

# Witnesses to Design: A Phenomenology of Comparative Design

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This research is concerned with describing the experience of being a designer and doing design. Many case studies have described individual experiences, both of designers reflecting on their own work, and academic studies of expert design work as performed in a professional context. Such studies are an important component of design research, and provide an essential foundation and sounding board for design theory. Traditionally, this research has concentrated on practice in a particular industry or company, generalizing to an industry sector or designing at large, from a relatively small number of cases. We depart from the common practice by comparing the experience of designers across a very wide range of domains, reported outside of its normal professional context, and in comparison to other design contexts.

We report on a series of research workshops, each including several professional designers, initiated with the specific objective of making a comparison across design disciplines. At each workshop, designers presented case study illustrations of their practice for discussion with designers from other disciplines. This paper describes the motivation, methodology, and results of this project. We also propose a novel theoretical basis for our comparative approach, and the implications that this might have for other design research.

The nature of our research and findings naturally is quite different from research that focuses on specific design activities. Previous comparative research more often has aimed to establish general criteria for defining concepts and theories, relating core concepts in research and theory-making to designing and designs<sup>1</sup> Our aim is not to produce generic findings applying to all cases of design in all circumstances, but rather to develop a rich understanding of recurring behaviors across different domains, even though these might not apply to every process. As a result, comparative design is complementary to research on specific design practice, as well as research that aims to describe design in generic terms.

## Prevailing Approaches to Descriptive Design Research

Most design research is not comparative at the outset, but grounded

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1 T. Love, "Constructing a Coherent Cross-disciplinary Body of Theory about Designing and Designs: Some Philosophical Issues," *Design Studies* 23 (2002): 345–361; and I. M. M. J. Reyman, "Improving Design Processes through Structured Reflection: A Domain-Independent Approach" (Ph.D. thesis, 2001, Technische Universiteit Eindhoven, Eindhoven, The Netherlands).

in specific design disciplines and, indeed, often is conducted by researchers educated in a particular design tradition. That perspective is emphasized in research accounts by a natural concern for specific products or contexts in which a functional account of design work will be applied. Types of theoretical reflection vary considerably between design domains, often gaining structure from the structures appearing in the work itself. A natural structuring principle is to account for the diversity of products designed by a profession; perhaps according to their internal complexity, cost, or users. Craft design traditions such as jewelry or fashion also may be concerned with classifications and descriptions of the materials to which designers have access. The tools used in design and manufacture might structure theory, especially in design professions in which tools are still under development, and are theorized as an aid to innovation.<sup>2</sup> Finally, design research grounded in reflective practice will inevitably be concerned with the processes of design, and the implications of professional work.

Because design research (like medical or engineering research) has an academic literature closely associated with professional practice, it is often normative in its aims. Contemporary schooling encourages professional disciplines to employ academia in a service role, providing theorized conceptions of the profession alongside technical skills and aspirations of best practice. Whatever the actual achievements of design education in terms of professional preparation, the intellectual influence on a profession of normative theory is undeniable. Analytical professions such as engineering have a strong normative tradition, with education emphasizing the scientific and mathematical underpinnings of the field rather than the individual acquisition of craft skills. Where there is emphasis on craft-based training, for example in fashion design, theory may be contributed by outside observers such as cultural historians or sociologists.

Design research supplies normative accounts of design disciplines on the basis of observation and analysis. In fields with strong academic traditions, such as architecture, senior designers wishing to exert practice-based influence on theory often engage in design research. Further normative influences can come from the developers of computer tools that define a mode of working, or through consultancies that formulate industry standard norms. Designers in fields with less-well-established academic traditions might influence peers by publishing their work in exhibitions, books, or written accounts.

We believe all of the above to be laudable activities of design research, and natural ways for academics to engage with a profession. A comparative design agenda is complementary to such research, stepping aside from the structures and normative accounts of any one discipline to provide an alternative perspective. We believe this perspective brings value in itself as designers see

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<sup>2</sup> A. F. Blackwell, "The Reification of Metaphor as a Design Tool," *ACM Transactions on CHI* 13:4 (2006): 1–41.

their own professional practice reflected in cases from other fields, encouraging reflection on their own ways of working, and drawing attention to aspects of their work which may be clearer in other contexts.

### **Our Comparative Approach—Scope and Interests**

The practical implications of a comparative design strategy have been, for us, the need to make broad comparisons across many different fields. Our primary focus has not been on specific designed pieces although, of course, we find it important to ground our discourse in tangible products or projects. Furthermore, we do not treat any one design profession as providing a normative description of the nature of design. Instead, we have looked for patterns of professional experience, as understood by design professionals themselves. We wished to offer designers an opportunity to reflect on the nature of their own work, but in a context in which they were thrown together with others from different specialist backgrounds, both practitioners and researchers. This allowed us to draw on patterns of experience within one professional specialism, extending these perspectives into other fields in which the same patterns may be secondary or buried. This work initially was developed by a research team with backgrounds in clothing, architecture, typography, engineering, and software. In the course of our research, we cast our net wider still, as described below. Our ultimate objective has been to build a coherent comparative description based on commonalities and marked differences that have arisen through the resulting series of interdisciplinary encounters.

### **Why Is a Comparative View Necessary?**

There are several practical motivations for comparative study across multiple design disciplines. The first of these is that many products require design input from a variety of different fields; not just a single discipline. Improved performance in multidisciplinary design teams depends on the quality of collaboration among members of the team. Design teaching and research should help us understand the similarities and differences between disciplines, if it is to prepare students for professional life. Furthermore, identifying best practices in design process may provide opportunities for the transfer of competence across disciplines. We might expect to find that different professions are particularly strong in their approaches to areas such as evaluation, project management, or ideation—often in response to risks that are especially salient in their domain. Comparative approaches also can be of value when novel tools and methods are developed, and the results used to assess the potential for innovation across a wider range of applications.

In addition to these practical advantages, there are also academic grounds to motivate a comparative approach. Design studies as a discipline can clearly benefit from comparison across

a broader range of activity, complementing studies grounded in specific professional work. While there is undoubtedly great diversity in design activity, some generic behaviors are observed in many different contexts. It is often the case that the specific and generic are observed at different granularities of action, or level of detail in articulation of the designed artifact. Comparative study allows us to identify the relative level of detail at which behavior starts to diversify. Our own approach therefore was motivated by both practical and theoretical concerns.

### **A Theoretical Stance for Comparing Diverse Experience**

Our comparison of different kinds of design focuses not on a comparison of different products (materiality, function, usage, interpretation, etc.), but on the process of designing. We hoped that designers would offer, rather than factual accounts of process for us to interpret from our own perspective, richer descriptions allowing us to understand the perceptions, priorities, and judgments they bring to their work. This ambition is epistemologically problematic in the sense that individuals' experiences are not directly accessible, or even directly comparable, to the experience of others. Indeed, if design expertise arises from sources that include nonverbal experience of craft skill, material products, or creative ideation, then the resulting knowledge may not be expressible even by the most expert designer. Of course, while designers might not be able to articulate how they achieve ideas and decisions, they can rationalize and articulate parts of their process—and do so regularly as part of professional practice.

The philosophical questions arising in comparative design research also arise in other comparative fields, such as comparative literature or comparative religion. By looking at these fields, methodological guidance can be brought to comparative design research. To illustrate, consider the academic enterprise of comparative religion, which aims to understand and contrast experiences that are not only fully expressible and, indeed, when described, might be literally contradictory. The ambition remains objective, as defined by Sharpe: "The serious and, as far as possible, dispassionate study of material drawn from all the accessible religious traditions of the world [...] as phenomena to be observed, rather than as creeds to be followed."<sup>3</sup> Originally derived from the philosophical traditions of comparative linguistics, comparative religion has since moved further toward a phenomenological stance for reasons that we will explain below.

Establishing an analogy between comparative design and comparative religion allows us to be aware of the intellectual temptations and tendencies that have been problematic or unproductive in the context of religious studies. We then can be appropriately cautious when the same temptations appear in our own study. In particular, the comparative approach to the study

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<sup>3</sup> E. J. Sharpe, *Comparative Religion: A History* (London: Duckworth, 1975).

of religion aims to avoid the relatively well-trodden paths of “syncretism” (adopting beliefs and practices from other religious traditions); “apologetics” (the defense of true religion against false creeds); and “Unitarianism” (the attempt to construct a single belief system to supplant others).

Each of these alternatives to the comparative stance has analogs in encounters between design disciplines. As an example, a popular collection of essays on “Bringing Design to Software”<sup>4</sup> includes evidence of syncretism (e.g., the notion of the “software architect”), some degree of proselytizing (e.g., the implication that software was not previously designed), and perhaps also evidence of Unitarian tendencies (e.g., the notion that design practices such as studio teaching might apply outside of their traditional context to all kinds of design). Such encounters, of course, can be a source of creativity. The evolution of dynamic new religious movements from encounters between traditions might be positively regarded. Nevertheless, interventions of this kind are not the primary aim of comparative religion, and need not be the aim of comparative design.

If these potential temptations of research in comparative religion have analogs in design, then the methodological and theoretical precautions against them that have been developed for the comparative study of religion are also applicable to comparative design. This confirms the strategic policy to focus on the professional experience of specific design disciplines, as reported by individual practitioners, rather than attempting to formulate generic or universal principles of ideal design practice, whether syncretistic, apologist, or Unitarian. It also enables a comparative stance that is relatively independent of disciplinary design practices as they are conventionally studied or taught. However, we also need to be cautious with regard to two further intellectual tendencies that have regularly appeared in the study of religion. One common motivation for undertaking comparisons of different religious traditions is the promotion of an evolutionary doctrine called “dispensationalism” in Christian theology, which seeks an escape from the primitive conditions of the past either through revelation or self-improvement. Another tempting position that may be found both in comparative religion and comparative design is the relativist abdication of “agnosticism,” in which comparisons are used in order to demonstrate that serious intellectual discourse is either impossible or immoral. In design studies, one can observe frequent examples of both evolutionary dispensationalism (e.g., in engineering design literature which prescribes modifications to best practice for future product success), or pragmatic agnosticism, which glosses over the details of the creative process on the grounds that creativity is not describable.

Students of comparative religion are aware that evolutionary or agnostic conclusions will not be recognized as valid by the people

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4 *Bringing Design to Software*, T. Winograd, ed. (Boston: Addison-Wesley, 1996).

whose beliefs and practices are being studied, and that adherents might, in fact, regard such research as academic attacks on their own beliefs and practices. This problem is taken seriously in comparative religion, and also should be in comparative design. In particular, an evolutionary view requires that some “ranking” of more and less evolved practices or beliefs be established within a design domain, if not across domains. The researcher’s response to this—a response that we advocate for comparative design—is a phenomenological stance in which it is the reports of religious experience that are taken to be the object of study, rather than any attempt to uncover truths that might stand independently of such reports by the practitioners of religious belief. Therefore, we have chosen to engage with design practitioners as witnesses for professional peers, rather than simple data sources to construct or confirm our own theories of design.

The goal of modern comparative study is not, therefore, to develop a reductive account that might capture the essentials of experience (in contrast to the past efforts of psychological, political, and anthropological commentators on religious traditions such as Freud, Marx, or Durkheim). Instead, common elements such as symbols or myths may be observed and characterized as components of a richer account of human experience. The goal of phenomenology in comparative religion is to develop a typology of phenomena, rather than a description of essences. Its method is first to assign names to appearances; second, to interpret and experience those appearances; third, to withdraw and contemplate; fourth, to clarify and comprehend; and finally to testify to that understanding.<sup>5</sup> This is our own goal and method: undertaking a thematic comparison of the particular, rather than a prescription of universals.

One problem with comparative and phenomenological discourse is the way in which we shift discussion from “a religion and its plural” to “religion” as a phenomenon<sup>6</sup> in terms that might not be acknowledged by any one practitioner. The same issue has a classic analog in design studies, when commentators talk in terms of “design” abstracted from the design of any particular thing. Our objective in using the term generically has been to establish a broad community of design professions supporting public policy interventions, and advocating the value of professionalized design work and research. This abstract shift introduces the methodological problem of what phenomena should qualify for consideration as design experiences. In the phenomenology of religion, in which that problem is constant, one of the few proven working definitions is that a religious experience chosen for study should be drawn from the class of experiences that religious people hold to be religious. In the same way, we recommend that, if some activity is recognized as being a design activity by practitioners of design, then it is a reasonable object of study for comparative design. Cantwell Smith says that we do not study “religion” but “religious persons.”<sup>7</sup> In the same way, comparative design should not attempt to define (or

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5 G. Van der Leeuw, *Religion in Essence and Manifestation* (1933/1938).

6 Cantwell Smith, *The Meaning and End of Religion* (New York: McMillan, 1962).

7 Ibid.

redefine) design, but only make a comparative study of “designers.” This might include consideration of the attitudes that one design profession might have with regard to others.

### **The Across Design Method**

The project in which we developed and applied this comparative approach, called “Across Design,” was a joint venture between Cambridge University and MIT, with collaboration from design researchers and educators elsewhere. Our fundamental concern was to bring together both designers and design researchers from many disciplines in order to negotiate a shared analytic framework—the assignment of names to common appearances, as in the phenomenological methodology of van der Leeuw.<sup>8</sup> The work was undertaken in a series of two-day workshops, initially involving a diverse team of design researchers, then extending to design professionals who were invited as witnesses to the project.

The scope of our attention was initially negotiated at a workshop meeting of the collaborating researchers, drawing on our personal experience of professional design, and giving considered weight to our competences within the community of conventional design research. Rather than attempt a disinterested or abstract analytic stance, we endeavored to capture the breadth of our prior interest and expertise in particular research topics (for example, the use of design representations, or collaborative methods and processes). These prior interests were organized into an outline framework offering common terminology across our domains of interest. In many ways, it was the negotiation of common terms that was the critical outcome of this phase. The structure of the framework was later de-emphasized, reducing it to broad visual groupings. The existence of this representation allowed us to set it to one side as a research concern (with no more debate over interpretation and categorization), while also presenting it to our future informants in order that they might anticipate the kinds of vocabulary that we researchers used, and the kinds of topics in which we considered ourselves expert.

The remaining activities of the project consisted of six further workshops, to each of which we invited between three and five professional designers from very different disciplines. We extended our invitations to a range of professions that exhibited the kind of activities identified in our draft framework, with the intention of covering as wide a range as possible of contemporary professional design activity. This strategy led us to include some professions that might normally be excluded from the traditional scope of design research (for example, a computational chemist responsible for “designing” new chemical compounds for the pharmaceutical industry).

We recruited twenty-four professional designers, working from contacts in our respective research fields to identify those

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8 Van der Leeuw, *Religion in Essence and Manifestation*.



recognized by their peers as leading practitioners. All were highly experienced designers in their field, many with twenty or more years of experience. A frequent consequence of these selection criteria was that the designer often had some form of academic affiliation themselves, for example, as a guest tutor in a design school. These witnesses to professional design practice included two fashion designers (a couturier and a pattern designer), three architects (one designing public housing, one private housing, and one public assembly spaces), two engine designers (jet engines and diesel engines), two product designers (one medical products and train interiors, and one consumer products and car styling), two engineers (a conceptual designer of cars and a medical device designer), two multimedia designers (university courses and websites), two software designers (large government systems and single-user programming languages), as well as a drug designer, a civil engineer, a filmmaker, a graphic designer, a food product designer, a packaging designer, an electronic product designer, and a furniture designer.

Our prior experience of interdisciplinary academic work<sup>9</sup> suggested that encounters between different disciplines are compromised by privileging any one perspective or disciplinary vocabulary at the outset of a meeting (although the composition of our research team and the balance of participants brought a slight bias towards engineering design). In addition to the design witnesses, workshops were restricted to approximately eight design researchers and observers. These were drawn from our team of research collaborators, a few of our students (operating recording equipment), and one or two invited guests.

### Data Characterization and Analysis

The framework that we have described justifies a wider field of view than is normally the case in design research, one that values the individual experience as much as the instrumental methods of designing. We therefore considered the testimonies that we were given from a perspective outside of the normal context of design discourse; consciously treating our informants as witnesses rather than objects of study. In the course of the workshops, designers at one and the same time spoke personally about the challenges they faced and sometimes overcame, while describing in a disinterested way the techniques of design process and the working of design tools. Our own concern was to find consensus and recognition at each workshop and, in particular, to find recognition of good practice that is accepted voluntarily rather than imposed on designers as an attempt at prescription by academics (whether on the basis of evolutionary replacement or normative theory).

Each workshop was recorded throughout on audio and video tape. Most witnesses came with prepared presentations, and we made copies of these. Many also brought artifacts to display,

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9 A. F. Blackwell, "Designing Knowledge: An Interdisciplinary Experiment in Research Infrastructure for Shared Description" (Cambridge University Computer Laboratory Technical Report UCAM-CL-TR-664, 2006).



including examples of finished products, public display pieces (for example, a cross-section of a jet turbine blade), or process exhibits such as prototypes and drawings. All of these were photographed by the recording team. After each workshop, the audio recordings were transcribed and distributed to the research team. Finally, members of the team visited many of the witnesses following each workshop, interviewing them in the context of their own workplace. These interviews primarily were motivated by the need to capture more detail of the case studies for use in design education, and by the need for suitable illustrative material that could be used in teaching and in subsequent publications.

What arose from this material was a developing understanding, not so much of analytic commonality, but of what had been special about each of the testimonies we heard. The fact that this understanding was grounded in specific products, specific projects, and personal experience meant that it regularly demanded novel research emphases beyond those we had brought to the project at the outset. Members of the research team were able to use data collected during the project to throw light on their existing research interests,<sup>10</sup> but the principal research outcome has been the new kinds of comparative understanding developed out of reflection on specific experiences and case studies. This has resulted in rich new perspectives on the variety of design experience, allowing us to contribute to design education,<sup>11</sup> to the understanding of design as a genus of human work,<sup>12</sup> and to illustrate the diverse ecology of design for its own sake.<sup>13</sup> Furthermore, all contributors to the Across Design workshops left with new experience of comparative reflection on their own work. For many, this was such powerful experience that we considered sustaining the series purely for the benefit experienced by workshop participants, even if no further academic analysis was done.

### Illustrative Findings

The findings from the Across Design project have been rich and diverse, with an extensive report to be published in a forthcoming book.<sup>14</sup> In the current paper, whose purpose is to present the philosophy and methodology of the project, we include only a small sample to illustrate the potential of this approach for future research.

The most striking finding over all six research workshops was the recognition by our witnesses of the commonality in their experience. This was not because they expected uniformity, having regarded design as a generic abstract endeavor. We observed appreciative surprise from designers realizing the degree to which the experience of other professionals, who they might not have considered as natural peers, did in fact extend across design. It was striking that all designers seemed to have no problem understanding their colleagues' presentations. Terminology was

10 See, for example, C. M. Eckert, C. F. Earl, M. K. Stacey, and P. J. Clarkson, "Risk, Across Design Domains," *Proceedings of the 15th International Conference on Engineering Design* (The Design Society, Melbourne, Australia, August 2000); and C. M. Eckert, A. F. Blackwell, M. K. Stacey, and C. F. Earl, "Sketching across Design Domains," *Visual Communication* (in press).

11 C. F. Earl, *T211 Design and Designing* (Open University course notes reader, 2004).

12 A. F. Blackwell, "The Work of Design and the Design of Work" to appear in Levin, Laughlin, and de la Rocha, *Handbook on the Interdisciplinary Study of Work* (Cambridge, MA: MIT Press).

13 C. M. Eckert, C. F. Earl, and L. L. Bucciarelli, from a book to be published by MIT Press describing the Across Design project.

14 Ibid.

rarely a problem, and clarified easily when questioned. Even if they were unfamiliar with the domains, and thus the terminology; the context disambiguated the details, and participants described subjective comprehension of each other's major concerns.

General themes developed from triangulation—recurrence of particular concerns in multiple workshops, accompanied by rich description, discussion, and recognition by participants. We briefly describe three themes to illustrate the nature of the findings. We have chosen themes that also suggest some analogy to the experience of religion, a novel perspective that happened to intrigue us because of our cognate methodological stance. However, we should emphasize that this is not a necessary result of the method, and that our purpose is not to suggest that design is like religion. It is the method of comparison that we transfer from the study of comparative religion to comparative design, which does not require any further analogy between the methods of religion and design.

### **What Does It Mean to Be a Good Designer?**

A common concern of religion is the question of what it means to live a good life. For the individual believer, this often involves a tension between ideal prescriptions and personal achievements, resolved differently as prescribed by different traditions, whether involving resignation, struggle, or acknowledgement of failure. Discussion of personal aspirations and achievements at the Across Design workshops often considered the question of how a designer assesses the quality of his or her work. We were surprised at the diversity of criteria by which designers evaluated their work and motivated their professional activities. For many, it was recognition by their community of design peers that motivated them, rather than the opinion of customers or employers.

### **Relationship of the Designer to the “Customer”**

The variety of relationships that professional designers maintain is extensive—comparable to the relationships that priesthoods have with their various constituencies. Some withdraw from society; while others engage broadly in ministry or social service. However, in all cases, they define a social role. The professional designers we met in Across Design have surprisingly little contact with the end-users of products. The design brief might be founded on market research, including surveys of the eventual users or customers, but it was unusual among our sample for the designer to meet these users. Instead, projects involved collaboration between teams of specialists, extending over months or years, with the numbers varying from a graphic designer working alone to a jet engine design project involving thousands of people.

### **Education and the Professions**

Religious traditions must be centrally concerned with sustaining

themselves, otherwise they would never have become traditions. The same is true of design traditions, and indeed of all professions. The “great” religious traditions tend to be founded or maintained in scriptures in which education is central to their doctrines and practices. We did not anticipate this as a common concern of the Across Design workshops, but found that witnesses were deeply concerned with the structure of their profession, and with the future continuity of their professional communities. Their work often included the education of young designers, and lobbying public policy or professional organizations in the interests of their peers. This was particularly apparent in fields for which international competition was devaluing traditional design values, or technological change resulted in the loss of traditional skills.

### Implications for Design/Research

The Across Design project is one in which all participants have found great value, with diverse potential for professional practice, policy, and education. We believe that our methods and theoretical stance offer a novel direction for design research, and that future research will continue to be productive. Phenomenological approaches to comparative religion have been refined over thirty years of investigation, and offer a rigorous theoretical foundation for comparative design. Furthermore, Coyne recently has described the need to shift the ground of design problem-solving from a positivist stance to a phenomenologically informed stance, more fully recognizing the rich human and social context of professional design.<sup>15</sup> Our own work demonstrates that this attitude is applicable not only to design activity, but to the enterprise of design research.

After our workshops, we became aware of parallels to the Scriptural Reasoning (SR) approach to interfaith encounters.<sup>16</sup> SR takes advantage of the fact that Abrahamic<sup>17</sup> faiths share sacred texts and traditions of textual analysis. SR meetings involve members of different faiths working through contemporary disputes by sitting together to read and interpret their own and each other’s texts. Common practice in the use of texts, and mutual respect for the exhibition of skilled reading, help participants understand and appreciate the varying perspectives of their collaborators. The most significant value of an SR meeting is in the meeting itself, rather than any product. This could be true of Across Design meetings, where the “texts” are the designed products that demonstrate mutually respected skill. Just as in SR, where each scripture offers a degree of authority to the adherent of that faith, but is open to reading and exposition in the company of others, a designed product is also open to interpretation and discussion by other design traditions, while clearly affording a privileged interpretive platform for the designer who made it.

Our main objective in this work has not been to establish a general analogy between design and religion, but to adopt a

15 R. Coyne, “Wicked Problems Revisited” *Design Studies* 26 (2005): 5–17.

16 J. W. Bailey, “New Models for Religion in Public: Interfaith Friendship and the Politics of Scriptural Reasoning,” *Christian Century* (2006).

17 An inclusive term for the Jewish, Christian, and Muslim faiths; referring to their common origin.

comparative stance and methodology that will be of value to design and design research. As it happens, awareness of this analogy also encourages reflection on the ways that design professions are like religious professions, but that is a side effect rather than central to our method. We wished to draw away from describing universals of design; instead identifying aspects of design experience that recur across domains, and whose features offer a productive basis for confirmation or contrast when described by design researchers. The Across Design method gives designers a warrant to contribute to design research as peers, and indeed as the primary interpreters of their own experience. The academic setting and context of the workshop encourages critical reflection on case studies, such that expert practitioners are stimulated to pursue the comparative implications of their work. Academic workshop conveners are not interrogators, but facilitators and witnesses of this reflection. However, the designers themselves also act as witnesses—witnesses to the truth of their own experience in a sense that reflects the way we share and contrast human experience of diverse practices and beliefs.

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