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Christian Nold
The Open University

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MAPPING AND SENSING DEWEY'S SITUATIONS AS DESIGN AND SOCIAL SCIENCE METHODS

CHRISTIAN NOLD

THE OPEN UNIVERSITY, UK

CHRISTIAN.NOLD@OPEN.AC.UK

ABSTRACT

This exploratory paper proposes the use of pragmatist philosophy as a methodological bridge between design and the social sciences. It develops John Dewey's ecological notion of the 'situation' into two design methods for mapping and sensing situations. The first method, called 'mapping situations' is based on Adele Clarke's concept of 'situational mapping' and aims to pinpoint actor relations, concealed power dynamics, and areas for intervention. The second method, 'sensing situations' helps to develop a deeper understanding of a situation through embodied experience. The combination of these cognitive and affective methods offers a holistic approach to deal with complexity and ambiguity. The potential of these methods is to use Dewey's situation as a shared unit of analysis that allows designers and social scientists to work together and address problems in new and innovative ways that go beyond the limits of their respective fields.

INTRODUCTION

The work of the pragmatist philosopher John Dewey has had a significant influence on the field of design (Dalsgaard, 2014). It has been used to explain the nature of design as in Donald Schön's writing on 'the reflective practitioner' (2016), to explore experience in design (McCarthy and Wright, 2004), and to position

pragmatism as the "natural epistemological base" of design (Melles, 2008, p.5). In recent years, pragmatism has experienced a resurgence across many disciplines and may offer the potential to bridge the gap between design and other disciplines. Yet, despite Dewey's influence, there have been few attempts to translate his ideas into concrete design methods (Stompff, van Bruinessen, et al., 2022).

This exploratory paper responds to the need to develop Dewey's work into explicit methods for designers as well as Wegener and colleagues' (2022) call for critical engagement with Schön's 'design inquiry'.

The paper focuses on Dewey's concept of the 'situation' and the 'situational analysis' method developed by Adele Clarke (2005) to look for common ground between design and the social sciences. It proposes mapping and sensing situations as holistic alternatives to the established notion that situations need to be conversed with or framed. The paper argues that via these methods, Dewey's situations can create a space for new interdisciplinary collaborations across design and the social sciences.

WHAT IS A SITUATION?

John Dewey articulates the notion of situations in his book *Logic: The Theory of Inquiry* (1938), where he suggests that all research, or inquiry as he calls it, takes place within situations. Inquiry in Dewey's terms is a form of problem solving with a goal of shifting from an indeterminate to a determinate situation. The situation is thus the broader problem space that inquiry operates in.

"What is designated by the word 'situation' is not a single object or event or set of objects and events. For we never experience nor form judgments about objects and events in isolation, but only in connection with a contextual whole. This latter is what is called a 'situation' (Dewey, 2008, p.72)."



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Dewey's notion looks like the common-sense notion of 'context', yet he has in mind something more specific:

"In actual experience, there is never any such isolated singular object or event; an object or event is always a special part, phase, or aspect, of an environing experienced world—a situation. The singular object stands out conspicuously because of its especially focal and crucial position at a given time in determination of some problem of use or enjoyment which the total complex environment presents. There is always a field in which observation of this or that object or event occurs (Dewey, 2008, pp.72–73)."

Situations only exist in relation to the inquiry and do not exist independently. Scholars have described Dewey's notion of situation like an environment that an organism lives within and interacts with, but is also mutually constituted by (Brown, 2012). Situations thus envelop the researcher alongside a heterogenous mix of humans and nonhumans, physical objects, ideas, discourses, and settings that all together form the situation. This definition has proved difficult for some scholars who have questioned how it is possible to define the limits of a situation, and whether this means that a situation includes the whole world (Brown, 2012, p.268). Yet, for Dewey situations have clear limits which are set by the relevance and causation of elements.

"Situations are agent relative and practice relative. They depend on the needs and abilities, habits and activities of the agent or agents engaged in a certain kind of practice. What counts as relevant will be (at least partially) a normative question, dependent on the nature of the practice or activity in question and what things are proper to the practice or activity (Brown, 2012, p.273)."

This means there are no predetermined elements or scope of a situation. The range of elements and extent of the situation can only be defined by the researcher in relation to the specific inquiry.

While this definition of a situation may appear vague and unsatisfactory, its usefulness is that it places the onus on the researcher to empirically identify the heterogenous elements that are affecting the inquiry and forming the situation. Thinking in terms of situations means searching for all the things that matter, such as human sensation and nonhuman objects but also looking for discourses, and agendas that are not immediately observable. The researcher and their own agenda are actively involved in the situation and impossible to remove.

DESIGN AND SITUATIONS

How can Dewey's situations be used in design? Most of the design research on Dewey has focused on design

inquiry's epistemic capacity, while the unique potential of the situation itself has been somewhat neglected.

Schön describes design as a 'conversation with the situation' (Schön, 1992), where the designer enters into an iterative process that, "shapes the situation, in accordance with his initial appreciation of it, the situation 'talks back,' and he responds to the situation's back-talk." (Schön, 2016, p.79). For Schön this conversation involves translating the complexity of the situation into a simplified problem that can be addressed by design materials such as cantilever beams as in one of his architectural examples (1984). Schön and many other researchers have described this as 'framing' which means "imposing a framework on a complex situation by naming 'how the situation is seen' (Stompff, Joosten, et al., 2022, p.4)".

Dorst suggests, that "if the problem situation is familiar, and the designer has dealt with such matters before, a frame will be an integral part of the way the designer is 'reading' the situation, and will come to mind straight away (2011, p.527)". While in more complex situations the designer reframes the problem in relation to the agendas of their client. The result being "an accepted brief that is understood and agreed upon, [...] in which the designer's and client's frames have come to overlap or align to a certain extent (Paton and Dorst, 2011, p.575)".

Yet, my proposition is that this approach to situations as something that can be 'conversed with' and 'framed' are flattening the potential of Dewey's situations. Brian Dixon highlights Dewey's warning that accepting a particular idea outright can prematurely 'cut' the inquiry short (Dixon, 2020, p.78). What can be lost is the nuance and potential of the situation to surprise the designer through its heterogeneous mix of actors and the impetus to go beyond what was known before entering the situation.

SITUATIONAL ANALYSIS IN THE SOCIAL SCIENCES

Adele Clarke is a contemporary sociologist who has used Dewey's notion of the situation to develop the method of 'situational analysis' (2005). The method is a form of postmodern grounded theory that blends Dewey's situations with symbolic interactionist interpretive frameworks, Foucauldian discourse analysis and Actor-Network Theory's focus on nonhumans. The goal of the method is to deal with complexity in research without false reductionism or chaotic ambiguity. The method has proven popular within the social sciences and been accepted as a useful way of bridging across social science fields.

The distinctive aspect of this method is its focus on heterogenous human and nonhuman actors which it derives from Dewey's situation as its core unit of analysis. This is unusual in the social sciences, which

usually focuses on predetermined human actors and social relations.

Situational analysis includes three types of maps: situational maps, social worlds/arenas, and positional maps. The first stage of creating a situational map involves creating a ‘messy map’ which “lays out all the major human, nonhuman, discursive, historical, symbolic, cultural, political and other elements found in the research situation of concern **as framed by those in it and by the researcher** (Clarke, Washburn and Friese, 2022, p. 10 emphasis in original)”.

Clarke suggests the criteria for what elements to include on the map are: “who and what are in this situation; who and what matters in this situation; and what elements make a difference in this situation (Clarke, 2005, p.87)”. The goal is to create a comprehensive overview of all the elements involved in a situation, and to organise them into an ‘ordered situation map’ that places the elements into these categories:

“INDIVIDUAL HUMAN ELEMENTS/ACTORS e.g., key individuals and significant (unorganized) people in the situation, including the researcher

COLLECTIVE HUMAN ELEMENTS/ACTORS e.g., particular groups; specific organizations

DISCURSIVE CONSTRUCTIONS OF INDIVIDUAL AND/OR COLLECTIVE HUMAN ACTORS as found in the situation

POLITICAL/ECONOMIC ELEMENTS e.g., the state; particular industry/ies; local/regional/global orders; political parties; NGOs; politicized issues

TEMPORAL ELEMENTS e.g., historical, seasonal, crisis, and/or trajectory aspects

NONHUMAN ELEMENTS/ACTANTS e.g., technologies; material infrastructures; specialized information and/or knowledges; material ‘things’

IMPLICATED/SILENT ACTORS/ACTANTS as found in the situation

DISCURSIVE CONSTRUCTIONS OF NONHUMAN ACTANTS as found in the situation

SOCIOCULTURAL /SYMBOLIC ELEMENTS e.g., religion; race; sexuality; gender; ethnicity; nationality; logos; icons; other visual and/or aural symbols

SPATIAL ELEMENTS e.g., spaces in the situation; geographical aspects; local, regional, national, global spatial issues

MAJOR ISSUES/DEBATES (USUALLY CONTESTED) as found in the situation; and see positional map

OTHER KINDS OF ELEMENTS as found in the situation

RELATED DISCOURSES (HISTORICAL, NARRATIVE AND/OR VISUAL) e.g., normative expectations of actors, actants, and/or other specified elements; moral/ethical elements; mass media and other popular cultural discourses; situation-specific discourses (Clarke et al., 2022, p.12).”

These structured categories are intended to help analyse the nature of the situation and to identify power dynamics and excluded elements that Clarke calls ‘implicated’ or ‘silent’ actors. Clarke and colleagues highlight that this foregrounds multiple ways of knowing and supports “feminist, participatory, decolonizing, Indigenous, (post)colonial and related research (2022, p.21)”. The last step in the map is to draw connections between elements to see how they relate:

“Center on one element and draw lines between it and the others and **specify the nature of the relationship by describing the nature of that line**. One does this systematically, one at a time, from every element on the map to every other (Clarke, 2005, p.102 emphasis in original).”

For social scientists, the goal is to externalise their understanding of the situation. This allows them to reflect on the relationships they identified and plan the next stage of research.

MAPPING SITUATIONS

My proposition is to integrate Clarke's situational analysis into design by focusing on the situational map. Among Clarke's three mapping techniques, this is the one that aligns most closely with Dewey's notion of the situation and is most pertinent to design due to its straightforwardness. Although this method has not yet been practically employed in design, it presents significant potential for approaching situations in a nuanced way. The technique makes it difficult to conceive design artifacts as isolated and self-contained entities. According to Kaszynska and colleagues, Clarke's approach leads to a networked, ecological, and systemic design practice (2022).

A systemic perspective is not in itself novel in design, where designers regularly employ systemic visualization and mapping techniques like giga-maps (Sevaldson, 2011) and synthesis maps (Jones and Bowes, 2017). Giga-mapping for example aims to create a visual representation of the complexity of a situation:

“[Giga]maps try to grasp, embrace and mirror the complexity and wickedness of real life problems. Hence they are not resolved logically nor is the designerly urge for order and resolved logic allowed to take over too much and hence bias the interpretation of reality. (Sevaldson, 2011, p.138).”

However, the mapping situations approach is distinct in that it does not seek visual complexity for the sake of complexity, but instead emphasises meaningful relationships between elements. The key focus is on analysing which elements are impacting one another, thereby providing insights into power dynamics. It is essential to pay attention to silent actors who have been deliberately excluded. The structured categories help to introduce entities such as collective actors, discursive constructions, and political elements that are typically not part of the designer's vocabulary or way of thinking. This approach may assist designers in engaging with situations in novel ways, moving away from solutions based on objects and towards more multi-layered and multi-sited design interventions. The method presents new kinds of actors and new sites where design could be implemented.

Situational maps also require the researcher to include themselves in the map enhancing reflexivity of the process and asking the designer to highlight their own capacities for transforming the situation with which they are engaged. In this way this method addresses one of the main limitations of current systemic mapping approaches where visualisation often becomes a static endpoint (Nold, 2021). In a design context, situational maps become a methodological tool for changing the world.

SENSING SITUATIONS

The second method I want to propose for engaging with Dewey's situations is to encounter and sense them.

Dewey (2008) suggests that the situation is not in the mind but something that is embodied and must be 'sensed' or 'felt' as a 'qualitative whole'. Schön interprets this as the designer feeling like they are in 'the zone' (2016, p.54), much like Csikszentmihalyi's notion of flow (2013). However, I argue that the potential for situations to surprise and disrupt the designer is not adequately captured in the notion of flow. In order to recognise the disruptive potential of situations requires them to be treated less naturalistically as something unknown and more 'alien'. Brown notes that:

"A situation is experienced but is not a subjective state, situations include real objects, events, agents, their relations, the background on which all of those things appear, and a qualitative, experienced, or experienceable qualitative unity (Brown, 2012, p.269)".

Situations involve tangible, material entities that the designer must encounter sensorially to comprehend. I suggest that situations must be intentionally encountered with the body in a visceral manner. This can be formalised into a design method by adopting ideas from 'soma design' (Höök, 2018) and performative theatre and radical clowning techniques (Sørensen, 2015) to establish a bodily connection with the situation.

I present a vignette of a two-week workshop where a group of approximately ten designers collaborated on the theme of prototyping for disability in the city. Although Dewey was not discussed during the workshop, the approach I adopted as one of the two design mentors was centred on a pragmatist understanding of the situation.

At first, the group of designers were stuck not knowing how to engage with the complexity of the disability topic and the scale of the city. It took the team a long time and help from the mentors to move beyond the initial problem framing. What helped, was encouraging the team to play a range of improvisational trust games that explored each other's physical and emotional constraints and boundaries. This allowed the team to focus on their relations and differences and situate the topic of disability with their own bodies. The final prototype took the form of a staged public event inside a gallery environment, where members of the public were invited to experiment with their perceptions of ableness. Participants explored multiple zones to play ball games while blindfolded, walk through narrow ball pits and room-scale installations where they encountered sound and light sensations.

During the design process, the sensory techniques had operated as a 'situating strategy' (Gedenryd, 1998, p.155) that allowed the team to explore the situation and identify what was important. The use of the radical clowning techniques encouraged the team to 'feel' beyond the individual body and connect with the interpersonal relations in the group and the wider cultural and political framings of disability to explore public embarrassment and insecurity.

At the end of the project, the design team mentioned that the process had been transformative for them. Their design training had not prepared them for these kinds of unfamiliar design situations and the process of 'sensing' had helped them to translate the abstract and challenging concept of 'disability in the city' into something they could design with.

DISCUSSION

This paper proposes two ways of using Dewey's concept of a situation that differ from the established notions of a 'conversation with the situation' (Schön, 1992), or 'framing' the situation (Dorst, 2011).

'Mapping situations' identifies heterogenous actor relations, concealed power dynamics, and areas for intervention into a situation. 'Sensing situations', encourages designers to establish a bodily connection with the design situation. Combining these approaches allows the designer to become sensorily attuned to the situation while engaging with the mix of materials, discursive constructions, and exclusions. The result is a

holistic method that integrates cognitive ‘mapping’ and affective ‘sensing’. Unlike established design approaches to Dewey’s situation, the designer does not have total control to frame the situation as they wish, since the complex situation is never fully knowable. Instead, these methods help designers to deal with complexity and ambiguity by sensing and mapping to affect and be affected by a situation.

The aim is not to replace existing design approaches but to operate somewhat like ‘probes’ (Gaver et al., 1999) at the ‘fuzzy front end’ (Sanders and Stappers, 2008) of the design process, which is characterised by uncertainty and ambiguity. Then existing design approaches and methods such as stakeholder-driven, critical design and service-design approaches can be used for prototyping and implementation.

On a deeper level, the advantage of these methods is that they create a shared space for collaboration between design and the social sciences based around pragmatist philosophy. Dewey’s ‘situation’ has the potential to become a sensitising tool in the same way that social science concepts such as ‘infrastructuring’ (Karasti, 2014) and ‘boundary objects’ (Star and Griesemer, 1989) have become accepted tools and been fully embraced in the design discourse.

The strength of ‘the situation’ is that it balances on the cusp between complexity and transformation. Clarke’s work in the social sciences has demonstrated that situations can identify relations and power dynamics without false reductionism. While design has shown that the researcher can actively shape and transform situations. This makes ‘the situation’ a powerful metaphor for being able to intervene into complexity.

This coincides with recent efforts in the social sciences to re-evaluate Dewey as offering a pragmatist vision for a material politics that can tackle the ecological crisis the world is facing (Marres, 2023). The social sciences are looking to develop ‘inventive methods’ (Lury and Wakeford, 2012) to actively transform the researcher and the world together. Although these methods draw inspiration from design, what is lacking are conjoined methods that resonate in both disciplines. Therefore, this is the ideal moment to engage more deeply with Dewey’s idea of ‘the situation’ and develop it into a shared unit of analysis that enables designers and social scientists to collaborate and go beyond the limits of their respective fields.

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