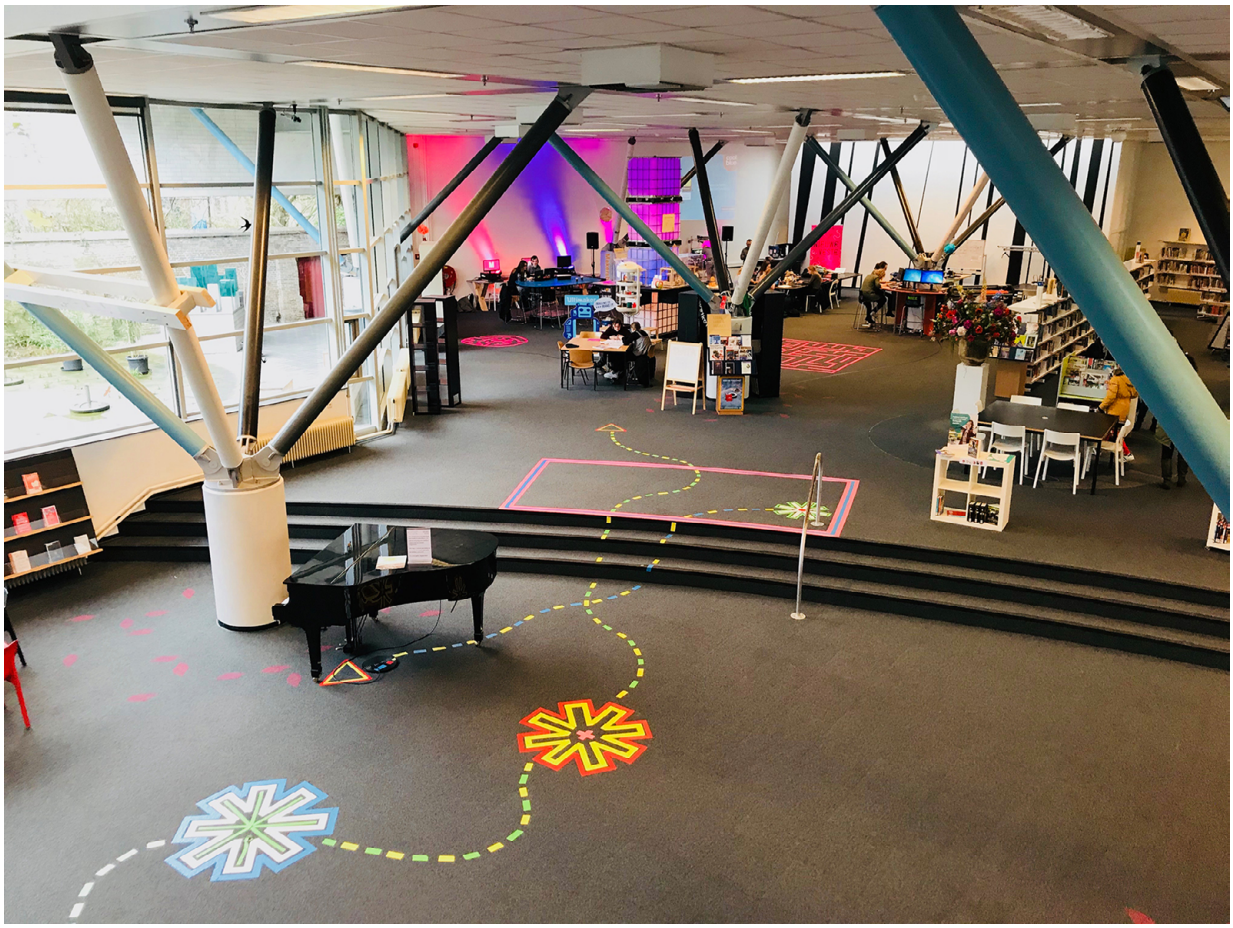


FIG. 5 Interior view of Breda library makerspace. Image: Joran Kuijper.

Both types show pros and cons, the choice depending on the context of the specific library. An open configuration favors the involvement of the overall visitor on occasional base (passers-by), mingle with the library spaces and cross-fertilize with the other functions—in this being more directly part of the public interior of the library. An example can be found in the library of Breda,[28] where the makerspace has variable boundaries towards the surrounding programs and is well-visible and integrated in the building [Fig. 5].

However, an open configuration could also produce more spatial conflicts and it requires more handlings for storage and preparations. A closed configuration has instead stronger boundaries (more or less transparent) and is more rigid in use, as being a space (room) specifically dedicated to the makerspace. This is an advantage for the making activities and the spatial clarity, with little conflicts and a safe storage of equipment. In the case of the Cultuurfabriek[29] at Veenendaal, the FabLab dedicated space is located behind a full-transparent wall that allows for the visibility of activities from the library [Fig. 6]. However, a closed configuration could result in a "lost space" in times of not-operation and is not directly part of the public experience of the library interior. In both cases the relationships between

28 Designed by Herman Hertzberger.

29 Designed by Jos van Eldonk.

FIG. 6 Makerspace at the Cultuurfabriek, Veenendaal. Image: Joran Kuijper.

making and library assume a concrete evidence by the strong presence in the overall cultural programming promoted by the hosting building.

The diffusion of library makerspaces and the confidence for the future of making in the context of the public library shows that the potentialities for developing connections between public culture and public realm through the diffusion of an active participatory attitude of making can be as well realized in ordinary library settings, for they support the renewed public desire and expectation regarding the library offer. However, a number of key-issues presently condition the realization of the desired connections.[30]

The approach to realize a makerspace in an existing Dutch public library is necessarily pragmatic, by which opportunistic strategies must be employed. This means that strong relationships with the public core of the library have a lower priority than the functional aspects, due to space and budget constraints, consequently not always allowing the makerspace/making to fully participate of the public realm. The opportunistic strategy also touches the relationships with the external public space, when the makerspace is hardly visible from the urban space in this constraining the potential of using the makerspace as a public showcase. Furthermore the most makerspaces have a very neutral setting, they are predictable

30 Caso, "Spatial Characters of Fifteen Library Makerspaces in the Netherlands."

and functionally oriented with little contextual specifications. This is also a consequence of the necessary pragmatism for initiating a makerspace in the public library. Finally, the anchoring of the makerspace program in the overall library cultural program is not yet as strong as it could be to exploit the many opportunities as the most libraries are organized in cultural islands.

In the Dutch public library, the transition from consumption to production and towards a shared culture of active participation is in progress, and so is the materialization of the related commons through design. When the socio-spatial trends towards individual empowerment and active cultural participation are recognized as collective common ground, five major challenges can be identified along the path towards future library configurations.[31]

- Libraries will need to work on a further embedment of making in their cultural offer, by realizing a stronger integration and developing better opportunities for remixing cultural options. For this, non-competitive relationships between the makerspace-related spatial requirement and the fruition of the overall library are needed. This could result in different priorities in library (interior) design, in which visibility and showcase effect will need to be carefully considered.
- Libraries will need to improve the relationships between their specific making offers and the local contextual identity (programs but also space/place). The offered making experiences should better adhere to the specific socio-spatial characters and assets of the place they are embedded in. Specificity in place is a tool for the generation of value in context and it is a mean to build community identity.
- Because of the goals that are primary connected to the cultural image of the library institution, making programs tend to prioritize learning and digital literacy in fact giving “fun” and “amusement” a back seats. The risk is of generating a “compulsory” image of making in the context of the public library, which is hardly to be connected to a bottom-up construction of commons.
- Libraries are key nodes in the contemporary cultural infrastructures of cities, for this being centers of diffusion of creativity and innovation. The public library should be better aware of this fundamental role and it should aim to materialize it in their design, taking into account the hybrid nature of contemporary infrastructure, physical-virtual reality, and public space.

31 Ibid., 139–151.

- As making becomes the cultural mainstream, its implications cannot be limited to certain selected areas (fabrication) of confined in a room (an average makerspace) but they should more deeply inform the relationships between people and activities, people and spaces / places, and people among each other. The LocHal provides an example of a next generation public libraries in which making is taken as a common value and a shared culture. What will be the next steps?

Dr. Olindo Caso, architect, achieved his Ph.D. at the Delft University of Technology defending a dissertation on the impact of ICT applications in spatial design. Olindo is part of "Complex Projects" Group (Department of Architecture TU Delft) and coordinates the research group "Architecture and the City." Olindo is engaged in master education and research activities, where Urban Architecture and Hybrid Buildings are guiding themes. Specific interests relate to the architecture of cultural infrastructures and of mobility infrastructure. Among his publications: *Architettura contemporanea: Olanda* (Milan: Motta, 2009) and *ATLAS. Makerspaces in Public Libraries in the Netherlands* (Delft: TU Open, 2019).

References

Abrahams, Tim. "What Culture Is to a City." Architectural Review 239, no. 1427 (January 2016): 3–11.

Anderson, Chris. Makers: The New Industrial Revolution. New York: Random House, 2012.

Bene, Zsofia, Olindo Caso, and Marian Koren. "Le Centre Culturel Rozet Aux Pays-Bas, Un Exemple Réussi de Bibliothèque Intégrée." In Un Monde de Bibliothèques, edited by Julien Roche, 163-169. Paris: Electre—Édition du Cercle de la Librairie, 2019.

Caso, Olindo. "Spatial Characters of Fifteen Library Makerspaces in the Netherlands." In Olindo Caso and Joran A. Kuijper, *ATLAS. Makerspaces in Public Libraries in The Netherlands*. Delft: TU Delft Open, 2019.

———. "The New Public Library as Supportive Environment for the Contemporary Homo Faber." In Olindo Caso and Joran A. Kuijper, *ATLAS. Makerspaces in Public Libraries in The Netherlands*. Delft: TU Delft Open, 2019.

Caso, Olindo, and Joran A. Kuijper. *Atlas: Makerspaces in Public Libraries in The Netherlands*. Delft: TU Delft Open, 2019. http://resolver.tudelft.nl/uuid:9a5b9b6b-0e0e-408a-8cba-d0b22b7c302e.

Cavalcanti, Guy. "Is It a Hackerspace, Makerspace, TechShop, or FabLab? | Make:" Make: DIY Projects and Ideas for Makers, May 22, 2013. https://makezine.com/2013/05/22/the-difference-between-hackerspaces-makerspaces-techshops-and-fablabs/.

Gershenfeld, Neil. "How to Make Almost Anything: The Digital Fabrication Revolution." *Foreign Affairs* 91, no. 6 (2012): 42–57.

Hatch, Mark. *Maker Movement Manifesto Rules for Innovation in the New World of Crafters, Hackers, and Tinkerers*. New York: McGraw-Hill, 2013.

Hvenegaard Rasmussen, Casper, and Henrik Jochumsen. "The Fall and Rise of the Physical Library." Porto, 2009. http://eprints.rclis.org/12925/1/40.pdf.

Jochumsen, Henrik, Dorte Skot-Hansen, and Casper Hvenegaard Rasmussen. "Towards Culture 3.0-–Performative Space in the Public Library." *International Journal of Cultural Policy* 23, no. 4 (July 4, 2017): 512–24. https://doi.org/10.1080/10286632.2015.1043291.

Levien, Roger Eli. *Confronting the Future: Strategic Visions for the 21st Century Public Library*. Washington, D.C.: ALA Office for Information Technology Policy, 2011.

"Makerplaatsen in Openbare Bibliotheken: Onderzoeksresultaten BOP-Enquete Makerplaatsen." Den Haag: Koninklijk Bibliotheek, 2018. https://www.kb.nl/sites/default/files/docs/rapportage_makerplaatsen_2018_def_0.pdf.

Mattern, Shannon. "Library as Infrastructure." Places Journal, June 9, 2014. https://doi.org/10.22269/140609.

Miles, Steven, and Ronan Paddison. "Introduction: The Rise and Rise of Culture-Led Urban Regeneration:" *Urban Studies* 42, no. 5–6 (July 2, 2016): 833–839. https://doi.org/10.1080/00420980500107508.

Oldenburg, Ray. *The Great Good Place: Cafes, Coffee Shops, Community Centers, Beauty Parlors, General Stores, Bars, Hangouts and How They Get You Through the Day*. 1st edition. New York: Paragon House, 1989.

Skot-Hansen, Dorte, Casper Hvenegaard Rasmussen, and Henrik Jochumsen. "The Role of Public Libraries in Culture-led Urban Regeneration." *New Library World* 114, no. 1/2 (January 1, 2013): 7–19. https://doi.org/10.1108/03074801311291929.

Vickery, Jonathan. "The emergence of culture-led regeneration: a policy concept and its discontents," Vol. Research Papers n. 9. Coventry: University of Warwick. Centre for Cultural Policy Studies, 2007. http://wrap.warwick.ac.uk/36991/1/WRAP_Vickery_ccps.paper9.pdf.

Vos, Aat. *3RD 4 ALL. How to Create a Relevant Public Space*. Rotterdam: nai010 Publishers, 2017.

Willingham, Theresa, and Jeroen de Boer. *Makerspaces in Libraries*. Library Technology Essentials 4. Lanham, Maryland: Rowman & Littlefield, 2015.