

PREFACE

The Design Cluster

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Today, design is a category beyond categories. Search the World Wide Web for the word "design" and you get close to hundred million sites (twice as many hits as "god," half as many as "sex"). Marshall McLuhan coined the phrase "Gutenberg Galaxy" to describe the effects of the printed book on human culture [McLuhan 1962]. Astronomers group galaxies by clusters, and I would claim that now, we all live in the Design Cluster. While this means there is space in the Design Cluster to do extraordinary work, it also means that the territory is vast. And it is the very vastness of the territory that makes *Design Research* such an essential collection. The essays, case studies and provocations that editor Brenda Laurel has assembled here chart the nature and value of research done in the Design Cluster. There is a welcome openness to this book, for it begins with the understanding that no single research methodology could possibly account for the diversity of inputs and outputs to contemporary design practice and process. There are simply too many markets and media, clients and users, ways and means.

There are also too many definitions of design itself to pin down a definitive one. The great American modernist Charles Eames offered the following: "A plan for arranging elements in such a way as to best accomplish a particular purpose" [Eames 1972]. This definition situates design as a problem-solving discipline, with problems here defined mostly within market contexts. The 1980s and the 1990s saw an explosion of "personal" design to challenge this problem-solving methodology, which brought about debates on everything from legibility to the difference between "design with a small 'd'" and "Design with a capital 'D'" to the dissolving of the boundaries between art and design, and architecture and sculpture. More recently, Serges Gagnon has referred to design as "the cultural appropriation of technology," an intriguing place to start any investigation of design research [cited in De Winter 2002].

In the Design Cluster, pluralism and serendipity define ways of thinking by, with and through the idea of design research. Design research can fashion singularities that allow theory to morph into practice and come back again through the wormhole as something entirely new. Design research creates a place to braid theory and practice to make the work stronger. It establishes a demilitarized zone between makers suspicious of discourse and critical intelligence disdainful of the negotiations between designer and client. Design research is a method of invention that sides with finding out rather than finding the already found. Design research is not inherently good, nor is it inherently bad, but that doesn't mean it's neutral either. Obviously, design research will draw polling methodologies of the

social sciences and the niche analysis of marketing surveys when it is appropriate, but as design research develops its own methodologies, its practitioners push farther afield. As this book demonstrates, the space of design research is as much like the novelist's library or the cook's kitchen as it is the scientist's laboratory or the marketer's phone bank.

Design Research regularly participates in the redefinition of the design process away from the stand-alone object and into the integrated system. Designers of all stripes regularly lament that they are seen by the rest of the world as stylists—pseudo-professionals brought in to smooth the edges, improve the palette and make the medicine go down more easily. By moving away from “mere styling” of the product itself and into the interlocking systems that manifest, support, constrain and envelop products, designers can rightfully claim lay claim to a much farther-reaching contribution. A commitment to design research as practice is a prerequisite for any kind of design entrepreneurship. Design Research helps to establish the right to a share in the equity when the profits are divided ©212 LOCH, ©145 RHEA.

There have been numerous attempts at defining what design research is and how to identify its methodologies, from László Moholy-Nagy at the Bauhaus in the 1920s, to Henry Dreyfuss's seminal study *Designing for People* in the 1950s, to the Royal College of Arts' Sir Christopher Frayling in the 1990s [Moholy-Nagy 1969, Dreyfuss 1955, Frayling 1993]. To draw from the most recent, Frayling identifies three key modes of design research: research *into* design, research *through* design, and research *for* design. Research into design includes the traditional historical and aesthetic studies of art and design. Research through design is project-based, and includes materials research and development. And finally, research for design is the hardest to characterize, as its purpose is to create objects and systems that display the results of the research and prove its worth.

This book organizes its methods and perspectives into four major sections: “People,” “Form,” “Process,” and “Action.” The importance of research into the design process, which includes the traditional historical and aesthetic studies of art and design, cannot be overstated. In *Design Research*, the essays that explore this terrain are in the section entitled “Process,” and there are examinations of methodologies in the sections on “People” and “Form” as well. “Form” and “Process” incorporate project-based investigations into materials research and development. “Action” is a synoptic category that incorporates the understanding of people, form and process and that activates that knowledge as design.

We need new categories of design research because of the impact of digital technologies on the design disciplines over the past twenty years. The computer democratized access to the tools of the professional designer, brought about an amazing efflorescence of new styles, and made the Design Cluster much denser with people who define themselves as designers. Unfortunately, the democratization of digitization didn't go hand in hand with any kind of informed discussion of

the history and discourses of design as a field. Knowing something about the ways in which designers from earlier eras were able to shift the dialogue from service to collaboration, staking out either new territory or reformulating the way the game is played—think Charles and Ray Eames—is essential to anyone who wants to make design research a major component of their practice. ©83 GROCOTT.

With all the hype about new design tools (from Hypercard to Director to Flash to whatever's in beta today, to be released tomorrow, and a technological cliché the day after that) and the concomitant backlash against them, this is precisely the time to revisit the debates about deep design versus styling. But the very people who should be talking about this lack the historical and aesthetic background to see their work in larger contexts. For example, they probably do not have the vaguest notion of who industrial design great Raymond Loewy was, much less the fact that as early as the 1930s, he was talking about the designer's role in "reconciling" people to new technologies through the exterior styling of everything from streamlined locomotives to streamlined toasters. The idea of speed was as much the point as any real velocity [Loewy 1951]. This is not to endorse Loewy's position by any means, but it would make the discussions between partisans of the "new" and their detractors a whole lot more interesting. How about countering the banality of Web usability consultants by recasting Frankfurt School theorist Theodor Adorno's condemnation of functionalism? In the 1960s, Adorno was dealing with the unintended consequences of modernism's reductivism: the creation of boring and inhuman living spaces [Adorno 1997]. Connecting the dots from these historical arguments to a staff meeting is tricky, but it can be done. Essentially, it's about making history, theory and criticism viable in non-academic environments.

Another way of positioning design research in "Action" is to think about design as research. Design as research uses its own media to perform the investigations, expanding past the idea of market surveys, and god forbid, color preference charts. A flexible and ever expanding methodology of design as research is necessary to deal with a moment defined by pluralism and enlivened by serendipity. Design as research is a rational practice, but it is one in which emotion is allowed its own power and intelligence. This openness to braided modalities of thinking and feeling can offer the mid-career designer a way to escape from the prison of safe solutions that "always work." At the very least, design research saves us from reinventing the wheel. At its best, a lively research methodology can reinvigorate the passion that so often fades after designers "join the profession." Designers are so often the chameleons of system analysts, able to slip in and out of other people's lives, workplaces, and needs. If they are hard-working, inquisitive and lucky (yes, it takes at least this much), designers can find themselves working with a constantly changing set of subjects, clients, projects, dreams and nightmares.

Design research can indeed result in the positivistic production of beautiful, useful and better products. But, given a different set of data or expectations, design research can build in an inherent criticality that produces provoking, tactical and oppositional results. Design research can be a way out of the banality of making beautiful/making functional. Design research can save the newest members of the profession from the solipsism of youth—the never-ending allure of exclusively designing for yourself and your friends. And design research can even—with an even greater level of serendipity than usual—convince clients to do something that they wouldn't have had the wit or courage to pay for otherwise

●82 BURDICK INTRO, ●94 GONZALES CRISP.

One of the most impressive design research-based practices in the world belongs to the architect Rem Koolhaas. Koolhaas has built his worldwide reputation in large measure by designing and publishing the results of his research in provoking ways. From *Delirious New York: A Retroactive Manifesto for Manhattan* [1978] through *S,M,L,XL* [1995], a collaboration with graphic designer Bruce Mau, to *The Harvard Design School Guide to Shopping* [2002], Koolhaas has consistently deployed design research in three distinct ways: first, to understand the context of any building project he might wish to undertake; second, to develop the building's program itself; and third, in a reflexive way, as a selling tool for the research and the building themselves. I once watched Koolhaas analyze the evolution of architecture in response to the globalization of capital. He showed a Mercator projection with the Western Hemisphere on the left, Eurasia in the middle, and Australia on the right, Koolhaas began to speak of the dominant world currencies, reading from left to right, the dollar (\$), the Euro (€), and the Yen (¥). In a brilliant inversion of the West's cartographic norms, though, the next slide placed Asia on the left, Europe in the middle, and the United States on the right, creating a new supergraphic of the currencies: ¥ € \$, or, as Koolhaas calls it, "the global YES."

If we define a graphic of the "the global YES" as design research, it should be obvious by now that design as research is not the same as science as research. Of course, the people in the boardroom would doubtless be more comfortable with design research if it behaved more like science. Of course, design research and scientific research converge at times—especially in the research on materials and statistical analyses—but they diverge just as often. The scientific method is built on a base of testability and reproducibility: an experiment done in one place when replicated with the same set of conditions in another place by other scientists will yield the same results. This is the operating methodology of "normal" science, that day-to-day routine of life in the laboratory [Kuhn 1967]. In fact, most scientists never have an epochal "eureka!" moment in their entire career. But the testability and reproducibility of design as research is less important. Very often it is the sensitivity to social context and cultural moment that makes the results of the design research resonate with a public or a market. The same "solution" in another context or market could fall flat, or simply be seen as entirely derivative

●22 IRELAND INTRO, ●293 SHUTT.

These comparisons also bring up the distinction between pure and applied research. We tend to associate pure research with scientific fields like physics and mathematics and applied research with the engineering disciplines. Design and engineering have long been intertwined, so it should come as no surprise that design research, for the most part, functions as a variety of applied rather than pure research (a claim sometimes made for fine art practice). In the 21st century, the linear narratives of research progress are dissolving into decentered threadings, less branches off a main root than tide pools by the shore, or the rhizomatic growth of peanuts in the soil [Lunenfeld 2000]. As information and data about everything explode in a frenzy of rhizomatic connectivity, the very search for what to research becomes its own research issue. The research model becomes a design problem that can also function as its own solution.

This sort of recursive involution in the Design Cluster resonates with the recent call for moving from a blinkered fascination with IT (information technologies) to a more expansive field of ITCP (information technologies and creative practices) [Mitchell et al. 2003]. Design research can lead the way to new modes of engagement with computer-inflected technologies. Design research is a key part of crafting ITCP that moves from human-computer interface technologies to humane computer interface technologies. Even more important than improving our interfaces with machines is design research's potential contribution to improving our relationships with each other, our communities, our cultures and our democracies. Design is not only about serving the needs of business, but also about determining and working towards the greater good for society, government, education and the environment.

How can we harness the Design Cluster's powers and attractions to make the world a better (and perhaps even smarter) place? This isn't a new question, of course, as anyone who has studied the history of design can tell you. In fact, one of the guiding principles of modernist design was that its practitioners might be able to serve as conduits and refiners of complex information about social, aesthetic and scientific systems for mass audiences, thereby adding to the realm of knowledge and democracy. Think of Viennese designer Otto Neurath's universalized isotypes from the 1920s or the desire of architects to create better "machines for living." The kinds of utopian aspirations that Bauhaus designers and other modernists had for the field have been obscured by a miasma of Coca Cola campaigns and automotive styling, but perhaps it can be reinvigorated in this era of electronic image-making and vectoral world building. This is my hope, my ideal for design research in action. As John Seely Brown, the Chief Scientist of PARC Xerox, once told me, "theory and practice aren't enough; it's got to be theory, practice and purpose."

Research helps us to appreciate design's own intelligence, rather than simply appropriating its glamour (and let us not forget that both glamour and grammar have magic at their roots). The proliferation of networks of production and

distribution makes it vital to train citizens to upload as well as download ©276 DAMER, ©164 DONAHUE. Investigations into potentially profitless arenas will still need to be undertaken to push the envelope of the research. As the authors in this book demonstrate, the pioneers of design research do not take the easy route. Our ethical imperative is to make sure that the design research we do contributes as much to art, science, and democracy as it does to someone's bottom line.