Social Structures as Service Design Materials

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Historically, social structures such as norms, rules, roles, and beliefs have represented externalities in service design. However, a view of service as a multi-actor value cocreation process, guided by institutionalized social structures, brings them to the fore as central service design materials. With the current article, we seek to extend understanding of social structures as service design materials and build knowledge regarding how to integrate these materials in service design processes. Drawing from institutional theory, we elaborate on the materiality of social structures and propose a conceptual framework that highlights their invisibility and duality, as well as their composition of multiple institutional pillars. Then with a research through design approach, we build on this conceptual framework to develop a practical process for exposing and working with social structures as service design materials.

Keywords – Service Design, Design Materials, Social Structures, Institutionalization, Service.

Relevance to Design Practice – This article outlines a detailed, step-by-step process that service design practitioners can use to attend to social structures as design materials and a conceptual framework to understand their materiality.

Introduction

When visiting a restaurant, diners are guided by their expectations about the process of ordering, the role of their server, and what constitutes appropriate behavior when eating and interacting with others. Such value cocreation through service exchange requires institutionalized social structures, including shared and entrenched norms, rules, roles, values, and beliefs (Koskela-Huotari et al., 2020; Vargo & Lusch, 2016). Institutionalized social structures both enable and constrain value cocreation, bringing stability and predictability to social situations. The guidance of these structures in our lives is constant, but is often so subtle and taken for granted that we fail to recognize it. Thus, when designing for desired forms of value cocreation, it is necessary to attend to these guiding social structures (Edvardsson et al., 2011). For example, when designing a new restaurant service, it can be important to adapt opening times to existing norms related to when customers are regularly eating out or ordering, as well as local serving regulations.

Prior research has shown that service design often struggles to attain lasting, transformative change in practice (e.g., Almqvist, 2020; Overkamp, 2019). When a desirable new service concept has been designed, it can be rejected if it does not match the existing social structures; it also could challenge existing beliefs and values within the social system in such a way that modifications to the desired service concept occur (Stuart, 1998). For instance, a newly designed restaurant with a digital ordering system may find that diners ask servers to order their food anyway because this interaction aligns with their established expectations. If service design efforts fail to acknowledge social structures as design materials, they might lead to only superficial changes, without addressing the complex context within which value cocreation is embedded (Akama, 2009). Furthermore, service design itself is a process of value cocreation which is also enabled and constrained by existing institutionalized social structures (Vink & Koskela-Huotari, 2021), making them even more critical to attend to.

However, despite growing recognition of the need for attention to social structures in service design (Akama, 2015; Kimbell & Blomberg, 2017; Kurtmollaiev et al., 2018; Vink et al., 2019), the field has not sufficiently addressed the materiality of social structures—that is, the nature and characteristics of social structures that intentional design interventions aim to influence and work with. Understanding the characteristics of social structures is fundamental for informing practical processes for working with this complex material in service design. With such knowledge, service design practitioners would have a greater chance of realizing the transformative potential of service design practice.

Therefore, with this article, we aim to gain a clearer understanding of social structures as service design materials and expand knowledge of how to attend to social structures in service design processes in practice. We draw from institutional theory (e.g., Greenwood et al., 2017; Scott, 2014) to establish three characteristics that social structures possess as service design materials. Building on these characteristics, we apply a research through design approach and thus develop a practical process for exposing and working with social structures in service design. In turn, we make two significant contributions to service design discourse.

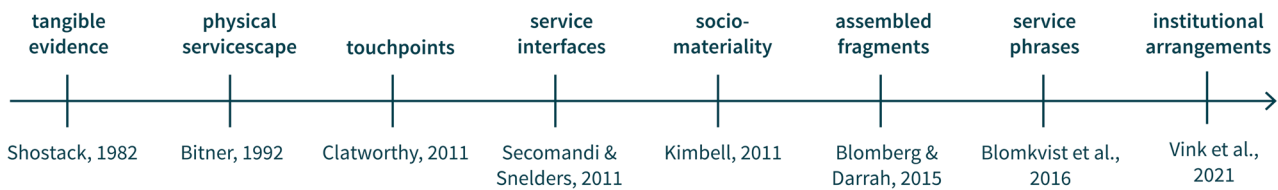**Corresponding Author:* josina.vink@aho.no

Figure 1. Gradual extension of design materials in service design literature.

First, this article offers a conceptual framework that sheds light on the nature of social structures as design materials. The framework, depicted as a partially submerged iceberg, highlights three characteristics of social structures that reflect their materiality and in turn can inform service design: (1) invisibility, (2) duality, and (3) the composition of multiple institutional pillars. With this framework in mind, service designers can plan and carry out interventions with greater potential to change entrenched ways of thinking and acting within service contexts. Second, the empirically tested, practical process presented herein shows practitioners how to work with social structures as service design materials through six steps, each consisting of two core activities. The detailed guidance also outlines which aspects practitioners should consider when exposing and working with social structures as design materials.

Evolving Understanding of Service Design Materials

Service design refers to a process of transforming the materials of service, though no consensus exists regarding what constitutes those materials (Blomkvist et al., 2016). Perceptions of the materials of service design effectively define the scope and focus of service design processes. In recent decades, understanding of *service* has shifted from a more simplistic view, in which service is an intangible market offering, toward a process perspective that acknowledges value cocreation among multiple people, guided by institutionalized social structures (Vargo & Lusch, 2016). In line with this shift, researchers increasingly acknowledge the need to account for vast complexity in service design (Sangiorgi et al., 2017). Furthermore, we note a gradual extension of the definition or consideration of what constitute materials of service design (Figure 1).

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Early service management literature on service design reveals a strong emphasis on tangible evidence (Shostack, 1982), as well as the influence of the physical environment, or servicescape, on people engaged in service interactions (Bitner, 1992). Physical touchpoints accordingly have been put forward as strong candidates for materials of service design (Clatworthy, 2011). Other scholars highlight the service interface as the central element of service and thus the object of service design (Secomandi & Snelders, 2011); this focus remains apparent in current service design literature (e.g., Grenha Teixeira et al., 2017). Careful attention to the physical materials of service, such as touchpoints and interfaces, has been critical for service design, yet it might not provide a complete picture of the full complexity of service design materials.

In particular, when working with service, it is acknowledged that designers shape entities that are both social and material (Kimbell, 2011). However, service is also recognized as an assemblage of immaterial and material constituents that get shaped by people in practice, not just by designers (Blomberg & Darrah, 2015). Building on this multi-actor understanding and the recognition that service design materials function as processes over time, some scholars propose service phrases as a form of material that can aid in better attending to the tempo and rhythm of actions and reactions within a system of value cocreation (Blomkvist et al., 2016). This perspective also features the recognition that "by examining service as a material, design has to transcend the tangible, and enter into a discussion of materials in a more abstract sense" (Blomkvist et al., 2016, p. 1).

There is growing literature stressing the importance of social structures in service design (Akama, 2015; Kimbell & Blomberg, 2017; Kurtmollaiev et al., 2018; Vink et al., 2019). Within this conversation, institutional arrangements (i.e., interdependent assemblages of wide-spread and entrenched social structures, such as rules, roles, norms, and beliefs) emerge as the central materials of service design (Vink et al., 2021). However, "there is a need for a more nuanced understanding of the characteristics of institutional arrangements as design materials and the implications of those characteristics on how actors can intentionally shape them" (Vink et al., 2021, p 180). Existing efforts in service design research seek to understand and influence various aspects of social structures, such as those related to transforming organizational cultures (Sangiorgi, 2011), shaping mental models (Vink et al., 2019), or understanding value networks (Čaić et al., 2019). But such considerations of specific social structures or particular contexts produce a fragmented understanding of social structures and highlights the need for a more comprehensive view of these materials, to support practical efforts to engage in the processes of working with them.

The Materiality of Social Structures

To build on the emerging understanding of social structures as design materials, we draw from the vibrant discussion of institutional theory in organizational studies (Greenwood et al., 2017; Scott, 2014). This body of literature offers a fruitful source for theorizing more deeply about service contexts (Koskela-Huotari et al., 2020; Vargo & Lusch, 2017), in that institutional theory examines the nature of social structures and the processes through which they can be created, altered, and eroded (Greenwood et al., 2017). It thus offers insights into the materiality of social structures, which can inform service design. According to institutional theory, social structures are shared typifications that delimit appropriate behavior for groups of people who internalize them (Barley & Tolbert, 1997). Over time, some typifications become institutionalized social structures, in that they are perceived as objective and largely taken for granted (Berger & Luckmann, 1967; Zucker, 1983). In particular, three characteristics of social structures, frequently cited in institutional theory, have significant implications for working with them as materials in service design: (1) they are invisible to people who have internalized them; (2) their dual nature means they are present in both tangible and intangible aspects of service; and (3) they are composed of multiple institutional pillars and therefore take many forms.

Invisibility of Social Structures

Based on institutional theory, social structures guide human thoughts and behaviors, according to what appears appropriate within given situations (Meyer & Rowan, 1977; Scott, 2014). Enduring social structures are called institutions (e.g., Greenwood et al., 2008; see also Giddens, 1984), which arise when those structures lose their social origins (usually, as they are passed down through generations) and take on law-like status in people's thoughts (Meyer & Rowan, 1977; Zucker, 1983), through a process of institutionalization (Berger & Luckmann, 1967). People perceive institutionalized social structures as inevitable and "*natural*" (Voronov & Yorks, 2015), such that they remain largely unobservable and unquestioned (Berger & Luckmann, 1967; Zucker, 1977). For example, gender, including both a binary delineation of man and woman and assumed roles for each, is often perceived as natural and objective in Western society. Such highly institutionalized social structures thus become *invisible* to the individuals and collectives that have internalized them. This invisibility makes it difficult to work with most social structures as design materials because they require such careful reflection to become (partially) exposed.

Duality of Social Structures

Understanding *duality* in this study context requires first clarifying the recursive relationship between people and social structures, in which institutionalized social structures continually get brought to life through the same activities and interactions that the structures enable and constrain in the first place (Scott, 2014; see also Giddens, 1984). Scott (2014) argues that the unobservable aspects of social structures are instantiated through physical aspects. Building on Gidden's (1984) structuration theory and insights into the *duality* of structure, Scott argues that intangible aspects of social structures, such as rules, pattern the tangible aspects, such as social activities and relations through time and space. This duality aligns with design and marketing theory that acknowledges how products and other artifacts reflect and carry cultural meanings (Crilly et al., 2004; Levy, 1958; Van Rompay & Ludden, 2015). Scott (2014) refers to tangible aspects of social structures as *carriers* and also identifies four types of carriers that can bear institutionalized social structures: symbols, artifacts, activities, and relations. These symbols (e.g., written and visual language), artifacts (e.g., physical products), activities (e.g., habits, routines), and relations (e.g., interactions) all are shaped by the intangible aspects of social structures, such as rules, norms, and beliefs (Scott, 2014). In this view of the intertwined, mutually constitutive nature of traditional tangible aspects of service and recently more emphasized intangible social aspects, the former constitutes a physical enactment of the latter (Vink et al., 2021). For service design practice, it means that people can leverage the visible, physical aspects of service to understand the invisible, social aspects. In other words, if the existence of social structures is acknowledged, which diminishes their taken-for-grantedness, it is possible to see how entrenched rules, norms, and beliefs are manifest in tangible, perceivable ways in day-to-day practices.

Multiple Pillars of Social Structures

Finally, with regard to social structures as *composed of multiple institutional pillars*, institutional theory clarifies that social structures come in many forms. In categorizing these forms, Scott (2014) argues that highly institutionalized social structures are made up of three institutional pillars, which represent a continuum that moves from explicit, legally enforced structures to more implicit versions, though they all have conscious and unconscious components. Among the three pillars, the regulative pillar refers to structures, such as rules and laws, that create order, enable expedience through coercion, and can be expressed rather explicitly. The normative pillar encompasses structures, such as norms and roles, that leverage social obligations to create expectations about appropriate behaviors within a given situation. The cultural-cognitive pillar refers to implicit structures, such as beliefs and frames, that create a shared understanding and thus enable certainty and meaning-making. For service design, these broad categories of social structures can help make sense of complex service contexts.

Conceptual Framework of Social Structures as Service Design Materials

Figure 2 brings together all three characteristics of social structures—invisibility, duality, and a composition of multiple pillars—into a single conceptual framework that illustrates the mostly invisible nature of social structures, using an iceberg analogy, similar to other frameworks of culture (e.g., Hall, 1976).
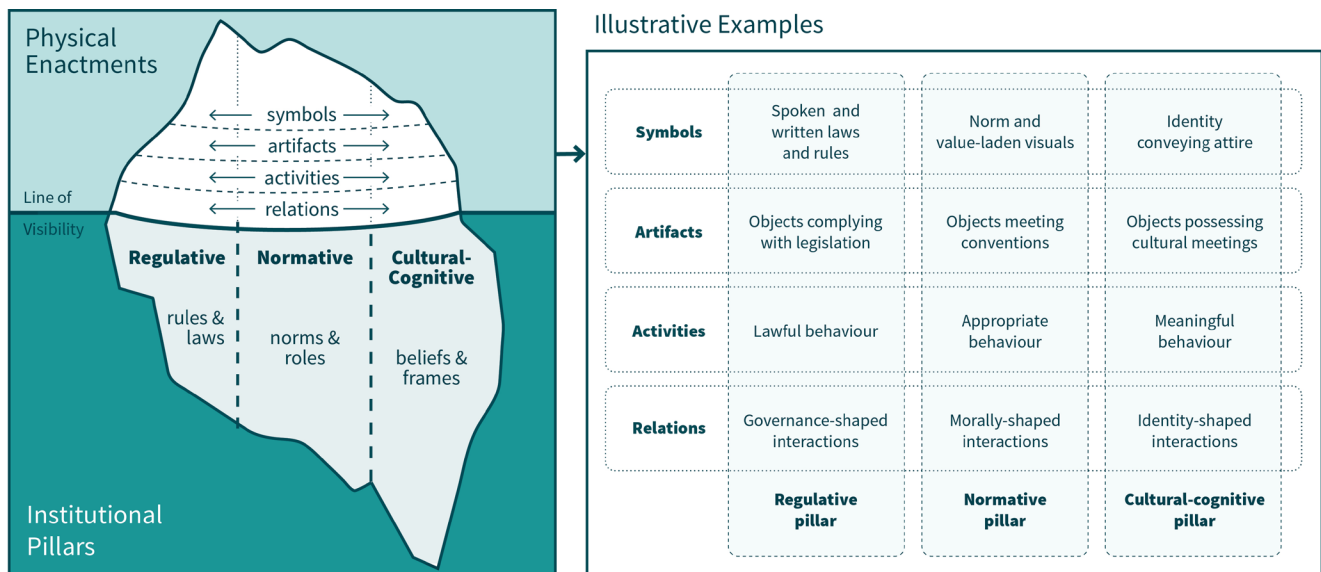
Figure 2. Conceptual framework of social structures as service design materials.

It illustrates the small part of the social structures that constitute the service context that are actually visible, supporting conscious reflection, together with the majority of the structure that is submerged below the surface and beyond conscious attention. The submerged structures can be categorized according to regulative, normative, and cultural-cognitive pillars. The tip of the iceberg includes symbols, artifacts, activities, and relations that represent physical enactments of these pillars. Also in Figure 2, the expanded illustration of the tip of the iceberg offers example manifestations of the institutional pillars in different categories of physical enactments. For example, symbols enacting a regulative pillar might take the form of a written law, a charter of rights, or set of rules (e.g., "*no rollerblades*" sign on the door of a store). These categories are not mutually exclusive; some objects represent multiple types of physical enactments and multiple institutional pillars, such as an airplane ticket that adheres to both aviation laws and passenger norms and takes the form of an artifact that contains symbols, and facilitates interactions.

Thus, institutional theory offers valuable insights into the materiality of social structures. However, it also remains abstract, without concretely informing practical application (Hampel et al., 2017). We seek to build on insights about the invisibility and duality of social structures and the composition of institutional pillars to establish how this materiality might be attended to in service design practice.

Methodology

A *research through design* approach explicitly attempts to integrate tacit knowledge from design practice into design research (Frayling, 1993). As a practice-driven approach, it has been used commonly to develop service design processes (e.g., Clatworthy, 2011). We adopt the research through design tactic of *sequencing,*

which involves conducting design practice in ways that are significantly informed by theory from another domain (Redström, 2017), in this case, institutional theory. This integration of theory helps address the need to make tacit knowledge explicit and then work with those more explicit forms of knowledge (Friedman, 2008). Furthermore, the research through design approach offers a response to ongoing calls for theory-driven research with greater rigor and relevance within the design field (Cash, 2018; 2020). Thus, while institutional theory offers an account of the materiality of social structures in sweeping, abstract terms, research through design offers a potential resolution of specific issues linked to the actual process of designing (Redström, 2017).

In particular, we aim to develop a practical process for working with social structures as materials in service design, guided by the conceptual framework we derived from institutional theory. The three characteristics of social structures thus anchor our discussion of how to work with social structures as service design materials. Then to explore the processual nuances of working with complex social structures as service design materials, we conducted experiments in 18 contexts, with more than 800 participants, over a period of five years and in five countries (Canada, the Netherlands, Germany, Sweden, and Norway). The experiment contexts included workshops in ongoing service design projects, conferences, and education, along with integrated experiments across entire service design projects. Some workshops lasted 45 minutes, while others extended up to two days. The duration of the service design projects spanned one to seven months. These different contexts and the diversity of participants helped us identify practical challenges, some of which were more pressing in certain situations and for different people. Table 1 details the range of the design experiments conducted, in terms of the context, type of experiment, location, roles, number of participants, and so on.

Table 1. Research through design experiments.

#	Participating Group	Context	Experiment Type	Duration	Location	Number of Participants	Participants	Date
1	Relating Systems Thinking and Design Symposium	Design conference	Workshop	2 hours	Toronto, Canada	40	Designers, innovation professionals	October 2016
2	Service Convention Sweden	Service innovation conference	Workshop	1 hour	Karlstad, Sweden	200	Service providers, innovation professionals	December 2016
3	Karlstad University	Business education	Workshop	2 hours	Karlstad, Sweden	15	Students	January 2017
4	County Council of Sörmland	Healthcare conference	Workshop	1 hour	Eskilstuna, Sweden	75	Service providers	January 2017
5	Radbound Reshape Center	Healthcare program	Workshop	1 hour	Nijmegen, Netherlands	100	Service providers, innovation professionals, designers	March 2017
6	Service Science Factory	Service innovation conference	Workshop	45 minutes	Maastricht, Netherlands	12	Innovation professionals, organizational leaders	April 2017
7	County Council of Sörmland	Healthcare service design projects	Workshop	1.5 hours	Eskilstuna, Sweden	40	Service providers, innovation professionals	August 2017
8	Köln International School of Design (KISD)	Design education	Workshops	1 week	Cologne, Germany	10	Students	May 2017
9	County Council of Värmland	Healthcare service design project	Workshop & project	1 month	Karlstad, Sweden	8	Designers, service providers	September 2017
10	Konstfack University of Arts, Crafts and Design	Design education	Workshop	2 days	Stockholm, Sweden	14	Students	October–November 2017
11	Service Design for Innovation Conference	Healthcare design conference	Workshop	1.5 hours	Karlstad, Sweden	70	Service providers, designers, innovation professionals	January 2018
12	Health Innovation School	Healthcare innovation program	Workshop	1.5 hours	Nijmegen, Netherlands	50	Service providers, organizational leaders	April 2018
13	International Initiative for Mental Health Leadership Conference	Healthcare innovation program	Workshop	2 hours	Stockholm, Sweden	50	Service providers, innovation professionals	May 2018
14	Swedish Association of Local Authorities and Regions	Healthcare conference	Workshop	1 hour	Stockholm, Sweden	150	Service providers	October 2018
15	Linköping University	Design education	Workshop	2 days	Linköping, Sweden	4	Students, service providers	November 2018
16	Vestfold County Council	Welfare service design project	Workshop	2 days	Oslo, Norway	10	Service providers, designers	November 2019
17	Oslo School of Architecture and Design (AHO)	Design education & healthcare service design project	Workshop & project	10 weeks	Oslo & Larvik, Norway	18	Students, service providers	February–April 2020
18	Center for Connected Care (C3)	Healthcare service design projects	Workshop & project	7 months	Oslo, Norway	25	Service providers, students	October 2020–April 2021

Most experiments were led by the first author, but for some cases, we trained additional designers or researchers to enable larger group processes. The experiments all provided background information about the importance of social structures and their materiality to participants, and also guided them through hands-on activities that involved several steps that we refined over time.

Thus, participants received support in their efforts to identify and reflect on existing social structures that might be influencing their service context. We carefully evaluated the accessibility of the experimental processes to designers and non-designers, in terms of enabling them to participate and contribute actively (gauged by questions about the activity and how quickly they started each

activity), as well as their effectiveness for getting participants to identify and reflect critically on existing social structures (gauged by the number and breadth of social structures identified, relevant questions, and discussions prompted).

In parallel, we took careful notes during observations; if possible, we took photos of the process or video recordings of online sessions and informal follow-up conversations. The service design projects also included three to five one-hour reflection sessions with participants, in which they shared their experience and what worked for them, or not. The prompts included questions such as: How easy was it for you to identify social structures in this situation? What helped this process of identifying social structures? What made this process more difficult? In reviewing the documentation from each experiment and follow-up reflection sessions, we were able to establish the accessibility and effectiveness of various steps in the process and the core activities. Using both positive evidence from experiments in which the criteria were met and negative evidence from those in which some aspect of the process proved inaccessible or ineffective, we iteratively refined the process.

Aligned with the technique of *sequencing* (Redström, 2017), our process of analysis involved a process of systematically combining lessons learned from the practice-based design experiments with relevant insights from institutional theory. With an abductive approach, we went back and forth between theory and practice, making inferences and comparisons to build a stronger understanding of both (Dubois & Gadde, 2002). When

practical challenges emerged from the experiments, we conducted fresh scans of relevant literature to explore particularities in relation to the challenge and seek out theoretical insights that might inform strategic adaptations. The literature base for this effort included more than 40 institutional theory articles related to social structures and how people build awareness of them. Next, we applied strategic adaptations informed by theory to the practical process in the subsequent experiment and evaluated its accessibility and effectiveness. This iterative process of experimentation and analysis and the movement between practice and theory resulted in a well-tested practical process that offers a means to attend to social structures as service design materials.

Practical Process for Attending to Social Structures as Service Design Materials

In this section, we describe a refined practical process for attending to social structures as service design materials that includes six steps: (1) gather diverse perspectives, (2) prompt appreciation through experiences, (3) identify physical enactments, (4) unpack the intangible social structures, (5) critically reflect on social structures, and (6) explore possible alternatives. Table 2 summarizes each step, its core activities, supporting theoretical insights, and examples. We also explain each step in more detail next, with support from both positive and negative evidence that emerged in our research through design experiments.

Table 2. Details of the practical process of attending to social structures as service design materials.

Step	Core Activities	Supporting Theoretical Insight	Example
Gather Diverse Perspectives	1. Bring together people with divergent backgrounds 2. Build trust among the participants to support vulnerable sharing	A multiplicity of conflicting social structures reduces their taken-for-grantedness to people (Kodeih & Greenwood, 2014; Thornton et al., 2012)	Organize a workshop with participants with different education, roles, cultural influences, organizational affiliations, etc., and set the tone for a safe space through explicit ground rules
Sensitize through Experiences	1. Prompt reflection on a specific service situation 2. Engage participants in an aesthetic experience of that situation	Emotionally compelling narratives and sensory enactments can aid critical reflection on social structures (Ruebottom & Auster, 2017; Creed et al., 2019)	Use a story or role play to prompt reflection or direct experience on a specific situation
Identify Physical Enactments	1. Describe symbols, artifacts, activities, and relations in the situation 2. Reflect on the ways these enactments manifest intangible social structures	Social structures are instantiated through physical enactments that make them partially visible (Raviola & Norbäck, 2013; Scott, 2014)	Write down or draw symbols or objects that make up the environment or create a storyboard of interactions to begin to see associations with rules, norms, values
Unpack the Intangible Social Structures	1. Identify existing social structures within a service situation 2. Detail components of the social structures based on the institutional pillars	Social structures are constituted by regulative, normative, and cultural-cognitive pillars (Scott, 2014)	Come up with a few examples of social structures below the surface of the iceberg, with the help of the pillar categorization
Critically Reflect on the Social Structures	1. Recognize overlapping guidance between different social structures 2. Call out conflicts between social structure	Social structures are generally taken for granted and invisible to people (Meyer & Rowan, 1977; Zucker, 1983)	Take the social structures identified two by two and ask if their guidelines for action are in conflict
Explore Possible Alternatives	1. Imagine alternative service scenarios 2. Determine the changes to social structures required for each scenario	Social structures can be intentionally changed by people creating, disrupting, or maintaining existing structures (Lawrence & Suddaby, 2006)	Identify the social structures of a preferred future scenario and what structures would need to be created, disrupted, or maintained to realize this scenario

Step 1: *Gather Diverse Perspectives*

The first step involves bringing together stakeholders with diverse perspectives on a service situation, who can safely and respectfully work together. This step comprises two core activities: gathering people with divergent backgrounds (e.g., different education, organizations, roles, cultural influences) and building trust among them to encourage vulnerable sharing. The goal is to create a group of participants who have different ways of viewing or relating to the focal service situation. The exact make-up of the group, to ensure balanced breadth and maintain trust, must be a contextual decision. This step is also supported by the theoretical insight that a multiplicity of conflicting social structures reduces their taken-for-grantedness (Kodeih & Greenwood, 2014; Thornton et al., 2012). Institutionalized social structures are patterns adopted by multiple people (Berger & Luckmann, 1967), but they are not universal, and variations often arise across different social systems (Friedland & Alford, 1991). Critically, variation among social structures affects people's ability to recognize and change them (Seo & Creed, 2002), so careful attention to unshared social structures is important for understanding how and when people can drive intentional change in social structures through service design. That is, when participants are influenced by different social structures, it makes it easier for the group to identify the various structures at play, as the members see different conflicts from their own perspectives.

For example, when students who grew up in various countries worked with healthcare service providers in various roles (e.g., nurse, doctor, physiotherapist) in Norway, the group identified social structures of municipal healthcare services that otherwise had been taken for granted by the Norwegian service providers (Experiment 17). Due to their experience with other healthcare systems, these students could identify the important role of formal professions, norms regarding one-to-one treatment, and an emphasis on the same treatment for everyone. In contrast, in a welfare project involving designers working with a group of service providers, all of whom embraced a similar approach within the welfare system, the group struggled to identify social structures without feeling critiqued or attacked for their regular way of working (Experiment 9). This design experiment revealed the importance of a diverse group that exhibits trust to enable participants to vulnerably share their reflections on the social structures they see.

Step 2: *Sensitize through Experiences*

The second step in this process involves sensitizing people to a particular service situation through experiential engagement, including reflection on a specific service situation and engaging participants in an aesthetic experience connected with the situation. For example, they might tell a story about a service experience or role play a particular situation. Institutional theory emphasizes personal narratives based on lived experiences as fruitful mechanisms for facilitating reflexivity and awareness of existing social structures (Ruebottom & Auster, 2017). Tapping into sensory enactments and aesthetics also can help people appreciate social structure within a given situation (Creed et al.,

2020). Such processes encourage experiential surfacing, such that people can access others' experiences and their own emotional responses, prompting a more nuanced understanding of social structures (Nilsson, 2015).

A positive example arose in a healthcare design conference, in which participants received a descriptive story of a patient's diagnosis (Experiment 11). They listened several times to an account that detailed the sensory experience of being in a specialist's office and the series of events that transpired. This story helped participants engage more actively with the situation and detail the connected social structures that they found in the story. Similarly, role playing or improvising a particular service situation, such as primary care appointment, offered a strong starting point for gaining an appreciation of social structures in the system (Experiment 5). However, if the experiment did not present a particular situation or actively invite participants into it in some way, such as in Experiment 1, which simply asked the participants to reflect on social structures within the service systems in which they worked, the participants struggled to identify related structures and hesitated to start the process. This lesson reinforced the criticality of helping participants appreciate specifics of a situation, through more focused immersion.

Step 3: *Identify the Physical Enactments*

After appreciating the situation through experiences, the next step is to identify physical enactments within the service situation. This step involves two core activities: describe or map the physical enactments (symbols, artifacts, activities, relations) in the service situation and reflect on the ways these enactments manifest existing social structures. The relationships between physical enactments and social structures are not necessarily one-to-one; most physical enactments can be linked to various social structures, or vice versa. As we noted in discussing duality, prior literature shows that physical enactments are carriers of social structures (Scott, 2014). People enact social structures through their actions (Hallett & Ventresca, 2006), but physical objects also can take on the task of supporting the reproduction of social structures (Raviola & Norbäck, 2013). Thus social structures might become partially visible, through attention to physical enactments in the environment of a service situation.

One service design project, in a design education setting, had students examine public transit. They started by seeing how physical enactments on buses and trains exposed some social norms and rules for public transit in Germany, such that they described the set-up of the train seats and passenger handles, the signs calling out riders' roles, interactions regarding where new passengers sit, and even how passengers' clothing (e.g., large headphones) can signal interaction preferences (Experiment 8). However, in Experiment 3, in which we asked participants directly to identify social structures in a restaurant, the students struggled. Only after being prompted by the different enactments, such as a menu or greeting upon entering the restaurant, and a query such as, *What social structures might this reflect?* could participants initiate the identification process.

Step 4: *Unpack the Intangible Social Structures*

In the fourth step, participants unpack more intangible and invisible social structures, by identifying existing social structures within a service situation and detailing their components according to the institutional pillars. As we have noted, social structures are constituted by regulative (e.g., rules, laws), normative (e.g., roles, norms), and cultural-cognitive (e.g., beliefs, frames) pillars, and a focus on these pillars can aid in providing a more comprehensive view of existing structures (Scott, 2014). Prior literature also clarifies that regulations on their own are not institutionalized social structures; rather, they become so only through their embodiment of societal norms and values (Greenwood et al., 2008). Thus, it is important to detail various components of intangible social structures and their interactions within a service situation.

To contextualize this step, in a project pertaining to the experience of family caregivers after patients are discharged from the hospital, one team of designers and healthcare providers leveraged the institutional pillars as prompts to examine the situation more holistically (Experiment 18). They investigated regulative social structures, including the rights detailed in Norwegian law; normative social structures, such as the tendency for patients to trust and follow the guidance of medical professionals more than their family members; and cultural-cognitive structures, including a framing in which healthcare provision is believed to end once patients leave clinics or hospitals. Without the pillars as prompts though, the identification of social structures tended to remain narrow, with significant gaps in the descriptions of the service situation. For example, when considering the social structures involved in a typical primary care appointment, participants focused solely on regulative aspects, such as the laws governing medical practice and protocols for each procedure, but excluded important elements of regulative and cultural-cognitive social structures that also guide the situation (Experiment 12).

Step 5: *Critically Reflect on the Social Structures*

To reflect critically together on the social structures associated with the service situation, participants need to recognize overlapping guidance across different social structures, then call out the conflicts. This latter step links back to the rationale for gathering diverse perspectives in Step 1. Social structures are often so taken for granted that people influenced by them cannot imagine any alternative (Zucker, 1983). Even when structures have been identified, people can continue to assume their objectivity (Berger & Luckmann, 1967; Jepperson, 1991). But recognizing conflicting prescriptions can enable people to shape social structures more intentionally (Seo & Creed, 2002). Exploring contradictions among social structures is thus important for working with social structures as service design materials.

A positive example came from Experiment 13, which included international leaders in mental health at a conference in Sweden. After identifying the intangible social structures connected to the service situation, they began to discuss conflicts between the stigma related to talking about mental health and

norms encouraging early intervention. Together they agreed that the stigma around talking about mental health was among the most harmful social structures in the system. Such problematization did not always arise though; when not actively prompted to explore the conflicts among identified structures, participants often came to a general acceptance of the social structures in the existing service situation, such as those related to elderly care, noting them as just *how things were* and unlikely to change (Experiment 6).

Step 6: *Explore Possible Alternatives*

The last step in the process of attending to social structures as service design materials involves exploring possible alternatives through the core activities of imagining alternative service scenarios, such as a preferred future, and determining which changes to the social structures would be required for each scenario. Participants thus need to identify new social structures that would be created, as well as existing social structures that might be disrupted or maintained, if they were to realize the scenario. Institutional theory specifies that even if many social structures are enduring and remain unchanged (Scott, 2005), people have the ability to create new or transform existing social structures (DiMaggio, 1988). Understanding the option of engaging in intentional shaping requires a recognition of the importance of creating new and disrupting existing social structures; in turn, it supports active, ongoing work on social structures that people wish to sustain (Lawrence & Suddaby, 2006).

A successful example of this step involved a service design project focused on the criminalization of drugs in Cologne; the participants reimagined a preferred future from a harm-reduction perspective (Experiment 8). They then identified particular social structures that would need to be intentionally shaped, such as the disruption of public beliefs that local needle exchanges would make the neighborhood unsafe. However, if just current social structures were noted, excluding other alternatives, participants had a difficult time perceiving the status quo as capable of change (Experiment 4).

The six steps of our proposed practical process, refined through experimentation, offer guidance for practitioners on how to attend to social structures as materials in the service design process and what to consider along the way. However, these steps are not meant to be generic prescriptions for every situation. Rather, the process can help practitioners consider what might work and adapt each step to match their context.

Practical Integration into Service Design Processes

To contextualize the process of working with social structures as service design materials and the benefits of this approach, we present a case example that uses this process as part of the service design process. The case helps illustrate how working with social structures as design materials can inform new service development and overall service system change through service design in the context of youth welfare services (Experiment 16).

In Vestfold County, a group of eight service providers from different private and public organizations across sectors, along with a designer and design researcher, came together for a two-day workshop to understand the current system related to youth unemployment (Figure 3). The county had been grappling with how to address the disproportionately high numbers of local youth who were neither enrolled in school nor employed. The workshop started with warm-up activities to help participants get to know one another and introduce the guidelines for respectful interactions. Next, a presentation outlined the importance of social structures in service design and the conceptual framework (Figure 2), with examples. All participants then watched an animated story depicting a youth before, during, and after a job interview (top left, Figure 3). The story had been carefully crafted, reflecting input gained through several workshops and discussions with unemployed local youth, in which they recounted their experiences. The highly descriptive

story emphasized the visceral experience of Lise as the focus of the story, her surroundings, and her dialogues with others. The story was read out loud several times, while projecting supporting images, and participants actively listened while taking notes.

Using the iceberg analogy, drawn on paper, participants wrote down the physical enactments they noticed in the story (top right, Figure 3), such as dialogue with the social worker offering help, the calendar and database used by the social worker, and the youth's last name, which seemed to prompt some bias in the interviewer. Then participants gathered in groups of three members to share what they had written down and develop a more comprehensive mapping of the physical enactments from the story, filling in what others captured but they missed. Those physical enactments helped unpack the intangible social structures guiding Lise's situation. For example, the dialogue between Lise and the social worker involved morally shaped
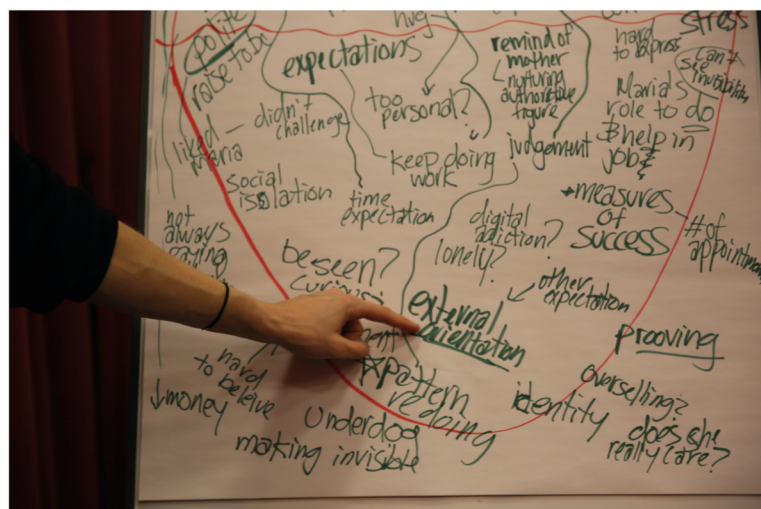

Illustrated story about Lise's interview informed by local youth (Illustrations by Elena Wong)
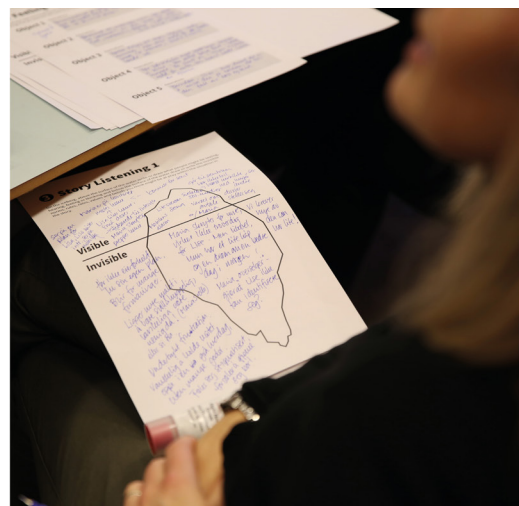
Participant reflecting on the physical enactments and intangible social structures in the story

Building out the comprehensive map of physical enactments as a large group

Discussing what social structures might be contributing to the problem of youth unemployment

Figure 3. Depictions of the process of attending to social structures as design materials for a youth unemployment project (photos from Vestfold County Council).

interactions, in which the social worker played an overly supporting role, considered the *right thing to do*, and enacted strong norms about *helping* youth. The calendar and database were recognized as objects that comply with the legislation regulating social workers' documentation in Norway but also reflect professional norms about what behavior is considered appropriate. The youth's last name offered a symbol of identity associated with the group of *Navers*, a derogatory term assigned to people who are alleged to live off welfare in Norway.

The participants then returned to their small groups, having gained others' perspectives, to fill in any gaps. The large group convened together to share interpretations and map all of the physical enactments and social structures involved (bottom images, Figure 3). Once they had been mapped to the point that participants had no other ideas, the group was invited to reflect critically on the social structures at play and whether any of them were in conflict. For example, they noted that norms about a lack of expectation and responsibility for young people conflicted with beliefs that traditional jobs that support economic growth are important for society. From there, the group started to imagine a preferred future for Vestfold County and map social structures connected with it, such as the beliefs of a growth mindset and learning, new norms for flexible teaching curricula, alternative lifestyles that support collectives rather than individuals, and balancing the power of employees and employers.

Then the group was invited to identify changes in social structures that they wanted to initiate together, such as disrupting the stigma about using the welfare system, and the things they wanted to maintain, including trust in individuals, inclusion of everyone, and respectful service delivery. This cohesive vision of a preferred future was then summarized in eight systemic shifts that the group sought to build momentum around, such as shifting from a linear, step-based model of progress toward exploratory, self-driven learning and growing. By reflecting on the dynamics of social structures connected with youth unemployment, they also developed four service concepts (Figure 4) to enact the desired changes in social structures intentionally, while also supporting overall structural change in the service system. These concepts included a job app to balance the power between employers and employees, a lifetime coach, integration of practical education, and proposed support for more collective, flexible lifestyle approaches for youth.
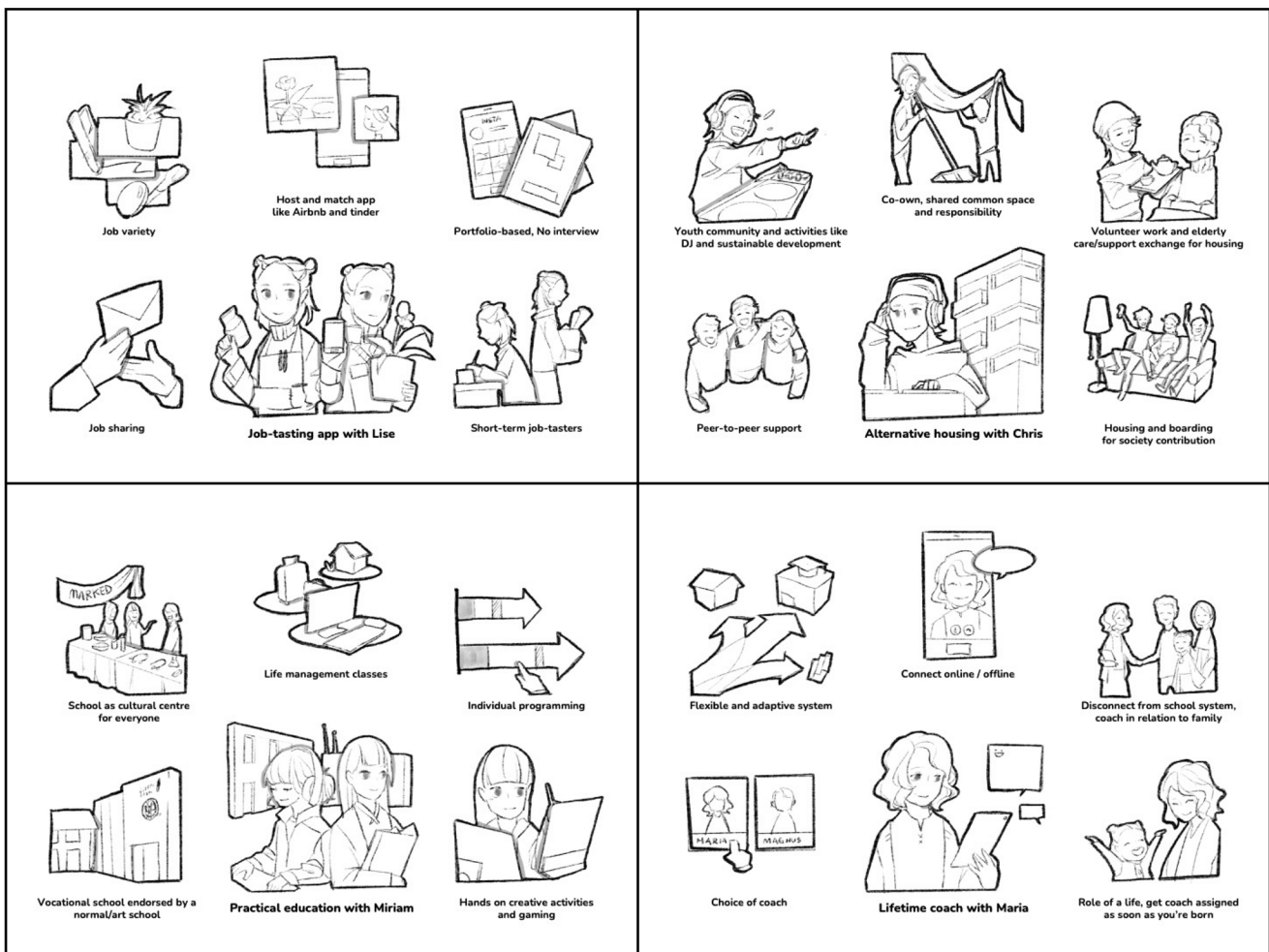

Figure 4. Service concepts informed by attending to social structures as design materials (illustrations by Elena Wong).

In this context, the process of attending to social structures helped build understanding of a service situation at an early stage and informed the strategic direction, conceptual development, and approach to systems change. But this process also can support other use contexts. For example, it might be applied to facilitate the ongoing redesign of existing services and respond to ongoing system changes through service design. In a two-year service design project supporting remote healthcare provision in Larvik municipality, Norway, the process helped uncover how the social structures were changing due to the new services and an overall decentralization of care (Experiment 18). In this case, the process led to a recognition of the need to strengthen non-medical aspects of care and family support by integrating concrete changes into the existing service delivery and developing an online platform to protect valued social norms being threatened by the systemic shift toward digitization. In another experiment (Experiment 9), the process was applied to a service design project to support the analysis of interviews by a group through a social structure lens. The many possible use cases have not been comprehensively examined, but we have also found that the process offered a valuable way to support organizational assessments of possible contexts when scaling up the service beyond its current service context (Experiment 17).

Discussion

This article makes two main contributions to service design literature. First, it outlines a more nuanced view of social structures as service design materials, in a conceptual framework that highlights three core characteristics. Second, it develops a practical process for attending to social structures in service design practice. We elaborate on both contributions in more detail below.

Extending Understanding of Social Structures as Service Design Materials

Social structures as service design materials feature three characteristics: invisibility, duality, and their composition of multiple institutional pillars. Building on a conceptualization of institutionalized social structures as service design materials (Vink et al., 2021), we acknowledge that most social structures are invisible and taken for granted, which makes it difficult to work with them intentionally. This characteristic is represented by the iceberg analogy in our conceptual framework. Furthermore, we elaborate on the duality of social structures that arises due to the mutually constitutive nature of traditional, tangible aspects of service and intangible, social aspects. These social structures as design materials also comprise three institutional pillars that help reveal why some forms of social structures, such as rules, can be reflected more explicitly, but other forms, such as beliefs, are more tacit in nature. By detailing a cohesive, conceptual framework that integrates these theoretical insights, this article can inform continued theorizing about social structures and also give service design practitioners information about what they need to be aware of. Our approach aligns with Kimbell and Blomberg's

(2017) conceptualization of the object of service design as a socio-material configuration, but it is distinct, in that we explicate the institutionalized nature of social structures, which explains the enduring nature of their mutual constitution.

Continued research into social structures and their institutionalized nature in service design should take an *internalized* view that acknowledges that social structures are not external constraints on people but instead live on within them (Berger & Luckmann, 1967). Along this same vein, an *inhabited* view is critical, which highlights that social structures consist of people enacting things together (Hallett & Ventresca, 2006). With that understanding in mind, it becomes clear that the object of service design is not separate to or external from the service design process itself, in which people are enacting internalized social structures together. Studies of physical enactments also should attend to the insight that enactments are never neutral or *frozen* modes for transmitting institutionalized social structures (Scott, 2014). As artifacts and other physical enactments move in time and space, they get translated and edited, reflecting the different social structures of their originators and interpreters (Czarniawska & Joerges, 1996). This additional complexity must be addressed and studied in service design research. We also encourage service design scholars to draw more insights from institutional theory, especially in organizational studies (Greenwood et al., 2017), to expand conceptual understanding of service design materials and the processes by which they can be shaped.

Foundational design literature already recognizes the central role of social structures, which constitute the invisible, taken for granted components of design (Fezer & Schmitz, 2016). As Schön (1992) argues, *design is primarily social* as people take on institutionalized roles in interaction with design situations. The in-depth discussion and recognition of the influence of social structures in design can benefit design disciplines beyond service design too, such as product, interaction, or communication design, by clarifying the entanglement of physical enactments with the invisible institutional pillars that guide people's thoughts and actions. Other perspectives on design—such as critical and speculative design (Dunne & Raby, 2013) that aim to raise awareness, expose assumptions in the status quo, and speculate on possible futures—could apply the conceptual framework we propose to reveal the social structures underlying current situations, bring them to light through materializations and fictions, and support critical dialogue about these structures and possible alternatives.

Advancing How Practitioners to Attend to Social Structures

The step-by-step, practical process of attending to social structures as design materials in service design processes represents guidelines for service designers and other practitioners who seek to expose and work with often invisible structures. By actively working with social structures in this process, practitioners can increase the chances of achieving thoughtful, contextually informed, long-term changes. As service design becomes more systemic and linked to

broader service systems (Sangiorgi et al., 2017), our proposed process offers practical tactics for working with the structures that already guide behavior in these systems. While existing service design methods can be leveraged to support this process (Vink & Koskela-Huotari, 2021), approaches such as the one presented here that more explicitly focus on attending to social structures as design materials can complement existing approaches and aid efforts to influence both specific service interactions and larger systemic changes. Beyond service designers, the approach could be of interest to a broader spectrum of design practitioners, such as those seeking design justice (Constanza-Chock, 2020), who could apply the process to confront systemic oppression, unpack social structures contributing to existing power dynamics, and intervene more strategically in social systems to support liberation.

In applying institutional theory (Hampel et al., 2017), we establish a practical process that is derived from central theoretical insights on social structures and that highlights service design as a valuable means of working intentionally with social structures. Building awareness of social structures, or what is referred to as *reflexivity* in institutional theory, is difficult, and we also lack guidance for doing so practically (Ruebottom & Auster, 2017). Recognizing that service design methods can aid people in building reflexivity (Vink & Koskela-Huotari, 2021), this research integrates insights from theory with service design practice to make the process of attending to social structures to build reflexivity more practical and accessible to practitioners. In our experiments, this process helped participants identify and reflect on the social structures guiding their service situation, which they previously had not considered.

Continued Research on Social Structures as Design Materials

Further research could explore the applicability and relevance of this process to other practices, in domains such as critical design and design justice. Furthermore, the conceptual framework and practical process could benefit from a more critical orientation that accounts for the power dynamics entangled in social structures as design materials. By working with the proposed process in other contexts, a more comprehensive understanding of different use cases could reveal possible necessary adaptations to different situations and aspects of service design practice. The iceberg analogy underlying our conceptual framework is grounded in a Western view of culture (Hall, 1976) and risks imposing that view on other cultures, so we encourage research into the social structures that this conceptual framework and process reproduce, the potential harms they may cause, and ways to address such issues thoughtfully. Exploring other analogies, conceptualizations, and ways to attend to social structures from non-Western perspectives is critical for ensuring that such knowledge is contextually appropriate and respectfully practiced by diverse people and in various contexts.

By focusing on social structures, our proposed framework and process may overshadow the need to attend to multi-species relations, especially amid current environmental crises. However,

we believe that a robust understanding of social structures is essential in such discussions, so continued research might integrate our findings with in-depth research related to more-than-human worlds (e.g., de la Bellacasa, 2017; Haraway, 2016), to understand and intervene in the relationship of humans with nature. We also stress the need for critical reflection on the concept of service design materials more generally and the ways in which seeing things, like social structures, as materials to be manipulated by humans may reinforce exploitation and oppression, rather than setting the foundation for working toward justice and liberation as was intended here. Again, to support this further development, a social structures perspective on service design demands further integration with critical theory. We hope this research will be taken up, expanded, and challenged in discussions in and beyond service design, and that it provides a catalyst for further considerations of the important roles of social structures for both design theory and design practice.

Conclusion

We advance discussions of service design materials by providing a more nuanced depiction of social structures as service design materials and outlining a process to help practitioners work explicitly with social structures in service design practice. The research through design experiments that we conducted are not intended to test a static process but rather to iteratively refine a dynamic process by learning from ongoing applications. Further evaluation is thus required to understand its efficacy. We hope that the process we propose provides a starting point for both researchers and practitioners to integrate attention to social structures into their service design work. We regard social structures as a valuable lens for researchers and practitioners to build a more holistic, humanistic understanding of service contexts. We call for other design researchers and practitioners to take social structures seriously as service design materials and, in doing so, enhance the capacity of service design to deal with complexity.

Acknowledgments

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