Building Capabilities Through Democratic Dialogues

Liesbeth Huybrechts, Katrien Dreessen, Ben Hagenaars

Introduction

Designers are increasingly involved in designing alternative futures for urban development and the knowledge economy, together with or self-organized by citizens.¹ This article discusses three challenges: (1) the fact that some (groups of) citizens lack the support or negotiation power to engage in these complex design processes, (2) the need to strengthen their “capabilities” to participate in these processes, and (3) the design of “democratic dialogues” to give form to these capabilities with the involved citizens. The terms “dialogues” and “capabilities” are framed according to a participatory design (PD) approach and—more specifically—in what is called “infrastructuring,” or the process of developing strategies for the long-term involvement of participants in the design of spaces, objects, or systems.² Designers engaging in this approach do not involve one fixed audience; instead, they work with participants who become part of the continuous and changing formation of many publics offering new perspectives on societal issues, in relation to the already formed public.³ In the formation of these publics, the roles between the designers and participants are subject to negotiation.⁴

We discuss these challenges via “Traces of Coal”, a project that researches and together with citizens designs an alternative spatial future for a partially obsolete railway track. The track was built to transport coal in Genk (Belgium), a city that grew rapidly in the first half of the twentieth century, powered by three coalmines. Part of the coal track is still used for transportation, while another part was no longer used after the mines were closed (in 1987). Our design team got the assignment from the regional government to explore a new purpose for this track.

We addressed this issue in participatory ways, by responding to existing social, spatial, and technological infrastructures and by creating new ones—basing our responses and creations on interactions with both small- and large-scale organizations. In this process of tracing existing relations and from that basis further designing relations or “attachments,” designers can support participants and help them to build capabilities for addressing issues using a design process, according to Le Dantec and DiSalvo.⁵ This approach allows participants and designers to develop attachments to (their) issues and agendas. In addition, these capabilities are more sustainable than the design solutions themselves and more transferable to other contexts.⁶ We further explore the process of building people’s capabilities to organize collective discussion using the expressiveness of the design language. The goal is to support them in self-organizing and sustaining (parts of) the design process.

Building capabilities is important in Traces of Coal because it deliberately engages small-scale actors (e.g., amateur sport clubs and community gardens) to co-determine the rules of the design process together with large-scale actors (e.g., international transport companies, large cultural organizations, and city administrations). These small-scale actors often are not included in the design of our cities, but they offer interesting perspectives on how the design process takes form; they slow down the process when it does not follow the same pace as their initiatives, or they are accelerators when they adopt and address certain topics. In this case, the seemingly obvious move would have been to turn the coal track back into a mobility axis for bicycling or for other alternative modes of transport, thus creating a fertile ground for employment and experiencing the city’s landscape. However, major investment costs, the great length of the track,

and the fact that in past years this track escaped the attention of most of the city's representatives and inhabitants obstructed this potential move. The challenge for the designers was thus to design various "democratic dialogues" to trigger the formation of different publics around the issue of the coal track and to enhance the involved actors' capabilities in visualizing, reflecting on, and acting on its potential over time.

Supported by a rich tradition in design literature, this article explores the following questions: "*How do we build capabilities of diverse actors participating in PD and infrastructuring processes? What kind of democratic dialogues enable this formation?*" We answer these questions by conducting a literature review of the terms "capabilities" and "democratic dialogue," by analyzing *how* building capabilities took shape through democratic dialogues in *Traces of Coal* and *which* design tools and roles were used, and by providing a typology of democratic dialogues and how they support building capabilities.

Building Capabilities

As PD is an approach to design artifacts together (e.g., prototyping), infrastructuring processes pay attention to developing capabilities when designing together in the context or community where the instruments and artifacts are placed or used.⁷ The concept of capabilities is based on the approach of Sen and Nussbaum⁸; it refers to the process of building the capabilities of a person, group, organization, or institution to explore a set of predetermined issues, relationships, options, and goals.⁹ Baser and Morgan define the concept on an individual level, using the term "competencies," which are further subdivided into "soft skills" and "hard skills."¹⁰ Soft skills refer to creating relationships, building trust, and establishing legitimacy, whereas hard skills address technological, logistical, and project management skills. The authors refer to collective skills as "capabilities," which are the collective expertise of an organization or system to perform a specific function or process in or outside its own system, enabling the system or the organization to self-organize and sustain itself.¹¹

The discussion on capabilities has a history in design: It began with the concept of design abilities, coined in the late 1970s by Cross.¹² Cross defines these abilities as resolving ill-defined problems; adopting solution-focused strategies; using abductive, productive, and appositional thinking (i.e., designers' speculations about what "might be," which is different from scientific ways of inductive and deductive thinking); and using non-verbal graphic and spatial modeling data.¹³ Although Cross focuses on abilities of individual designers, he stresses that everyone can possess these abilities. He notes that especially in some non-industrial, craft-based societies, the borders between professional and amateur design abilities are blurred; in addition, architecture and planning have paid great attention to these blurring borders via design participation and community architecture.¹⁴ Meanwhile, Friedman, like Cross, describes the capabilities from the perspective of the individual designer and her or his different roles: the designer as analyst, synthesist, generalist, leader, and critic.¹⁵

Some authors have linked the discourse on capabilities more explicitly to the collective design process in which non-designers are involved. For example, Dong explores capabilities to conceptualize a policy of design that supports citizens as they engage with the planning and design of public works.¹⁶ His exploration is driven by a concern for a lack of social and political public engagement in design that he sees as necessary for the nurturing of public health and social capital. People should be able to address the complex issues that are at stake in urban design, architecture, public health, and lifestyle and in the establishment of a civic identity, says Dong; the design policy he describes does not necessarily seek to make every citizen *do* design—referring to Cross's "capability to design"—but instead develops citizens' capability to design in the spirit of Nussbaum, who proposes necessary *conditions* for designing.¹⁷ Building on her work,

Dong writes about the separate capabilities needed to with information, knowledge, abstraction, evaluation, participation, and authority (or the right to enact design work).¹⁸ While Dong isolates participation as a separate capability, authors working in the domains of PD and planning have interwoven the capability of participation with the capabilities of information, knowledge, abstraction, evaluation, and authority in a design process.¹⁹ Based on these different strands of literature, we distinguish three different clusters of capabilities in PD processes:

1. Building capabilities can be read as unidirectional (i.e., the builder in relation with the one who is “*built*”); however, in democratic PD processes, different visions meet, although not necessarily in consensus. Therefore, design teams work consciously with citizens to enhance their capabilities to collectively *visualize their different views on matters of concern in their city*. Dong calls this capability the ability to deal with information, and Cross refers to the ability of participants to use non-verbal, graphic, and spatial modeling.²⁰ Le Dantec and DiSalvo indicate that visualizing and recognizing differences is a starting point for designers and citizens to find new connections and perspectives.²¹
2. Designers and citizens learn to *reflect* together on these matters of concern, based on the confrontation between different views.²² In Dong’s work, such reflection involves the capabilities of knowledge, abstraction, and evaluation²³; as Cross notes, such work is an abductive, productive, and appositional endeavour that is speculative in nature.²⁴
3. Building capabilities in PD can enhance the confidence of designers and citizens in their capability to *take collaborative action* in relation to reflections, using the language of design.²⁵ This capability is linked to Dong’s description of the capability of authority.²⁶

For the support of citizens who self-organize and intend to sustain a design process, capabilities can be acquired that help to form publics and that enable the citizens to collectively *visualize*, *reflect*, and *act* on certain matters of concern. This process is not necessarily chronological or consensual but makes use of the diverse and expressive language of design.²⁷

Democratic Dialogues

Building further on the definitions of capabilities, we offer insights into *how* PD processes build these capabilities, focusing on the notion of democratic dialogue.²⁸ This concept is intimately linked with the Scandinavian tradition of PD and means that everyone who is affected by a design process has the opportunity to control or direct the conversation.²⁹ As Cross notes, these dialogues can be verbal, but they often are materialized through various media and technologies (e.g., scenarios, conversational tools, and interactive installations).³⁰ Democratic dialogues thus can support PD practitioners in building capabilities as a multidirectional, “collective” process between diverse designers and participants. Drawing on the design literature, we identify different types of democratic dialogues, corresponding to the three clusters of capabilities already described.

Visualization

The collective *visualization* of existing attachments to issues of public concern is accomplished by two rather opposite practices: the strategic dialogue and the connecting dialogue.

- The *strategic dialogue* is a democratic way of dialoguing in participatory processes; in it the designer plays the role of a catalyst who democratically but strategically aligns the views of various participants with each other to develop alternative exchanges around a topic.³¹
- The *connecting dialogue* refers to visualizing and strengthening the (underlying) relationships within certain communities that deal with particular and generating new

relations in this community. This activity of uncovering, strengthening, and creating relationships is related to the role of the designer as a trigger of publics.³²

Reflection

To address the capability for collective *reflection*, the questioning and agonistic dialogues emerge:

- The *questioning dialogue* is related to the designer as activist, who aims to initiate change and create a “better future” by entering into dialogues that reveal the status quo by creating dissent.³³ In infrastructuring, the designer as activist rarely acts *against*, but rather *with* or *from within* communities and public and private institutions.³⁴
- In infrastructuring processes, alternative and even contradictory voices meet over longer periods of time. In this case, the designer has to act as a matchmaker who brings participants’ alternative voices together in tangible ways, while encouraging *agonistic dialogues* that make visible the doubt and disagreements in issues (e.g., power imbalances).³⁵

Action

Finally, a rich discourse is needed on how capabilities can be built to allow participants to *act* together in design processes via expressive dialogues.

- The co-designer organizes *expressive dialogues* that support participants designing together by providing them with tools for democratic ideation and expression.³⁶ Co-design processes support collective creativity and mix the roles of designers and participants.³⁷

This literature overview forms a typology of how the three clusters of capabilities are supported through democratic dialogues in PD processes and how the different dialogues relate to the roles and activities of the designer. This typology mainly explores the social characteristics of building capabilities (i.e., capabilities and dialogues). Analyzing the data generated by Traces of Coal provides additional insights into the materials used (e.g., tools and spaces).

Traces of Coal

Traces of Coal is a Belgian, regionally funded project in which a multidisciplinary design team had about 16 months (September 2016 – December 2017) to give form to alternative futures for an underused railway track. The design team, comprising an architectural firm, a landscape architectural office, and our own architectural and interaction design research groups, was supported by a working group committee that included the director of technical services and a civil servant of the department of spatial planning and housing of the city; a professor in participatory spatial planning; a civil servant of the regional spatial planning department; and the director of the art center Z33.

Because Traces of Coal involves a design research process, the democratic dialogues were intended to reveal and develop human capabilities in addressing both the social and the material potential of the spatial context. The process focused on small-scale organisations but also engaged large-scale actors and the designers themselves as participants. The study used qualitative research methods, such as design interventions, co-design workshops, mappings, and interviews, in combination with quantitative data collection methods, such as data mining. The case analysis is based on a thick description of the collected data, different ways of clustering these data, and comparing and questioning these ways of clustering by the four main researchers in the process. Based on the data analyzed, in combination with the literature already described, we defined a typology of the five different democratic dialogues and identified how these dialogues supported

the capability-building process in Traces of Coal. To simplify the reading, we refer to the small- and large-scale actors as “participants” and call the design researchers and architects “designers.”

The strategic and connecting dialogues focus on addressing the capabilities of designers and diverse participants in *visualizing* matters of concern in participatory ways.

Visualizing: Strategic Dialogue

The first and recurrent dialogue in Traces of Coal was strategic in nature, with a strong focus on expert and professional design research activities and on addressing the participants in their expert role. The designer took on the role of a catalyst who professionally visualizes and connects different agendas and stimulates diverse participants in their professional capability to make new connections between the material (e.g., previous studies and field data) and human elements (e.g., policymakers and private organizations) of the study. This *strategic dialogue* primarily took place in the working group committee and during a prestigious exhibition. First, monthly meetings with the working group and fellow researchers were organized to discuss the research progress; they discussed maps and relevant quantitative and qualitative data (i.e., historical facts, uses, and material infrastructures of the coal track) and aimed at creating more insights in and debate around the existing agendas related to the track. The capabilities of the designers in their role as catalysts were constantly challenged by other experts in policy, architecture, and research. At times this challenge caused breakdowns when new members were added to the committee who had not followed the course of the design process, and at times it required resharpening the dialogue. To illustrate, when the study was presented to the mayor, the data from the first field encounters with small-scale actors conflicted with his ambitions in relation to technological innovation in mobility and energy. As a result, the relations between small- and large-scale ambitions were redefined in a new policy document. Second, during the exhibition, the strategic dialogue mainly focused on an experience-rich representation of the research data to an expert audience in the domain of architecture. Here, a paper atlas visualized the research, complemented with an online 360-degree visualization that allowed visitors to experience the track and explore fieldwork videos (see Figure 1).

Figure 1

In Traces of Coal, the designer as catalyst thus has engaged in a strategic dialogue to align the interests of the different designers and participants, who in this dialogue are often professionals. Specific professional capabilities are developed in the visualization of historical insights, of the research data, and by the creation of links between these insights and data. The tools used for this purpose are professional (e.g., policy documents), experience-rich, and rather high-tech, including physical and digital cartography, such as a paper atlas, professional architectural maps, and high-tech mapping tools.

Visualizing: Connecting Dialogues

In Traces of Coal, we also took on the role of being a “trigger of publics,” engaging in and engendering *connecting dialogues* to reveal connections in the community and develop them further. These dialogues were intended to build relationships with potential participants by using a photo-ethnographic approach to collect and document the individuals (and their initiatives (e.g., informal ostrich farms)) who already work and live along the track. The design team drove a cargo bike along the track and invited the people they met to use a do-it-yourself (DIY) printing press to create a poster that would visualize their initiative and talk about their capabilities in changing the environment around it. For instance, during one of the interventions, the design team

met Muzaffer, a person who established a football canteen beside the track. He created a poster with the word “captain,” which expressed his capabilities as a team captain in bringing together local youth from diverse socio-economic backgrounds. The poster can be seen as a summarizing note of the conversation we had with him about his relation to the track. Later, he not only was informed about the progress of the project but also was invited to participate in follow-up workshops, based on his particular capabilities and (geographical) relation to the track. Thus, we asked all people who we encountered along the track to talk about their capabilities using a poster, and we documented the encounters using photographs and video. The posters were made visible in Genk (the city) when the participants shared the posters both in their work or living spaces and online on our platform (see Figure 2).

Figure 2

The designers’ role of “trigger of publics” thus calls for engagement in committing dialogues that reveal underlying relations in the community with the track and that develop them further into new constellations. These dialogues took place during 10 cargo bike interventions in which approximately 50 conversations were initiated with anyone with whom the research team came into contact. These participants also were asked to commit to engage in follow-up workshops. The space alongside the track was populated primarily by male citizens between 45 and 70 years old. To guarantee diversity, we explicitly invited some female and younger actors from different cultural communities to meet us on the track, with the support of local community managers. Committing dialogues address the capabilities of different actors to visualize how they can use their own capabilities to further develop spatial infrastructures. To allow spontaneous interactions in public space, we used low-tech tools: interventions with the DIY-printing press, photographs, and audio interviews.

The questioning and agonistic dialogues address the capabilities of designers and participants in collectively *reflecting* on the visualized matters of concern in more speculative ways in Traces of Coal.

Reflection: Questioning Dialogues

Early in the process, the design team engaged in *questioning dialogues*. Certain members of the team took on an activist role, questioning the status quo around the coal track. This role was carried out during the interventions with the cargo bike in which the design team and the participants they encountered talked about their capabilities. They partly reported on the participants’ activities along the track but also speculated about what their capabilities could mean for the track in the future. The design team also speculated on the future in cooperation with the same participants in four thematic workshops, based on an initial clustering of the collected individual narratives in nature/food, energy, mobility, and materials. In these workshops, participants connected their different individual narratives into a collective narrative, which served as a speculation about possible joint initiatives to define the future of the track. In one collective narrative, participants who engaged with the theme of nature described the potential of connecting their individual capabilities in a so-called nature workstation:

(...) a diverse ecological project that is economically self-sufficient by making new connections locally. It connects existing nature parks together with technology experimentation and uses residues and by-products of these areas—such as fish production—to strengthen the economic and social dimensions (workshop group nature, February 24, 2016).

This narrative was spread publicly to start debate about the project.

In *Traces of Coal*, questioning dialogues were initiated by the design activist, who questions the common knowledge and practices concerning the track. Speculative narratives show the potential of joint initiatives and support designers and participants in building capabilities to collectively reinterpret the past and present toward the future. The workshops involved 40 participants who engaged in the cargo bike interventions, 6 design team members, and 5 working group members. The narratives were shared with a large and diverse group of people using a set of tools; postcards and posters with the speculative narratives were printed and shared in different public venues, in the workspaces and homes of the participants, in an online digital map that included podcasts of these narratives, and in other social media through which the narratives were shared.

Reflection: Agonistic Dialogues

The data of *Traces of Coal* showed that, through their role of matchmaker, the designers engage in *agonistic dialogues* with different actors who have an interest in the coal track by confronting these actors with what was surfaced during the strategic and connecting dialogues. This confrontation is aimed at revealing tensions and is carried out in the physical space of the Living Lab's De Andere Markt [The Other Market] and via an online map. De Andere Markt was launched in 2015 by the University of Hasselt, the LUCA School of Arts, and the city of Genk to develop a continuous dialogue addressing the future of work in the city through various projects. The Lab serves as an informal public meeting place for people and an incubator for small-scale actors. In this space and on a digital map of the coal track, the design team exhibited and visualized the collected narratives during the research, so that each would be in conversation with the others (see Figure 3).

Figure 3

As matchmakers, the designers enter into an agonistic dialogue, aimed at developing the reflective capabilities of both participants and designers. The participants addressed in this dialogue were those who shared their agendas in relation to the coal track during the project, but also included in it were more than 500 different “outsiders” who visited the lab during the project period. The specific capabilities of the designers and participants involved, were being able to read and work with a diversity of (un)known agendas related to the track. The tools used—the changing exhibition and the online mapping tool—helped to visually match different agendas to trigger further speculation.

Action: Expressive Dialogues

After a more speculative phase, 5 designers, 40 protagonists in the narratives, and 35 experts in the fields of energy, technology, nature, mobility, and governance gathered for another series of workshops. In the two one-day workshops, they acted as co-designers via *expressive dialogues* to design futures for the track. For instance, one of the participants was a well-known entrepreneur who manages a truckstop alongside the track, and another participant was a local expert in composting. All participants were invited by the design team because they were portrayed during one of the interventions, and they took part in the workshop on a voluntary basis. Each workshop took place at De Andere Markt and ended with a reception prepared by and with the products of the people who were collected in the narrative on nature workstations (e.g., a farmer, a beekeeper, and a cook/social worker). The participants collaboratively reviewed and redesigned the

individual and collective narratives together and envisioned the future of the track as an axis where small-scale actors are connected with each other and with others and where they share their capabilities in, again, new collective forms. The group formulated a shared challenge: to collaborate in creating a landscape in which living and working productively coexist. In a first round, four groups of participants explored the speculative stories of big and small, public and private, old and new publics to demonstrate the diverse landscape on which possible future trajectories could build. Each group received a collective narrative, consisting of some individual narratives and a specific area of the coal track, visualized on a carpet (see Figure 4). This carpet offered some starting points: a map of the track, pieces to add to the map, scissors, and chalk to write with. Each group took one fourth of the carpet to their table, allowing them to redesign their speculative story based on their experience, knowledge, and specific spatial area. In a second round, the four areas were arranged together again, to discuss the track as a whole and to connect the different narratives. This umbrella vision gave opportunity to debate the coexistence of these different narratives and to see where and how they conflict with or reinforce each other. In a final workshop of two weeks, a “pop-up village” was built to prototype the ideas in real life on the track to allow an even bigger variety of publics to engage with them.

Figure 4

Traces of Coal showed how designers can take on the role of co-designers to support people to enter in expressive dialogues. Participants are selected based on their relation to an issue (e.g., the productive potential of nature) and are assembled in teams to explore it further. The participants explore capabilities for collectively acting out or expressing themselves in an expressive language (e.g., image, sound, story) and for dealing with their openness to changing the language. The used tools can be touched, changed, and built to *make* alternative futures, such as a map shaped as a carpet.

Based on the data analysis of Traces of Coal and the literature, Figure 5 summarizes the capabilities that the designers and participants exercised and developed during the infrastructuring process and how these capabilities took shape through democratic dialogues, design roles, and tools.

Figure 5

Discussion

After 16 months, Traces of Coal formulated several collective narratives on which design projects for the track could build. Following this type of work, augmenting the capabilities of designers and diverse groups of citizens (small-scale actors, in interaction with large-scale actors) becomes important to collectively turn these—still speculative—narratives into reality or to counter less desirable solutions with new narratives. This need motivated us to examine the existing design (historical) literature on capabilities and to develop a typology for building capabilities in PD and infrastructuring processes in urban contexts. By demonstrating the diversity of capabilities, roles, dialogues, and tools in the case study over time, we make apparent the political and time dimensions of the design process; in this work, design is not represented as a success story with a clear beginning and end and with clear roles. Instead, the typology shows how people gather and form diverse and changing publics over time, dealing differently with a broad range of (conflicting) agendas using different capabilities, roles, and tools. We discuss three challenges that are raised by intertwining the formation of capabilities with infrastructuring processes.

Capabilities are easily discussed in a general or volatile manner, partly because they are difficult to grasp and to support during the design process. Therefore, efforts to make explicit the different capabilities and the ways they can be supported in design processes is important. Our *mapping of capabilities* in Traces of Coal and their link to dialogues, roles, and tools provides some landmarks for designers and participants involved in PD processes. For example, taking part in strategic dialogues allows designers and participants to build capabilities in collaboratively visualizing and aligning agendas to meet project goals. Engaging in speculative questioning and agonistic dialogues enables people to build capabilities in productively disrupting strategic conversations (and timelines) by materialising “what ifs” when design processes move too quickly toward solutions.

Capabilities are often interpreted in relation to a narrow definition of the designers’ role: The co-designer relates to the expressive capabilities or the design activist to reflective capabilities. Traces of Coal showed that *different roles* develop in the same design process, via *different types of dialogues* and *exploiting different capabilities and tools*. If the goal is to set up an infrastructuring process in which tools are developed and relationships are built for (groups of) citizens to take control of the design process, one recommended approach is to consciously tap into this diversity of capabilities by involving them in a variety of dialogues.

Building capabilities also is often associated with a one-way process from the designer toward citizens. In contrast, in Traces of Coal, both the design team and the representatives of large-scale organizations *learn*—for example, in the former by developing expressive tools that match the subject matter and in the latter, by having to resolve the conflict with the mayor who had a different vision on the future of the track and wanted to steer the outcome of the research in that direction. Diverse actors thus build capabilities to develop and shape the process in its *multidirectional complexity*. Related to Dong’s aim to support citizens to engage with the planning and design of public work, Traces of Coal set the conditions for designers and citizens to learn to address the complexity of the spatial issue.³⁸

To support democratic dialogues that place capabilities at the core of the Traces of Coal design process, a variety of tools were developed that offered different affordances (e.g., the 360-degree visualization versus the easily adaptable online map of the track). The project strengthened our viewpoint that in the *development and transfer of technologies*, we need to create explicit relationships between the tools and the capabilities, dialogues, and roles. Rather than the technology, these *relationships* form the infrastructure of a PD process, allowing people to take charge of the design process themselves.

Conclusion

Designers often engage in complex participatory processes with the naive technocratic idea that they can easily provide (groups of) citizens with tools that allow them to self-organize and design their future. However, the challenge in these processes lies also in further developing the capabilities of these citizens, allowing them to gain more agency in negotiating with each other and large-scale actors and to continue (aspects of) the design process independently. This article, building on existing literature, describes the capabilities that are needed in these processes. Through the data analysis made possible by the Traces of Coal project, we have elaborated on this literature and articulated how these capabilities are specifically formed in urban PD processes through democratic dialogues—an approach that traditionally is used in this field to involve participants. The case also shows how a variety of tools have contributed to this capacity-building process, including a DIY printing press and a 360-degree installation.

This article is a plea for the more conscious inclusion, recognition, and formation of capabilities in complex (participatory) design projects, and it provides researchers and designers

with a typology to engage in these processes. It also is a modest invitation to start a debate on capabilities, given that the typology presented here is based on a specific question and context that leaves many dimensions of the tools, roles, dialogues, and capabilities un(der)addressed.

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²² Gordon and Baldwin-Philippi, "Civic Learning Through Civic Gaming, Community PlanIt and the Development of Trust and Reflective Participation," *International Journal of Communication* 8 (2014): 759–786.

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³² Le Dantec and DiSalvo, "Infrastructuring and the Formation of Publics in Participatory Design," p. 254.

³³ See, e.g., Alastair Fuad-Luke, *Design Activism: Beautiful Strangeness for a Sustainable World* (London: Earthscan, 2009); and Carl DiSalvo, "Design, Democracy and Agonistic Pluralism," in *Proceedings of the Design Research Society Conference* (2010): 366–71.

³⁴ Tau Ulv Lenskjold, Olander Sissel, and Joachim Halse "Minor Design Activism: Prompting Change from Within," *Design Issues* 31, no. 4 (Autumn 2015), p. 78.

³⁵ Chantal Mouffe, *On the Political* (Abingdon: Routledge, 2005).

³⁶ Elisabeth B.N. Sanders and Pieter Jan Stappers, "Co-creation and the New Landscapes of Design," *Co- design* 4, no. 1 (2008): 5–18.

³⁷ Ezio Manzini and Rachel Coad. *Design, when everybody designs: An introduction to design for social innovation* (Cambridge: The MIT press, 2015), p. 48-50.

³⁸ Dong, “The Policy of Design,” p. 82.