Artifact: The Interaction of Practice and Theory

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> Design is about making and reflecting, about bringing the mind and hand together. Good design theory is inspired by practice, and good practice values reflection. (Erik Stolterman – as we began to consider this project)

Whether or not theory and practice always believe that they are engaged in a dance that brings mind and hand together, we argue here that design must be more explicitly described as that dance of making and reflecting – even when it is hard to understand the choreography. We take our cue in part from *Artifact's* mission to encourage contributions that will be relevant to both professionals and academics, to both practice and theory. But in this issue, we take that purpose a step beyond encouraging cross-relevance. Instead, we were determined to bring both sides to the dance floor in order to start identifying not just the value that is unique to each partner, but more importantly, in this situation, the value gained by the interaction of the two. In the spirit of supporting this interaction, we invited authors and issued a call for reviewed papers that would contribute to our understanding.

While one might argue that practice and theory have gotten along just fine up to this point by engaging in that form of flirting where one side kicks the other to signal interest – something akin to what nine-year-olds practice in the playground – neither side learns much about the other from that exchange. However, just as kids always get to the next phase so that the planet can stay populated, practice and theory have their own next phase: one that we argue might help design more effectively reach its potential.

The contributions made here take many forms, from specific ways that theory can inform business practice (Geldof & Vandermeulen), to a proposition that a professional tool can serve as a theoretical tool, and as an aid to pedagogical practice (Lupton). Our authors work from perspectives in communication design, user-centred design, interaction design, and industrial design. Additionally, these authors represent an array of academic, professional, and cultural backgrounds.

As we narrowed our search to the eight authors you will find in this issue, whose manuscripts, we believe, begin to move the interaction of theory and practice from early flirting to accomplished dancing, we were not disappointed. We begin with an article by Sabine Geldof and Joannes Vandermeulen. Sabine earned her Ph.D. by studying language technology as one method of improving humancomputer interaction. Her co-author, Joannes, is the founder and owner of Namahn, a user-centred design business in Brussels. He also teaches user- centred design at the postgraduate level. As two collaborators at Namahn, they explain why the firm decided to incorporate academic research into an improved business model, one in which research contributes to their bottom line. Their article, *A practitioner's view of humancomputer interaction research and practice*, considers the elements involved in developing a successful synthesis approach to gathering research data and transforming those data to a research approach for their firm. Additionally, they present one way that a professional team can effectively function as a research team.

In the future, Namahn might also benefit from an improved search engine now being developed by Meredith Davis and her students Matthew Peterson, Kelly Cunningham, and Steven Harjula. Meredith is the Director of Graduate Programs in Graphic Design, and Director of the interdisciplinary PhD in Design at the College of Design at NC State University. The work she and her students produced, *Making sense of design research: The*

search for a database, considers a problem too often faced by researchers and practitioners in design, one that the authors argue undermines the growth of the field – that is the problem of developing relevant scholarship. Identifying useful scholarship in this emerging discipline is so difficult that ''more than half of the knowledge production of a small but emerging research culture is unavailable to students and to the field in general''. The authors' approach, which introduces a curator-driven system to both oversee and locate titles, makes searches potentially more effective by increasing the likelihood that the titles found will be increasingly relevant to the researcher.

From another perspective in theory/practice interaction, Ellen Lupton, director of the Graphic Design MFA program at Maryland Institute College of Art (MICA) in Baltimore, argues for a perspective on professional software that encourages its use in the classroom as an analytical tool. In *Learning to love software: A bridge between theory and practice*, Ellen notes that by synthesizing the specifics of software-based production, with overarching theoretical elements based on Bauhaus pedagogy – which software menus and commands echo – students can gain a stronger understanding of form along with a way of communicating that understanding to other students and professionals.

An expanded view of production, offered in order to broaden understanding of fundamental aspects of design, emerges from another research perspective in Steven R. Haynes and John M. Carroll's *Theoretical design science in humancomputer interaction: A practical concern?*. Steven is an Assistant Professor of Information Sciences and Technology at Pennsylvania State University. His research interests include design research, design rationale, and explanations derived from designing. John is the Edward M. Frymoyer Chair Professor of Information Sciences and Technology at Pennsylvania State University. His research interests include methods and theory in humancomputer interaction. These authors argue that envisioning and implementing a design can be a form of theorizing, one that is just as important as empirical evaluation. They note that this more novel method might be especially useful if the field identifies an ''epistemological grounding for design

as a knowledge-generating activity'' and develops a way to assess design theory from a bounded methodological perspective.

While Steven and John argue that the process of solving design problems can lead to the development of better theories, Yoko Akama, Roslyn Cooper, Laurene Vaughan, Stephen Viller, Matthew Simpson, and Jeremy Yuille, Australian researchers, argue for the use of artifacts as an aid to understanding how collaborative teams function. Yoko is finishing her practice-led Ph.D. at RMIT University, School of Applied Communications. Roslyn holds an honours degree focused on Interaction Design and IT from the University of Queensland. Her background is in the health domain. Laurene is Research Leader and Postgraduate Coordinator in Communication Design for the School of Applied Communication at RMIT University. Stephen is a researcher and educator in people-centred design methods. Matthew Simpson is a UI designer working with the Geo group at Google. Jeremy is an interaction designer, digital media artist, and academic specializing in interactive audiovisual and design systems.

In *Show and tell: Accessing and communicating implicit knowledge through artefacts*, these researchers argue that a novel interview technique, using indigenous and introduced artifacts, introduces a *language* of artifacts that aids interaction and understanding between interviewer and participant, yielding richer data for study. Indigenous artifacts, in this case, are often elements tied to the development of the artifact, or the final artifact itself, while introduced artifacts are those that the interviewer brings to the interaction. The outcome of their work uncovers useful possibilities for improved collaborative scenarios.

A response to their work, from a practice standpoint, comes from Marc Rettig, who notes in *Do and think and play and show and tell: Artefacts all the time*, ''the work of academics and professionals sometimes intersects''. In this case, that intersection concerns the research his firm regularly conducts, which in some respects mirrors the academic study of indigenous and introduced artifacts, while in others expands on the scope of *Show and Tell's* inquiry – perhaps fuelling new research interests concerning interview methods. Marc is the co-founder of Fit Associates,

LLC, a Pittsburgh firm that works to improve the relationship between products and their end users by considering the complexities of customers' lives. Fit's use of artifacts includes constructing timeline collages to elicit personal stories, and observing the use of personal artifacts as elements embedded with rich personal meaning, meaning that is not obvious at first glance. Further, in his response to *Show and Tell*, Marc makes the case that an object does not so much yield a language of artifacts as it contributes non-verbal aspects to the lexicon, aspects that enrich rather than replace.

While understanding clients helps to optimize product functioning, understanding patients in crisis, and knowing how to translate their complaints into cures, helps to optimize people functioning. In that second case, artifacts can figure prominently in the area of medicine. In *Theory meets practice in the design of e-support for junior registrar doctors*, Anne Marie Kanstrup and Niels Boye consider the rich interaction between theory and practice in both design and medicine, which informed the development of the hardware and software needed to support doctors in training. Anne Marie received her Masters and Ph.D. in Human Centred Informatics from Aalborg University, Denmark. She is particularly interested in the relationship between designers and users within the arena of information systems. Niels is a specialist physician in internal medicine and endocrinology. Their collaboration revealed that both design and medicine contain aspects of theory that morph into, and must interact with, the heuristics of practice. That joint predicament informed decisions to design theorypractice interaction in the development of a prototype for an e-support system, one that doctors could use to work between the theory they had learned in the classroom and the practice that was now a part of their training.

However, while the synthesis of practice and theory often proves to be essential, Jon Kolko warns in his essay *The tenuous relationship between design and innovation* that neither should design be conflated with innovation, nor should theory and practice lose their critical distinctions. Jon, a Senior Design Analyst at frog design who also was a Professor of Interaction and Industrial Design at the Savannah College of Art and Design, notes that design and innovation have begun to be used interchangeably,

when in fact they represent distinct differences in approach. Further, he argues that design research and practice are also often conflated. He notes that while design research encompasses much of design practice, research puts a unique focus on pure discovery, with the hope that some of those pure discoveries might be useful in future pragmatic applications.

In presenting these contributions, we hope to encourage another look at the interaction of theory and practice from a viewpoint that not only acknowledges the differences between the two, but also considers their fruitful integration in order to improve the dance they craft together.

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