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Design, an Undisciplinable Profession

Klaus Krippendorff
The Annenberg School for Communication, University of Pennsylvania
kkrippendorff@asc.upenn.edu

Is design a discipline?

I offer three reasons for why this question does not deserve a yes-or-no answer:

- First is the implied existence of a true answer. My hope is that the deliberations in this book will shape a more nuanced answer.
- Second is the lack of clarity of what it means to be a discipline. Let me reflect on what makes a discipline a discipline:

To discipline is to punish someone for deviating from a norm. Academic disciplines educate what it takes to become part of a community of practitioners after which it is legitimate to discipline their disciples when not conforming to the prevailing expectations. Academic disciplines are somewhat closed systems of beliefs in how reality is to be constructed. Biologists attend to a reality that has little to do with how physicists see it, and economists do not care for how psychiatrists explain the world they claim to face. They all construct their own bubble so as to excel within them, largely independent of one another. In academic disciplines, deviance tends to be punished by exclusion, withdrawing the license to practice them, refusing to publish unorthodox research in their journals, and resisting infringements by despised disciplines. Michael Foucault (1977) wrote of various disciplinary regimes in similar terms.

Claiming that “disciplines punish deviant disciples” makes the epistemological mistake of attributing agency to an abstraction. A discipline cannot act as humans do. Claiming that ability hides the fact that it is disciples that police each other by invoking the abstract norms of the discipline they ventriloquize. Accordingly, an affirmative answer to the leading question would invite designers to police each other for whether they qualify to be called designers, perhaps until they have succeeded to internalize the norms of their discipline and show evidence of having enough self-discipline to police themselves. My discomfort with the prospect of calling design a discipline leads to

- The third and more important reason for not giving a yes-or-no answer to the above is that questions of what we call design, what we expect designers to do, how we educate people to become designers, and for what should designers be respected by their clients and society at large, are wide open. Let me try to answer some of them.

What do we want design to embrace?

Unfortunately, the word “design” is being used variously. The sense of intentionality is implied when scientists speak of designing experiments, architects propose buildings, and politicians devise policies. Design can serve as a synonym of fashionableness as in “designer clothes.” Design can refer to a particular pattern, a clever assembly, or an outstanding arrangement. Dictionary definitions come closer to my conception by distinguishing design from natural processes of emergence. This leads to distinctions among design practitioners in such terms as fashion, product, service, graphic, engineering, or food designers. Let me not address the differences among these specializations and locate design from a larger perspective.

I like to start with the well documented fact that scientific predictions of technological and cultural developments are notoriously unreliable. Not that there are futurists who claim to know what comes next. Some of them may well be believed by designers who have the ability to make them come true in the manner of self-fulfilling prophecies. But the histories of predictions, scientific or prophetic, are full of failures. Instead of learning from failed predictions, their proponent stop mentioning them as soon as developments take unanticipated turns. Who could have predicted the advent of writing, automobiles and highways, airplane travel, personal computing, smart phones, the internet, and digital commerce, before they actually happened? Yes, we have Moore’s law asserting that computing speed doubles roughly every two years. We have Ziff’s law predicting that frequently used words become shorter, more efficient in use. We know that the mass-production of technological devices, services, entertainment, and games tends to homogenize the population of their users and in turn opens the doors for more mass-production. We can observe that digitalization irreversibly reduces the size of everyday artifacts until they reach their human interfaces (Krippendorff, 2006:5,78ff). Such predictions, seemingly valid, concern simple measurable dimensions of our material culture but say little about what we will wear, how we will communicate, which technologies will fascinate us and transform our lives in the near or distant future.

To understand *the failures of scientific predictions*, it is important to recognize that predictions succeed only when the phenomena attended to are causally connected. Patterns that have demonstrably persisted over time can be extrapolated into the future under the assumption that they continue to persist. Probabilistic predictions may not be perfect but cannot exceed what was expected at the time they were made. So, why do scientific predictions of technological and cultural developments fail? I contend that such failures *are due to the social practices of designing*.

To me, “designing constitutes being human” (Krippendorff, 2006:74). Arranging the furniture in one’s home is a design practice as is planning a vacation, writing an influential paper, building a business, passing a law, and creating art. Humans co-construct their worlds to dwell in them. All design practices introduce innovations into individual lives and society. By definition, innovations have no historical precedents and support novel ways of living, not necessarily to the better. It follows that design activities undo the causalities that scientists seek to theorize. Indeed, *designing, whether every day or professional, is the main driver of technological, social, cultural, and economic developments*. Designing keeps cultures and the institutions of societies viable. In the absence of innovations, societies become vulnerable to environmental challenges and collapse in stagnation.

In complex societies, such as ours, professional designers arguably are the most important source of change. Unlike everyday design, professional designers channel innovations via institutions of production and dissemination to how humans interact with one another, interface with technology, and relate to the natural environment. This is why designers undermine and render invalid scientific theories of continuities, especially involving them.

Recognizing the inability of scientific disciplines to cope with what designers do, Herbert Simon (2001) proposed a *Science of the Artificial* which addresses improvements over what exists. The logic he proposed was a major milestone in conceptualizing design. However, his science exhibits a myopic view of design. Let me mention three limitations not worth adopting. It does not explain how something comes to be a problem and to whom. It is limited to solving well-defined problems, such as in logic, engineering, and logistical decision making in management. And it is entirely oblivious to problems that emerge after an existing problem is solved and implemented, an apparently obsolete practice is retired, or an outdated institution is replaced by a better one. In other words, Simon's science of the artificial does not recognize the social system in which it is meant to be practiced.

Harold Nelson and Erik Stolterman (2003) suggest design to be of service to those who care: clients, representatives of interested parties, customers, and end users. They correctly describe scientific disciplines as essentially self-serving. Scientists, they say, are motivated by their own curiosity and pursue their passion for objective knowledge within the confines of their disciplinary boundaries. Nelson and Stolterman do not want to equate "being of service" with being a servant or providing exactly what their clients say they need. They allow for design to be surprising, to exceed clients' expectations. Unlike Simon, they recognize that design takes place in relationships between designers and non-designers. Accordingly, design practices cannot be limited to "design thinking," a currently fashionable term that celebrates cognitive skills. Designers need to negotiate their criteria of success with communities outside their own. To be of service to others calls for reflexive engagements with the diverse worlds of those they serve. It means acquiring what I have called second-order understanding, the understanding of others' understanding and of these others' understanding of the world in which designers work. Clearly, the empirical domain of design cannot be closed as are the disciplinary domains of the natural sciences.

My misgiving with the idea of design as being of service stems from its implication that designers need to respond to the interests and perspectives of those they serve. Most clients pursue limited objectives, often at the expense of competitors, the environment, communities that cannot pay for their products, or populations whose ignorance can be exploited, for example, by designing for obsolescence or creating financial products that are ruinous in the long run. I like to see designers to be leaders the human use of technology and culture, not being led by special interests.

Professionalism versus disciplinary commitments

Nelson and Stolterman are quite right to talk of design as a profession. Professionals have particular competencies and profess to conduct themselves according to shared ethical standards. In the case of professional designers, I am suggesting that their competencies need to embrace public interests, the viability of cultural practices, and the general good of society not only the objectives of particular clients.

Designers ought to be free to think and act outside disciplinary boxes, not just by being able to work in multidisciplinary teams, but also in defiance of the determinisms that scientific disciplines seek to import in the social domain and of special interests that seek to direct the design process to their limited ends. Merely following a trend, varying the appearance of a well-established product, importing a known technology, or plagiarizing a design in the hope to get away with it can hardly be considered innovative. And delegating design decisions to a computer system may yield surprises that remain confined, however, within the preconceived logic of its software. Design means creating spaces of heretofore unknown possibilities that reflexively embrace the social worlds of others.

Horst Rittel's (Protzen & Harris, 2010) conception of design is a step in this direction. His "wicked problems" (2010:147-165) are not merely ill-defined as Simon would describe them. They acknowledge the competing interests expressed within networks of political and economic actors who ultimately enable or oppose the realization of a design. For him, design means making *compelling arguments for realistic plans and proposals for actions*. I am adding that designs need to fuel the conversations within what I conceive of as networks of stakeholder communities and bring forth novel realities.

One needs to acknowledge that designers do not create products, services, and multi-user systems. They envision and articulate plans and proposals for actions in terms of a specialized language, a design discourse (Krippendorff, 1995, 2006:267-271). A design discourse enables designers to create, talk of, collaborate within, and communicate spaces of possibilities beyond what is widely known and imaginable. Designers are often oblivious to what they do in language. A design discourse includes designers' visions, of course, but must also link them to the intended and unintended realizations of a design, almost always with the help of others. Literally manifest in visualizations, experiments, simulations, demonstrations, and presentations that designers develop with or without those who matter, the communication of a design must moreover provide spaces that motivate their stakeholders to add their own creative contributions to what designers propose. Providing such spaces enables designers to lead their stakeholders on paths not yet traveled. Leadership requires passionate articulations of future possibilities for others who may not have imagined them, possibilities that deviate from what would happen given the natural drift of events.

In sum, professional design needs to be bigger than what individuals can articulate and accomplish on their own. The conversations that designers initiate need to venture into uncharted territories and develop attractive paths not ordinarily taken. In pursuit of such objectives, designers must not be afraid to question popular conceptions, challenge deep-rooted habits, deconstruct vested interests in present conditions, undermine powerful institutions, awaken silenced voices, doubt theories that merely describe what is, and be suspicious of all claims of what cannot be done. Their design discourse needs to preserve the freedom to cross disciplinary boundaries even if it provokes objections.

To me, these abilities are a prerequisite of all design practices – but only one half of what designers need to embrace.

Undisciplinable does not mean irresponsible

While design ought not to be disciplinable by abstract conceptions or vested interests, this should not be construed as claiming unconstrained freedoms. The virtue of identifying design as a profession is that professions are constitutively open to the worlds of those they affect. For

designers, these worlds include not only the above mentioned stakeholders who are able to articulate their interest in a design and have resources to support or oppose it, but also those who are knowingly or unwittingly affected by it, and mere bystanders who may well act on what they observe. Insofar as the work of designers affects the lives of other human beings, designers cannot escape *ethical constraints*. Such constraints become manifest when designers are held accountable for the consequences of what they develop and propose.

Recently (Krippendorff, 2014), I had the opportunity to comment on the policies and educational choices of design in India. The ethical commitments that designers need to make became part of the ensuing discussions. Let me briefly sketch the four most important imperatives.

- Professional designers need to acknowledge the interpretive flexibility of their designs (Pinch & Bijker, 1987) and *respect the diversity of conceptions* that users can bring to their use. They may suggest best practices but it is imperative to *renounce* the temptation to *control the meanings their designs could acquire* for their stakeholders. Users' conceptions and growing competencies naturally deviate from designers' intentions and respecting them is ethically imperative.
- To interface with things in their worlds, people can draw from a rich reservoir of culturally available conceptions. The way artifacts are designed to function selectively affords some user conceptions but not all. To the extent designers can control the internal make-up of what they are proposing, it is an ethical imperative to ensure that *their designs do not afford conceptions that can get their users in trouble*, for example, by causing life threatening breakdowns. Stated colloquially, a design should not deceive their users, causing harm or injury, and always fail safely.
- As already mentioned, it is tempting for designers to create benefits for targeted communities, for example, for those who are willing to pay for and utilize their designs. With reference to the larger cultural and societal obligations of professional designers, the more important ethical imperative is *not to propose designs that can be realized or used only or mainly at the expense of non-targeted and future populations*, regardless of who they are and whether they know, understand, and can articulate what is happening to them.

This ethical imperative is not meant to exclude designs that compete with existing designs. Competition stimulates innovation. But designs that irreversibly impair communities that are not represented by active stakeholders should not be undertaken. Examples include designs that discriminate against minorities, spyware that hacks into the private lives of unsuspecting computer users, and media that disadvantage vulnerable populations. For one example, designers should not overlook that most high-tech devices tend to be manufactured by slave labor in poor countries. Norbert Wiener (1954:49ff) and Gregory Bateson (2000:446ff) have warned of the grave and ultimately self-destructive consequences of pursuing narrowly focused purposes.

- As already alluded to, a design succeeds or fails in the conversations that guide it through the networks of its stakeholders – executives, engineers, managers, producers, sales personnel, buyers, and end-users – before retiring into our ecology. All of these stakeholders pursue complex interest, have diverse resources at their disposal, possess

creative competencies of their own, and are motivated by what they can contribute to the realization of a design. It follows that in an open society such as ours, designers cannot claim to be in charge of everything that happens to their design. Lucy Suchman (1985) insists that viable plans (designs) have to stay vague. They have to convince, inform, and provide sufficiently large spaces for their stakeholders to add their part in bringing a design to fruition. It calls for respecting the various interests in a design, even if the designers' conceptions evolve into something else. Previously, I summarized the above by saying that *designers need to delegate design to their stakeholders* (Krippendorff, 2006:145). This ethical imperative calls on designers to lead by letting go of some dimensions of a design and trust the network of their stakeholders with its continuous development.

These ethical imperatives define good designs as designs that flow freely throughout interested populations and evolve continuously, with or without their originators.

Design research

The above, Simon's insights, and a previously essay (Krippendorff, 2007) come to the same conclusion that design research, modeled after scientific research, is an oxymoron. Scientific research is re-search, the repeated search within existing data for enduring pattern that provide the evidence for predictive theories. Re-search cannot possibly inform innovations which, by definition, deviate from past precedents. This is not to deny that even the most innovative designs are built on proven contingencies. They offer scientific re-search a role in the development of a design – but not the defining one. Innovations cannot be searched, computed, and found in available data, which represent what had been observed or measured prior to searching through them. Insisting that designers ground their work in scientific re-search of this kind, perhaps to gain some short term respectability, will certainly curtail designers' ability to live up to their professional potentials.

Insofar as all innovations, whether they emerged spontaneously, followed the use of generative metaphors (Schön, 1993), or emerged in conversations (Krippendorff, 2009) with non-designers, must be plausibly justifiable to those who come in contact with them, this condition gives design research an objective that fundamentally deviates from the aims of scientific re-search.

I am suggesting that design research efforts generate empirical support for the justifications that designers need to advance in order to enroll stakeholders into their project of realizing something not yet existing. Let me distinguish its four most important targets:

- *Inquiries into the possibilities of innovation.* Such inquiries cannot remain limited to what consumers want to have more of. They need to explore what people would be willing to give up should currently unknown alternatives become available. I am advocating the use of “ethnographies of possibilities” to uncover what is considered cumbersome, requires too much attention, is likely to cause accidents, is easily forgotten, too costly, difficult to live with, and oppressive or humiliating. Such inquiries can provide the empirically grounds for designers to grow inspirations in the second-order understanding of non-designers' meaningful futures.
- *Inquiries aimed at improving the process of designing.* Such inquiries target a range of professional practices, from testing alternative ways to collaborate in multidisciplinary

design teams; evaluating the successes and failures of design methods; surveying available literature, materials, technologies, manufacturing techniques, and competent stakeholders; experimenting with alternative approaches and prototypes, including brainstorming with leading stakeholders; developing and testing new design support systems, and recording and analyzing post design accounts. Their aim is to make design processes more efficient and generate methods that demonstrably increase the probability of subsequent successes.

- *Inquiries that improve the public standing of the design profession.* There is some merit to the claim that associating design with the arts makes it difficult for designers to assume larger responsibilities. Indeed, talking of designs in fashionable terms, soon to be abandoned for more recent ones, does not give the design profession the public respect it deserves. I suppose the call for design research recognizes this image problem. The inquiries suggested here are to evaluate the quality and comprehensiveness of professional design education; the growth of the design discourse by which designers communicate among themselves and in public, especially by means of popular and professional publications; reports on how professional designers contribute to the viability of society and the lives of its members.
- Finally but undoubtedly most important are *inquiries into how to effectively participate in, energize, and assemble stakeholder networks* that can be entrusted with the realization of designs. Recently, designers have been preoccupied with the psychology of assumed or statistically constructed end-users. However, as elaborated above, the stakeholder networks that need to be animated to bring a design to fruition tend to be composed of diverse and sophisticated experts who live in rather unlike but interconnected worlds. These worlds need to be examined not only to assure that designs are compellingly communicated – following Rittel – but also to provide designers with the ability to be held accountable for their compliance with the above four ethical imperatives, for the intended and unintended consequences of their designs.

This calls for inquiries into the multi-dimensional spaces in which these stakeholders work and coordinate their various contributions. Possibilities pertain to what does not yet exist but might. They are articulated and shared in language. Inquiries that would reveal what could compel stakeholders to become part of designers' projects need to take seriously how stakeholders talk of what matters to them and the kinds of commitments they are willing to make. Such inquiries would have the effect of strengthening and expanding the reach of design discourse vis-à-vis the discourses of those who have a stake in what designers do. Compelling arguments for a design are also supported by what the preceding three design research aims can provide: demonstrations that a sufficiently large space of possibilities was explored, that the proposed design resulted from applying proven design methods, and that it was developed by competent and ethically compliant professional designers.

In my experiences, the kind of design research outlined above has a good chance to increase the respectability of the community of professional designers and expand the responsibilities this community can assume in inter-disciplinary collaboration aimed at human-centered technologies and social practices in culture and society.

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