Introduction

Like any discipline, design has its conventions. Certain tools, techniques and methods have become common in design practice or even typical of design as a whole. Many have argued that design is characterized by particular ways of thinking and making. Indeed, if we follow Diana Agrest's argument—of nearly a half-century ago—concerning "design versus non-design," distinctive cultural codes ingrained in practice are what differentiate design from other disciplines. Disciplinary conventions provide good starting points for inquiry—common grounds worthy of close examination through which more nuanced and new perspectives may emerge as well as opportunities to further deepen, challenge, or change those very disciplinary conventions.

The contents of this issue probe into familiar design tools and standard design methods. Authors examine rulers and dividers, user-centered methods, and the service blueprint. Their motivation is not technical; authors do not dwell on defining nor applying these. Instead, tools and methods are a basis for inquiring into the nature of designing and cultures from which design emerges. For example, authors explore how a given tool or technology affects the cognitive processes of designers and users, and how design methods relate to particular socio-political circumstances. Close examination reveals how differences matter—for example, different tools produce different cognitive effects, and different social structures are embedded in methods. Thus, the articles have implications not only for design theory but also for practice in which the assumptions and choices of designers do matter.

Examining two common design tools—rulers and dividers—Philip Luscombe undertakes a profound discussion of "technologie." Drawing upon theories of mind and cognition, he articulates the role of such tools within processes of thought and action. Pragmatically, a tool extends our capacity to carry out a given practical goal. Tools also provide feedback throughout a design process. Thus intertwined with our ways of exploring and of working things out, tools also shape our ways of knowing. Differences between even

our most basic tools, he argues, are not only a practical but an epistemic matter. Luscombe further points at computer-aided design (CAD) software, which performs some functions of rulers and dividers but uses very different logics. An implication is that different tools affect not only the design produced but also the design process, design knowledge and, indeed, the designer.

Maria Göransdotter and Johan Redström examine how notions of "use" and "user" came into Swedish Modern design. They provide a detailed account of the Home Research Institute in the 1940s, which addressed conditions and practices of housework through ethnographic and time studies, as well as design-oriented methods, such as prototyping and testing of domestic tools and products. This precursor to user-centered design, they argue, stems from a particular set of socio-political ideals. As a key institution and instrument of Swedish welfare state reform, the home brought women to the fore as founders of the institute and as housewives possessing unique knowledge and design expertise. Göransdotter and Redström articulate how justice, representation, and power thus underpin the tradition of Swedish user-centered design. An implication of their critical historiography is that different socio-political ideals can be implicit in even our most common design methods.

Miso Kim poses a fundamental question for service design: "What is service?" Instead of typical responses stemming from marketing and business, Kim looks to history. Tracing the Latin meaning of "servitium," she starts with Greco-Roman conceptions. Premised on a particular economic system of labor in the ancient world, she argues that service can be articulated in terms of different social groups, including slaves as objectified property who perform basic services, free laborers paid for skilled services, and citizens voluntarily providing public service. Kim further considers Western Medieval Christianity and a conception of service ultimately to God and, during the subsequent Protestant Reformation, a shift to a liberal system of service transaction among working individuals. She uses four conceptions as different lenses to reflect upon an archetypical tool in service design—the service blueprint.

Rulers and dividers, user-centered design methods, and service blueprints—things so commonplace in design practice, they tend to be taken for granted. The first three articles in this issue expand our understanding of these by drawing out the larger design issues and articulating the meaningful differences and choices relevant to practice. The next two articles further reconsider what should be central to design theory and education.

Maliheh Ghajargar and Mikael Wiberg discuss reflection as a fundamental question for interaction design. They argue that interactivity, one of four outlined characteristics of smart artifacts, expands the possibilities for design to steer users' sensory and cognitive processes and, ultimately, their behaviors. Consequently, selecting interactive technologies opens the opportunity and perhaps even a responsibility to more profoundly address "reflection" as a design issue. Ghajargar and Wiberg revisit HCI discourse and articulate reflection within "conversations with the materials at hand" (Donald Schön). They argue that the materials of interaction design can mediate and stimulate users' reflections upon their own behaviors, which they may modify in a more sustainable or healthy way. As the nature of interactivity is changing through artificial intelligence (AI), the implication is that reflection becomes an even more urgent issue.

The choice to redirect design for social purposes, as in social design, has profound consequences according to Matthew W. Easterday, Elizabeth M. Gerber, and Daniel G. Rees Lewis. Altering the subject matter of design education requires corresponding and profound reconsideration of design education. The authors point out that social design entails that students gain particular competencies, such as an ability to work with social complexity within and across multiple systems, sectors, and sites. They argue for developing a formal theory of social design education and reconsideration of educational environments, curricula, and teaching materials. Outlining a range of initiatives in the United States, the authors discuss limitations of both established and emerging approaches, the potentials of project-based learning, online platforms and community hubs, and ultimately, they argue for a network-based model. Through their experiences of educational development across the national organization Design for America, they outline a series of approaches and techniques better suited to social design education.

This issue also contains three reviews: Federico Campagna's book review of *Game Design* by Gundolf S. Freyermuth, Adam Kallish's book review of *Make it New* by Barry Katz, and Dimitry Tetin's exhibition review of *Milton Glaser: Modulated Patterns,* curated by Blazo Kovacevic.

Cumulatively the articles in this issue challenge us to reconsider what is central to design. One further piece continues this challenge in the form of a rallying call—the Montréal Design Declaration recently presented at the 2017 World Design Summit. The declaration is authored by fourteen international design and non-design organizations that assert a shared understanding of the

fundamental role of design in shaping the world around us. The call is for a World Design Agenda capable of fully engaging with other global challenge agendas including the United Nations 2030 Sustainable Development Goals, New Urban Agenda, Paris Climate Accord, and the UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions. *Design Issues* has a tradition of publishing design declarations and manifestos, which are important forms of expression in design, suited both to taking a stand and uniting across differences.

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