

6<sup>th</sup> STS Italia Conference | Sociotechnical Environments  
Trento, November 24–26, 2016



# Highlighting issues in current conceptions of user experience design through bringing together ideas from HCI and social practice theory

Ruth NEUBAUER<sup>\*a</sup>, Erik BOHEMIA<sup>a</sup> and Kerry HARMAN<sup>b</sup>

<sup>a</sup> Loughborough University London; <sup>b</sup> Birkbeck, University of London

*A socio-technical reconceptualisation of use, and the active roles of the material and users in design prompt us to question professional designers' roles and agencies within the wider realm of social (re)production. This paper focuses on bringing together key concepts of UX design and theories of practice, and pointing out some challenges that lie ahead of professional designers in the conception of their work. Theories used in HCI and historical legacies of production models may limit a full conception of 'experience' – or a locating of the social 'motor' – that can bring change about, as well as 'hide' other factors that make up professional design. We argue that there are limitations with current theories underlying design practice, and that the commonly conceived concept of agency in design and use, and the ontological place allocations of the professional designer and the user in the mechanisms of social (re)production need to be revisited. An investigation of professional designing as a social practice can serve the purpose to illustrate alternative conceptions of agency in professional designing, and help designers to be more aware of the social dynamics in their work.*

**Keywords:** UX, UX design, professional design practices, digital technology

## Introduction

At the present moment, the realms of design are subject to much debate. Design's endeavours to be part of the larger developments of business and innovation create a pressing need to build and extend theoretical foundations (Kimbell, 2012). A feeling of crisis emerges when on the one hand designers in practice have to deal with changing production circumstances of which they are not necessarily master (Miller, 2014), and when on the other hand in theory and education, design research struggles

---

\* Corresponding author: **Ruth Neubauer** | e-mail: [r.neubauer@lboro.ac.uk](mailto:r.neubauer@lboro.ac.uk)

to define its agenda, subject matters and topics (Krippendorff, 2006; Margolin, 2013).

In the field of designing for digital technology and human-computer interaction (HCI), the conceptualisation of the user has undergone change from being seen as merely a cog in a rational system to the user becoming a creative consumer (Kuutti, 2001). The rise of user experience design can be seen as part of this development, although questions are being raised about the fitness of theories underlying user-centred design to deal with the social aspects of “experience” (McCarthy & Wright, 2004). User-centred design has a certain understanding of social existence and of human agency, which have been challenged in the social sciences, for example by concepts of the indeterminate nature of action (Suchman, 1987), the creative capacity of users in everyday activity (Warde, 2005), and the role that the material plays in how things come to be (Bijker, 1992; Latour, 1990).

When Shove, Watson, Hand, and Ingram (2007) claim that professional design practice embodies and perpetuates an outdated theoretical model of social existence and change, we take this up as a prompt to take a closer look at the ideas of professional designing. A practice-theoretical examination of professional design practice can lend itself as another angle of illustrating new sociological approaches to explaining design, innovation and social change. These different ways for conceiving design practices also enable a rethinking of ‘user experience’.

This paper is the beginning of an exploration of the implications for professional design practice when the material and every day use are treated as active factors in innovation and in the process of how products and services come to be. When social scientists start redefining agency in use and consumption practices, what does this mean for professional design practices? We review relevant concepts from the social sciences and working concepts from industry practice. We want to build up the basis on which an empirical investigation can be launched.

## **UX Design and Social Theories**

The particular field of design we are going to focus on is UX (user experience) design. The reason for choosing UX, firstly, is that the UX community is a very distinct community within user-centred design and HCI (human computer interaction), with its own publications, conferences and vivid debates about its purpose, realm and theoretical foundation. UX design as a distinct profession has not been around for very long, and has a

relatively short history to overlook and make sense of. Secondly, one of the authors of this paper has been working in HCI and subsequently UX design for over a decade and brings therefore considerable practical knowledge of the industry and ongoing debates to this discussion.

We are taking a brief look at the guiding concepts of user experience design practice, and then, as proposed by Shove *et al.* (2007), we are introducing practice-focused ideas. We later start putting them into relation with each other.

UX design has got its main ancestral paths in HCI (Hassenzahl, 2008; Nielsen, 2000; Norman, 1988), and ergonomics (see Singleton, 1974), coming out of the tradition of user-centred design (see Dreyfuss, 1955). The theoretical foundations of UX are mainly located in cognitive and behavioural psychology, within the understanding that agency (the capacity to act) is located with the individual human being (see Norman, 1988; Weinschenk, 2011). Here, objects, constraints, social contexts and the human body are crucial factors, but the processing of how to proceed in the world happens in the mind, based on and surrounded by the individual experience. 'Experience' is now treated as an important asset of contemporary business strategy, materialised in the shape of experience maps and blueprints, connecting the customer experience with business opportunities (Brown, 2009, p. 126). Design activities within organisations serve the purpose of enabling better user experiences (Garrett, 2010).

Both in science and technology studies (STS) and in practice theories, social ontology (what the social is made up of) and agency are explained differently to most other social theories. Both suggest there not being a micro or a macro level of social phenomena, but that the entirety of social affairs happen along the same spatio-temporal level – there is nothing “above” and nothing “below” (Schatzki, 2011, p. 14). In their accounts agency does not reside with humans alone but is distributed across human-material constellations. For Schatzki, agency emerges from bundles of social practices and material arrangements. He sees social practices as nexuses of human activities – open-ended doings and sayings that are organised by understandings, teleologies (ends and tasks), and rules (Schatzki, 2011). These doings and sayings are carried out by humans which are part of material arrangements. It is through this hanging together of material entities and practices, that social life transpires, and constitutes how things are and are going to be. Reckwitz (2003) analyses that with the claim that practical doings and sayings constitute action (as opposed to thought and cognition), practice theories position themselves as an alternative to the

traditional social theories which have in their view a too “intellectualised” understanding of social existence. Practice theories do not rely on dichotomies such as mind and body, or subject and object. The status of the respective second element (body, object), which in traditional dualism loses out against the primacy of the first element (mind, subject), is rehabilitated in practice theories’ understandings of both elements being indispensable components of social existence (p. 291). Practices are a mode of ordering of everyday life (Gherardi, 2006, 2012), and the material is bound up in this organising in an integral way which is just as open and indeterminate as human action (Orlikowski, 2007). What’s more, and what distinguishes practice theory also from other practice-focused concepts such as the ‘communities of practice’, is that the social world is not “preconstituted” by a structuring context, but is “actively constructed in ‘situational frames” (Gherardi, 2012, p. 26). This view makes practice theory a useful tool for analysis of everyday interactions and their ordering principles.

This paper argues that alternative theories of social existence and change, that do not accept the primacy of the human mind and of human agency in the determination of what is happening in the world (Coole & Frost, 2010; Harman, 2016; Schatzki, Knorr Cetina, & Von Savigny, 2001) highlight challenges and issues in the current conceptions of user experience design. We are going to illustrate these areas of concern by bringing together practice theory ideas with concepts of user experience design. The first challenge is that ‘experience’ remains a largely vague concept in guiding the designing of it. Secondly, it is assumed that experience can be represented like an object. The third issue which deserves a critical look is the assumption that the user’s behaviour is driven by choice, just as the design outcome. And directly related to this is, fourth, the possibility that neither use nor design outcomes work in a rational manner, and that what divides users and designers may be different elements to those commonly assumed.

## **What is UX?**

What is UX? This question has been asked all over the web (e.g. UX Mastery, 2012) and in scholarly articles (Law, Roto, Hassenzahl, Vermeeren, & Kort, 2009; McCarthy & Wright, 2004) since UX existed. Hassenzahl and Tractinsky (2006) summarise as follows:

“UX is about technology that fulfils more than just instrumental needs in a way that acknowledges its use as a subjective, situated, complex and

dynamic encounter. UX is a consequence of a user's internal state (predispositions, expectations, needs, motivation, mood, etc.), the characteristics of the designed system (e.g. complexity, purpose, usability, functionality, etc.) and the context (or the environment) within which the interaction occurs (e.g. organisational/social setting, meaningfulness of the activity, voluntariness of use, etc.)." (p. 95)

UX clearly brings some headway in between itself and HCI's concept of user needs and the usability of systems. It is "more than" just user needs. This expansion from the realm of traditional HCI to what UX designers are dealing with when designing for 'experience' appears to be well detailed in the elements it is made up of, but lacks an explanation of how these internal states, product characteristics, and new elements such as context, play together in a "subjective, situated, complex and dynamic encounter" and in what way the designer should be concerned with it. The contextual factors mentioned are presented as the supplement that sets UX apart from traditional HCI, but for that matter they are explained relatively little. Designers are only reminded to "keep in mind" the other human goals. It seems that UX designers, in their work of designing for experience, are left to fall back to methods from traditional HCI (on user needs and the usability of systems), from before the realm of design was expanded to 'user experience'. For example, it is not clear in user experience design literature whether designers design *the* user experience or *for* user experience? While some accounts clearly advocate for designers taking control over the user's experience (Garrett, 2010; Nielsen, 2000), others at least put a question mark to whether the designer can exert so much control (Hassenzahl & Tractinsky, 2006, p. 94). In any case, a claim to be able to design *the* user's experience, would be ignoring social sciences research that has been done on the situated and indeterminate character of interaction (Suchman, 1987), that interactions cannot be planned for, and would be a "return to the simplicity of a technologically determinist position on what experience is" (McCarthy & Wright, 2004, p. 10).

Overall, there is no clear 'textbook' advice on whether and how to design the experience. The general consensus amongst practitioners about UX reflects still the concepts coming from traditional HCI (Law *et al.*, 2009). HCI, firmly committed to usability still, is not equipped to dealing with experience, say McCarthy and Wright (2004, p. 6). It seems that this moving beyond needs, this acknowledgement that there is more than just the relationship 'human-machine', requires a theory or concepts which have not yet been found and appropriated by user experience design.

## Experience as representation

Scientific theorising supports the world view that things are fixed, whereas design assumes that things are improvable and changeable (McCarthy & Wright, 2004, p. 20). Therein lies a conflict, which must sit very uncomfortably with UX design. On the one hand UX design uses HCI's theories to research user needs, which are treated as fixed, but on the other hand it attempts to improve the user experience, which is described as a "subjective, situated, complex and dynamic encounter" (Hassenzahl & Tractinsky, 2006, p. 95). Superficially it may look like as if designers could escape this discrepancy all together, because designing is rarely treated as a scientific activity. But as soon as designers actively try to understand how an object is going to be used and experienced, they are involved in tacit or explicit representations of future action and experience - via service blueprints, experience maps, user journeys and scenarios etc. How does this fit together?

UX design's idea that experience is a situated and dynamic encounter seems to be better aligned with constructivist ideas of the social sciences, which assume that reality is a co-construction in interaction between people and artefacts (Knorr-Cetina, 1981; Suchman, 1987). Action is here described as something that emerges in practice through organising, and cannot be represented as a plan, because of the many contingencies that arise as action unfolds over time (Gherardi, 2006, p. xiii).

"There is nothing behind the appearances encountered in experience. Appearances are not simply how something manifests itself to us, at the same time 'holding back' something of itself. Experience is the area in which reality shows itself as what in itself it is." (Schatzki, 1996, p. 28).

But we do not know what these alternative conceptions of action and experience mean for the wider practice of professional UX design which currently rely on objective representations of use and experience. UX design as it stands has been drawing from scientific theories postulating reality as fixed, and action as guided by intention and planning (see Norman, 1988). Hassenzahl, Diefenbach, and Göritz (2010) acknowledge experiences as something unique and never returning, but conclude that if it was not possible to represent experience and action, it would be the "end of story for experience in HCI, because designing for bygone and unrepeatable experiences is futile" (p. 354). It may indeed be the end of story of experience in traditional theories used in HCI, but it may be the beginning of trying out other theories, which do accommodate change and situated fluidity in action.

## Agency and experience

HCI's traditional theories presume that people act with intention. Norman (1988) describes in his "7 stages of action" how humans perceive the world, interpret it, evaluate it, form goals, make intentions, plan actions, and bodily execute their plans. HCI assumes that humans are rational agents who shape the world around them. But if we just consider how "stuff" is involved in "creating new practices and with them new patterns of demands" (Shove *et al.*, 2007, p. 10) then this poses a real challenge to HCI's notion that agency is sitting with the intentions and capacities of the human mind and body alone.

In sustainability research, it was shown that energy consumption research focussed on people's attitudes and behaviour did not sufficiently explain consumption patterns (Gram-Hanssen, 2009). Instead, looking closely at how people live their practical lives, what material and what meanings are involved in everyday activities, gives a much clearer picture of how innovations are taken up by people, and sustained (Shove & Pantzar, 2005). Practice theoretical concepts trace how elements in people's lives bundle to practices and arrangements. The closer elements are linked within a practice, the more often they are repeated, and the more interlinked they are with other practices, the more likely it is that practices are sustained, and the harder it is to change them (Schatzki, 2002). As an example of a shared material across multiple practices let's envisage tooth brushes. Let's claim tooth brushes are part of the practice of tooth brushing and part of the practice of tile grout cleaning. If we wanted to support – say an innovation in cleaning teeth (maybe because we have identified a problem with the state of people's teeth) – and we looked at the social practice of tooth cleaning and its material elements, we might find that toothbrushes have other uses too, such as household cleaning. And if tooth brushes were removed from the new method of cleaning teeth, it might lead to the use of harsher cleaning detergents on tile grouts. Or the new method might not be successfully taken up because people take for granted their grout cleaning routine as it is. In any case, the point is that it is likely that such a potential link would not show up in a behavioural analysis on users' tooth brushing routine.

If UX design really deals with "more than" just user needs (Hassenzahl *et al.*, 2010), basically extending product design's realm of pure usability concerns to embracing the entire life context of product and user, then it needs to extend its methods of investigation, and look beyond users' attitudes and behaviours. Looking at people's lives, at the practices involved,

including material arrangements, are much more likely to give a clear picture of why things are as they are and how they can change.

## **Designers and users – are we all just the same?**

The statement that UX design has to move beyond treating user needs as fixed, also has a direct implication for UX design's work methods of facilitation and creation of ideas, solutions and artefacts. In HCI it is commonly assumed that designers' work is to understand users (see Portigal, 2013) and to identify users' goals, reasoning, reactions and guiding principles (see Young, 2008; Young, 2015), and to then apply this knowledge to products and services. Young (2015) calls the process of enriching products with user knowledge "to apply empathy" and it is interesting how she proposes to do the very same thing within the organization with co-workers. A blurring of lines is beginning to show here. Why would a user-research method be applied to co-workers within the same production process? Further blurred are the lines in service design, when the talk is of "highly complicated networks of people inside and outside the organization. The staff who interact with customers are also users [...]" (Polaine, Lovlie, & Reason, 2013, p. 36).

Designers and users – who are they exactly, and how is the distinction made? Perhaps it is useful to look at the history of these bounded entities, 'the designer' and 'the user': Kuutti (2001) describes how the concept of "the user" has changed over the decades, influenced by various disciplines of study and thought: The user as a cog in the rational machine; the user as a source of error; the user as a partner in social interaction; the user as a consumer. This continuous change in the conception of the user over time, has opened the concept up to imagining users today as active participants in the design of their everyday lives (Warde, 2005). Woolgar's investigation of design practices in a micro-computer manufacturing organisation (1991), show the boundary between the "inside" of the organisation and the "outside" of it as what defines the 'designer' and the 'user'. It does become obvious how deliberate this boundary is configured by the producing organisation and hence becomes a defining property of the relationship to the 'user'.

Dividing lines between designer and user are arbitrary and are perhaps better seen as relicts from production models utilised in mass production, where specialisation of work tasks meant that users were removed several links in the chain linking use with retail, production and design (Bohemia &



Harman, 2008; Hysaalo, 2009). In today's world of technology design and consumption, the old bounded entities of 'user' and 'designer' are perhaps more appropriately reassigned to activities such as 'using' and 'designing', both of which involve humans, whether they are consumers of technology, or professional designers of technology.

To return to the example of 'toothbrushes': the humans who design toothbrushes and the humans who use toothbrushes are likely to overlap. There are different practices in which toothbrushes are involved; the practices of earning money, for example, and the practices of tooth brushing, or the practices of tile grout cleaning. But the humans involved can be the same. Those who want to making money out of toothbrushes may also use them to clean their teeth. And those who clean their teeth may also make money out of their fine-looking teeth. And those who use tooth brushes for teeth cleaning, may also creatively assign them to the use of tile grout cleaning, which is itself an act of designing.

But: "If everyone is a designer, to what special expertise does the profession lay claim?" (Shove *et al.*, 2007, pp. 136-138). The concept of design is changing, and professional design is still catching up. Perhaps it is time for professional design to look beyond the conception of the designer as the agent of design? Without challenging the need of professional design, it is certainly time to regard what professional design practice is made up of, and how its elements create design outcomes.

"Product designers rarely determine what gets made, but their working methods embody and reproduce ideas and concepts that matter for the detail of material culture and for the practices of which it is part" (Shove *et al.*, 2007, pp. 136-138). UX design as it stands, focuses on the product characteristics and on the users' experience. Our earlier point was, that UX design comes short of a theoretical concept that allows to focus on the social context of use. But rather than following down that road, we propose to take a step back to take a look at the social context of design, and ask: In what way are designers' own materials and tools, and designers' own tasks, rules and understandings influential on the outcomes of design?

## **Conclusion**

We argued that there are four challenges with current conceptions of UX design, and put them in context with social theories of practice. This view on design as it stands, along with our own views and experience of the industry, prompt us to propose a further investigation into the practices of

professional designing. Kimbell (2012) proposed the concepts “design-as-practice” as a way of thinking about design and the social embeddedness of designers, and “designs-in-practice” to emphasise how interwoven and unfinished designs (artefacts) are. In practice theory there are clear concepts of how experience as a “situated, complex and dynamic encounter” (Hassenzahl & Tractinsky, 2006, p. 95) pans out in reality. Here is a theory offered for what UX design grapples with to define through current theories. Of course, these concepts challenge UX design’s idea of the neat object of experience, as well as the individual agency ascribed to designers as the supposed agents of design. However, we have seen, for example, in sustainability research of energy (Gram-Hanssen, 2009) that common theories of use do not bring useful pathways of intervention for behaviour change. That the old boundaries between ‘designer’ and ‘user’ do not feel right anymore can be seen in the design literature devising methods that are being equally applied to people on the production-side, as well as people on the use-side (Polaine *et al.*, 2013, p. 36; Young, 2015). We have also seen that the material has a significant role in how innovations come into being (Shove & Pantzar, 2005). Technology is social, and intrinsically linked with work practices (Orlikowski, 2007). When considering what design practices may be made up of, it may be possible to explain better the experience that designers have of their work, and of the organisation within which they work. It may be possible to explain how things sometimes end up working, and sometimes not. We propose to take this as an opportunity, and to define the questions of which the answers can support such an understanding and awareness of designing as a practice. What elements make up professional design practices? How does agency emerge, if not from the supposed agent of design – the designer? And in what way does the designer engage in these practices? Work tools and materials, spatial positions like seating arrangements of team members, engagements with people (engineers, users, managers, etc.), varying things people want to achieve, varying rules and constraints of what is within the acceptable, and certain agreed understandings of the world... The relationships between all those elements, which are in flux, have an influence on designs. Or, as practice theory would say, all these elements make up the practices of designing, and outcomes in design emerge from the interplay of all these elements within practices. Such a description of the continuous encountering and negotiating between the elements contained in the practices of designing, can be helpful for designers in developing an awareness of their own experiences and how they are operating within

design practices. Such an awareness may “engender a deliberate process of learning from experience and of sharing and institutionalising it into actionable knowledge”, which can enable the individual to actively participate within practices. (Gherardi, 2006, p. 235).

## References

- Bijker, W. (1992). The Social Construction of Fluorescent Lighting, Or How an Artifact Was Invented in Its Diffusion Stage. In W. Bijker & J. Law (Eds.), *Shaping Technology / Building Society* (pp. 75–102). Cambridge, Massachusetts: The MIT Press.
- Bohemia, E., & Harman, K. (2008). Globalization and Product Design Education: The Global Studio. *Design Management Journal*, 3(2), 53–68.
- Brown, T. (2009). *Change by design: how design thinking transforms organizations and inspires innovation*. New York: HarperCollins Publishers.
- Coole, D., & Frost, S. (2010). *New Materialisms: Ontology, Agency, and Politics*. Durham: Duke University Press.
- Dreyfuss, H. (1955). *Designing for People*. New York: Simon and Schuster.
- Garrett, J. J. (2011). *The elements of user experience: user-centered design for the web* (2nd. ed.). Berkeley, CA: New Riders.
- Gherardi, S. (2006). *Organizational knowledge: The texture of workplace learning*. Oxford, UK: Blackwell Publishing.
- Gherardi, S. (2012). *How to conduct a practice-based study: Problems and Methods*. UK: Edward Elgar Publishing Limited.
- Gram-Hanssen, K. (2009). Standby Consumption in Households Analyzed With a Practice Theory Approach. *Journal of Industrial Ecology*, 14(1), 150–165.
- Harman, K. (2016). Examining work-education intersections: the production of learning reals in and through practice. *European Journal for Research on the Education and Learning of Adults*, 7(1), 89–106.
- Hassenzahl, M. (2008). *User Experience (UX): Towards an experiential perspective on product quality*. Paper presented at the IHM, Metz, France.
- Hassenzahl, M., Diefenbach, S., & Göritz, A. (2010). Needs, affect, and interactive products – Facets of user experience. *Interacting with Computers*, 22(5), 353–362.
- Hassenzahl, M., & Tractinsky, N. (2006). User experience - a research agenda. *Behaviour & Information Technology*, 25(2), 91–97.

- Hysaalo, H. (2009). A Break from Novelty: Persistence and Effects of Structural Tensions in User-Designer Relations. In A. Voss, M. Hartswood, R. Procter, M. Rouncefield, R. S. Slack, & M. Buescher (Eds.), *Configuring User-Designer Relations*. London: Springer-Verlag.
- Kimbell, L. (2012). Rethinking Design Thinking: Part II. *Design and Culture*, 4(2), 129–148.
- Knorr-Cetina, K. D. (1981). *The manufacture of knowledge: An essay on the constructivist and contextual nature of science*. Oxford: Pergamon.
- Krippendorff, K. (2006). *The Semantic Turn: A new foundation for design*. Boca Raton, FL: CRC Press.
- Kuutti, K. (2001). *Hunting for the lost user: From sources of errors to active actors - and beyond*. Paper presented at the Cultural Usability Seminar, Media Lab, University of Art and Design, Helsinki.
- Latour, B. (1990). Technology is Society Made Durable. *The Sociological Review*, 38(S1), 103–131.
- Law, E., Roto, V., Hassenzahl, M., Vermeeren, A., & Kort, J. (2009). *Understanding, Scoping and Defining User eXperience: A Survey Approach*. Paper presented at the CHI 2009, Boston, MA, USA.
- Margolin, V. (2013). Design Studies: Tasks and Challenges. *The Design Journal*, 16(4), 400–407.
- McCarthy, J., & Wright, P. (2004). *Technology as experience*. London: The MIT Press.
- Miller, T. (2014). Cultural Work and Creative Industry *The Cultural Intermediaries Reader* (pp. 25–34): SAGE Publications.
- Nielsen, J. (2000). *Designing web usability: The practice of simplicity*. Indianapolis, Ind.: New Riders Publishing.
- Norman, D. (1988). *The Design of Everyday Things*. New York: Doubleday.
- Orlikowski, W. J. (2007). Sociomaterial Practices: Exploring Technology at Work. *Organization Studies*, 28(9), 1435–1448.
- Polaine, A., Lovlie, L., & Reason, B. (2013). *Service Design: From Insight to Implementation*. New York: Rosenfeld Media.
- Portigal, S. (2013). *Interviewing Users: How to Uncover Compelling Insights*. New York: Rosenfeld Media.
- Reckwitz, A. (2003). Grundelemente einer Theorie sozialer Praktiken. *Zeitschrift fuer Soziologie*, 32(4), 282–301.
- Schatzki, T. R. (1996). *Social Practices: A Wittgensteinian Approach to Human Activity and the Social*. Cambridge: Cambridge University Press.

- Schatzki, T. R. (2002). *The site of the social: A philosophical exploration of the constitution of social life and change*. State College: The Pennsylvania State University Press.
- Schatzki, T. R. (2011). Where the Action is (On Large Social Phenomena Such as Sociotechnical Regimes) *Sustainable Practices Research Group Working Paper 1*. Manchester: University of Manchester.
- Schatzki, T. R., Knorr Cetina, K., & Von Savigny, E. (2001). *The Practice Turn in Contemporary Theory*. London: Routledge.
- Shove, E., & Pantzar, M. (2005). Consumers, Producers and Practices: Understanding the invention and reinvention of Nordic walking. *Journal of Consumer Culture*, 5(1), 43–64.
- Shove, E., Watson, M., Hand, M., & Ingram, J. (2007). *The Design of Everyday Life*. Oxford: Berg.
- Singleton, W. T. (1974). *Man-Machine Systems*. England: Penguin Education.
- Suchman, L. (1987). *Plans and situated actions: The problem of human-machine communication*. Cambridge: Cambridge University Press.
- UX Mastery (Producer). (2012, October 6th, 2016). What the #\$\$@ is UX Design? Retrieved from <https://www.youtube.com/watch?v=Ovj4hFeko7c>
- Warde, A. (2005). Consumption and Theories of Practice. *Journal of Consumer Culture*, 5(2), 131–153.
- Weinschenk, S. (2011). *100 things every designer needs to know about people: What makes them tick?* Berkeley, CA: New Riders.
- Woolgar, S. (1991). Configuring the user: the case of usability trials. In J. Law (Ed.), *A sociology of monsters: essays on power, technology and domination*. London: Routledge.
- Young, I. (2008). *Mental models aligning strategy with human behavior*. New York: Rosenfeld Media.
- Young, I. (2015). *Practical empathy for collaboration and creativity in your work*. New York: Rosenfeld Media.