Introduction

As the field of design continues to expand in practice, so too does design scholarship. For a journal of design history, theory and criticism, that means there is an ever more pluralistic array of research within its pages. This scholarship—at one and the same time—embraces traditional humanistic pursuits, such as history; and it engages with new endeavors, such as citizen science. As this issue demonstrates, the pages of *Design Issues* continue to express the vibrancy of the field of design studies.

Mads Nygaard Folkmann begins his essay, "Unknown Positions of Imagination in Design," with the paradox that although imagination is foundational to design, our ways of describing imagination are lacking. Rather than following the standard approach of exploring "creativity" in the designer or design process, Folkmann focuses our attention on how imagination works in the construction of meaning. For Folkmann, imagination is relational to knowledge, to the question of "What can be known?" Although many theorists highlight the synthetic activities and outcomes of design, Folkmann notes that the chaotic aspects can be productive for taking designers to the edge of knowledge and even beyond, thereby expanding the possibilities for imagination. Folkmann ends his essay with a four-stage process of making meaning through imagination, which provides insight into the processes of design. We continue to explore what it is that designers do and how perspectives, such as Folkmann's, are useful for gaining understanding into the very foundations of design thinking and action.

The most banal of objects can become provocative when they combine with technologies that change their function or character. In "Dumb to Smart Power Outlets: A Design Perspective on Smart Grids," Maddalena Mometti provides us with a historical perspective on the changing aspects of power outlets as they become infused with technological capacities. Mometti begins by tracing the development of the power outlet as we know it today—from the experiments of Edison, to the patents of Hubbel, and then through a case study of outlet design, as product design in Italy. She then provides us with an overview of smart objects and "Internet of Things," and she explains how these concepts lead to a reconceptualization of the power outlet itself as being "smart." As an outcome of this transformation, Mometti argues that power outlet

design is now a concern for interaction designers, as the power outlet itself becomes an interface between the "the physical world (which needs an energy supply) and the immaterial world (which needs to create meaning and logical connections)."

In "'Modern' Graphic Design in Greece After World War II," Marina Emmanouil explores how the struggle of post-war reconstruction in Greece was, in part, reflected in the struggles between historical and modern imagery in Greek graphic design. The styles of modern art, typography, and layout that were developing globally post-war were, at first, seen as being in conflict with Greek identity. As Emmanouil explains, the adoption of these styles by Greek designers was debated. With the advent of dictatorship in Greece, perspectives toward and uses of, graphic design changed once again. A key insight from Emmanouil is that the development of Modern Greek graphic design was a dynamic process. As she comments, "The status of Greek graphic design at any one time can be gauged from the extent to which it critically responded and adhered to imposed or imported ideas of design." Understanding the history of design as a history of the development of cultural identity reinforces the complex interplay of design and society throughout the Twentieth Century.

In "Citizen Science and Open Design: Workshop Findings" Robert Phillips, Sharon Baurley, and Sarah Silve present a case study that explores new practices and new settings of design. Specifically, they investigate the topics of open design and digital manufacturing in the context of citizen science, which is a cluster of practices that enroll non-scientific experts in the collection and analysis of scientific data, often related to the environment. Through a series of design workshops, the authors explored perceptions of open design and digital manufacturing, and how participants, of varying backgrounds and commitments, might make use of these technologies toward citizen science ends. From their workshops they highlight a series of themes of significance for design and provide insights both to the workshop setting itself and to broader contexts of open design and citizen science. Underlying this case study are significant shifts in how designers work with communities, technologies, and too, the public politics and implications of science.

In the final article, "Modeling Business Models," Lianne Simonse explores a range of methods that can be used in strategic design practice to give visual form to business models. She begins with an introduction to what business models are, and then proceeds to discuss how we might approach business models as from a design perspective, as a practice of modeling. Simonse draws together multiple design scholars, including Cross, Schön, and Simon, to outline what modeling is, and is not, as a design activity.

Using a set of case studies, Simonse discusses business modeling in greater detail, augmented by a series of images. A key insight that Simonse makes is that business modeling is actually a process of co-modeling, that is, the design activity of business modeling is a cooperative effort. This article, as the others in this issue, continues to broaden our understanding and appreciation of design as an increasingly diverse and important set of practices and perspectives.

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