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Design Discourse

DISCOURSE

Discourse is institutionalized text, talk, and constructive actions. It is consensually maintained and advanced by members of communities who identify themselves in terms of its premises, practices, and resulting artifacts. For example, medical discourse creates remedies for bodily illnesses and injuries. It determines how one can become a member of the medical community and governs an amazing array of constantly evolving methods and technologies for diagnoses and treatments. Legal discourse certifies its judges and lawyers and is practiced in specialized settings, the courts, by following established procedures and applying the rule of law to those accused, declaring them guilty of a crime, or innocent. Engineering discourse deals with the physical functioning of mechanisms. Practitioners earn degrees that qualify them to design and justify the construction of large structures, be they heating systems, engines, airplanes, bridges, or rockets.

People may cross discursive boundaries by assuming different roles—e.g., speaking as a designer in with a client and as a patient in a doctor's office in another. Most discourses are essentially incommensurate with one another. Lawyers do not have the qualifications of medical professionals and politicians are clueless about programming computers. Design discourse, however, has to be more inclusive.

A BRIEF HISTORY OF DESIGN DISCOURSE

To me, design is fundamental to being human. Everyday design ranges from making primitive tools and arranging the furniture in one's living room to pursuing a career.

The concept of a designer emerged during the industrial revolution. Manufacturers saw an opportunity to expand their markets by hiring artists who would make their products more sellable. Aesthetics was redefined as whatever might attract potential users, and design discourse focused on the beautifying of mass products.

However, not all artists were willing to serve industrial needs. William Morris, a major advocate of the Arts and Crafts Movement in mid-nineteenth-century Britain, had a contrary vision of what designers should contribute to society. He argued against meaningless ornamentation and cheap mass products in favor of artifacts that reveal the materials and craftsmanship that went into their making. This movement had a major impact on the way the quality of artifacts was talked of and conceptualized internationally but did not affect how designers in industry defined themselves.

The Bauhaus, too, cultivated a larger vision of society. It took mass production for granted and promoted simple geometric forms that it held to be of universal value, hoping to make their designs available to everyone.

Max Bill, the intellectual founder of the Hochschule für Gestaltung (School of Design) in Ulm, saw its mission in aiding the reconstruction of material culture in Germany, devastated by Nazi ideology and World War II. He argued for four func-

tions that all designs would have to satisfy. The technical, material, and production functions were primary. Only when these three requirements were met was the aesthetic function to be considered.[1] Users were not mentioned but implied in the technical function. Ulm was quite explicitly opposed to Raymond Lowey's styling and selling out to the interests of marketing.

My career started in Ulm. I had been working as an engineer but wanted to escape its computable functionalism; but soon recognized that functions are always assigned in order to limit a designer's focus to what an authority—a client or teacher—deemed essential. Inspired by exposure to research in social perception, and cultural anthropology, my diploma thesis[2] reconceptualized artifacts within social processes of communication among verbally competent users. I recognized that humans, endowed with language, can variously interpret their objects; and that the meanings users attribute to artifacts explains their interactions with them—interactions that the artifacts' designers can only marginally predict. This was long ago.

While at Ulm, we all understood that good explanations and justifications were the key to rendering designs acceptable. But how our own discourse worked was not part of our deliberations.

WHEN IS DESIGN?

In my view, professional designers always create innovations that make a difference in the lives of other communities. Innovations may be small or groundbreaking. However, copying what worked previously does not make a difference and ought not count as design; nor should following predicted trends.

It follows that design is inherently unpredictable. Designers always cross the very boundaries that everyone else takes for granted. Computers may aid design, even surprise their users, but they always operate within programmed boundaries and cannot serve as surrogate of designers.

Also, design should not be confused with problem solving.[3] Usually, problems are defined in the discourse of institutions interested in benefitting from particular solutions they can provide. Much of design starts with problem finding.

Teaching theories of design that extrapolate design histories confine innovations. It is well known that futuristic theories of technological developments have largely been failures, mainly because the community of designers does not follow prescribed paths.[4] We know of many examples of theories that stated decisively why something was impossible and yet designers found a way to make it happen. For instance, at a time when horses pulled carriages on tracks, it was predicted that engines with steel wheels on steel tracks could not possibly gain enough traction to pull a train. Well, we have locomotives now, and even bullet trains.

Although creativity is often attributed to celebrated designers, evidence suggests that most innovations, even when attributed to »sole geniuses«, actually emerged in conversations.[5] Indeed, designers almost always work in teams and build on the accomplishments of previous designers. Automobiles, for example, have a long evolutionary history. Generations of now unknown designers introduced innumerable small innovations which over time got us to cars that are fast, comfortable, and increasingly safe to drive, though perhaps not yet as efficient as we hope. Although it is largely illusionary to attribute the technologies we live with to individual designers, we can trace the roots of innovations to the discursive practices of their times.

While professional design focuses on social worlds larger than what individuals may construct for themselves, today, we can no longer discount the fact that

ordinary people discuss and design their own worlds with whatever is available to them. Unfortunately, current design discourse has largely ignored addressing the effect of its own medium of communication, of its own use of language. This may be due to the narrow focus of designers on products which cannot speak for themselves. Designers' projections of their own language on their artifacts demonstrates the failure to acknowledge that all designs start as proposals for something unprecedented. Ideas, proposals, plans, assurances of benefits, whether accompanied by drawings or models, are always discussed, presented and justified in the language of designers, in their discourse.

A TRAJECTORY OF ARTIFICIALITY

There is no doubt that design has expanded its discourse to include increasingly complex artifacts. I once described this expansion as a trajectory of artificiality of changing concerns,[6] starting with:

→ PRODUCTS, which are what a factory produces. The original design discourse was limited to serve manufacturers' needs to expand their markets. The focus on:

→ APPEARANCES began as an add-on of product design but quickly became a more general concern for how the meanings of artifacts emerge in communication among users and bystanders. It further expanded the range of designers' competencies to address what people talk of, admire, or despise, their loyalties to brands, the emergence of fashions and celebrities, public opinion, and the discursive differentiation of user communities.

→ INTERFACES with computers became the model for designers who realized that the form and appearance of artifacts is only the first step to how users interpret their artifacts and interactively engage with them. The ability to design interfaces became indispensable as artifacts grew in complexity, exceeding their users' ability to understand what was below their surfaces. Interfaces are very much tied to the use of language. They draw on familiar linguistic tropes, narratives, and cultural habits. For example, to enable users to handle the complexities of personal computers, interface designers relied on familiar metaphors of the paper world. Shifting from forms to interfaces revolutionized the conception of what designers had to enable, even for simple devices.

→ MULTI-USER SYSTEMS NETWORK very many participants to their respective benefits. Their design must accommodate the conceptions of their numerous and diverse users, for example, in proposing public services, restaurants, airports, health care systems, and Internet platforms. Such systems do not need to merely work, they need to grow. This is because the benefits to their individual users become amplified by the growing numbers of often anonymous participants, with vastly different interests and capabilities to contribute to everyone who cares.

→ PROJECTS bring different people into communication with a shared mission to introduce changes in the world. Designers often face interdisciplinary work-

ing groups who define problems and develop solutions that their participants could not imagine on their own. Projects also include starting businesses, organizing public campaigns, and protest movements. Being able to facilitate such communications is a frequent challenge for designers. Finally:

→ DESIGN DISCOURSE is practiced whenever designers consciously engage in their own work and have to articulate their competencies when working with other professions and disciplines who have their own vocabularies and foci of attention. Designers designing their own design discourse is a self-reflexive effort of design teachers and professionals. It requires awareness of what one's own use of language does, when it limits one's perceptions and actions, and how it can open previously unimaginable possibilities. Advancing design discourse may start with critical examinations of how design discourse is taught, published, and practiced. It is honed when interacting with competing discourse communities or in collaboration with experts from other disciplines. In such collaborations it is important for everyone to know what designers can bring to the table as well as the responsibilities designers are willing to assume for the social consequences of their contributions. Good designs have more to do with how what they do is talked of and change the worlds of users and non-users than with appealing forms. A design discourse needs to provide the conceptual structures in which designers can operate responsibly to others.

WHAT DESIGN DISCOURSE NEEDS TO FACILITATE

Whereas other professional discourses are relatively autonomous, if design is to make a difference in the lives of targeted communities, it must embrace their languages, discourses, and resources, and their inclinations to move beyond current habits. For designers, listening to others does not mean surrendering to the conceptions of those who claim to have a stake in a design, i.e. the stakeholders, whether clients, users, and people unintentionally affected. It means being able to cooperate, actually and virtually, with a design's (potential) stakeholders.

I have seen many development teams in which designers were forced to play minor roles because their discourse was insufficiently grounded in evidence and thus unable to withstand the rhetorical strength of other stakeholders, often based on statistical and theoretical arguments that constrained innovation. Following are three large classes of practices that would strengthen the discourse of designers.

Methods of inquiry

Designers apply all kinds of research methods borrowed from other disciplines, but there are several methods that are unique to design. One is to survey opportunities. Ethnographies of unimagined possibilities[7] explore burdensome practices, difficulties, dangers, fear of failures, costly mistakes, and boring tasks, knowledge of which can inspire designers to make important contributions. Interviewing people about their desires, a method of marketing, rarely reveals anything other than what is already known.

Given that designers cannot start from scratch, another method involves surveying existing technologies, materials, and practices for their unexplored combinatorial possibilities.[8] Especially new artifacts tend to arise in specialized contexts

of use. Examining which of their unutilized affordances may be combined in larger systems has always been an important source of innovation.

Traditionally, design research was limited to testing whether proposed artifacts were producible, marketable, and of practical use. These verification methods are important. However, post-design research extends this inquiry by following the paths design proposals have been taking to wherever they end up. It enables designers to evaluate the ultimate reasons for why their designs succeeded, evolved into other artifacts, and where they got stuck and failed. Systematic post-design research expands the scope of design discourse by identifying facilitators and obstacles.

While all design research methods ought to aid design processes, they must also convince the stakeholders in designs to get on board. To be clear, data always represent the past from which designers need to deviate. Evidence-based design cannot go beyond available data. Design research results are best evaluated in creative conversations among designers and with relevant experts. Conversations, to the extent they are conducted with openness and mutual respect, are the most efficient evolutionary practices we know of. Participants bring different discourses into interaction, elicit suggestions from each other which go beyond what is known, and either elaborate or ignore them by mutual consent.[9] Conversations are inherently unpredictable. Drawing on multiple perspectives and proceeding by mutual consent reduces the risk of innovative proposals to fail.

Participation in stakeholder networks

Plans and design proposals, even if illustrated by drawings, models, and videos, always need to be communicated and can thus hardly avoid the use of language. To succeed, they must include convincing justifications for the benefits they could provide to anyone capable of facilitating, acquiring, enacting, using, and living with them. Any proposal faces networked stakeholders without whom it cannot become real and make the differences that its designers may have envisioned.

By definition, stakeholders have a stake in something, here in furthering a design to its realization or opposing it. Stakeholders are far from being passive recipients of instructions. They have their own discourses, expertise, and resources by which they judge a proposal, and enable or deny its realization.

Stakeholders may be executives in board meetings deciding on how a design fits their corporation's mission; engineers having to ready it for production; marketeers evaluating its possible markets; salespeople needing to attract customers; buyers weighing its costs against its benefits; users looking for efficiency, support, and perhaps social recognition; suppliers providing services that maintain its use; recyclers aiming to salvage what could be used elsewhere; and environmental activists making sure that it would not destroy the ecology for future generations. Any important stakeholder can bring a design to a halt. A design that fails to move through the network of its stakeholders cannot make a difference in the world.

The equation of design with executable specifications for realizing a product was valid during the industrial era and may still be so within hierarchical administrative structures that enforce compliance. However, our social realities have become more fluid, complex, and networked, as well as increasingly defiant of traditional power structures. Especially when moving up the trajectory of artificiality, design discourse cannot be legislated. It needs evolve in the process of overcoming resistances to proposed innovations, attract supportive stakeholders, and overcome the objections of opponents.

Given that all stakeholders have their own discourses, their own ways of judging whether they have an interest in engaging with a proposed design and the means to do so, the reasons that would enlist them in designers' projects may not be merely economic. The possibility of making creative contributions tends to provide the more important and intrinsic motivations for stakeholders to enroll in designers' proposals and facilitate moving them through the simultaneously emerging stakeholder networks. For example, bankers are motivated by the possibility of increasing returns on their investments, engineers by the opportunity of developing a new mechanism for making an artifact work, salespeople by attracting new customers, and users by a desire to improve their social situation.

Stakeholder networks emerge and stabilize around repetitions. Designers have to recognize that they cannot prevent their proposals from evolving or being reinterpreted in the process of passing through the stakeholder networks. Their proposals need to provide spaces for such reinterpretations. The best chance for designers' proposals to survive is to anticipate and allow all relevant stakeholders to interpret and act upon such proposals in their own discourses. Designers need to create their proposals so that they provide the affordances required for stakeholders to creatively contribute without overly distorting their designs. Today, designers succeed mainly by delegating design to successive stakeholders.

Personal computers, cellphones, and the World Wide Web are prototypical examples of the results of delegating design to an unknown diversity of in their own way creative users. These artifacts are designed as open multi-user systems that allow their users to upload and download a variety of applications and create their own worlds to interface with. Social media can communicate any message in any written language and on any subject. How the use of the Internet is now evolving was unimaginable for those who designed its original code.

Delegating design, which is partly facilitated by widespread digitalization, is a serious conceptual challenge to designers in contemporary society. Some fear it may eliminate the design profession altogether. However, if design discourse is continually updated and expands the scope of design practices into increasingly complex areas—as in the aforementioned trajectory—delegation will preserve designers' role as cultural innovators. Underlying this reconceptualization of design is the admission that designers can no longer claim exclusive authority over what their designed artifacts come to mean to others and how these meanings may be enacted.

In our information age, design discourse has already shifted its attention from designing the forms of functional products to the design of affordances of interactions that enable communities of stakeholders to design their own discursively meaningful interfaces with(in) their worlds.

A NEW EPISTEMOLOGY OF ARTIFACTS

To be clear: artifacts do not speak a language; humans do. Proposals are texts in need of interpretation by literate readers. Texts neither know what they contain nor speak for themselves. This is true also of products, appearances, multi-user systems, or even projects. People talk with one another, negotiate the meanings their artifacts have for them, and use them accordingly. Designers may visually or verbally encourage stakeholders to interpret and act within the scope of their artifacts' proposed

affordances, but they cannot prescribe the perceptions and actions of those who come in touch with their designs.

Generally, most affordances are not recognized and never acted upon. Think of what one could do with tableware, which is designed and used mainly for eating, washing it thereafter, and storing it for another occasion. Tableware has been used as rhythmical support for music. Children are fond of playing with it. It can serve as a tool to pry open a can, or even as a weapon. Contexts matter, both physically, by enabling or preventing intended uses, and socially, by encouraging uses that are appropriate or inappropriate in a given situation. Designing the affordances of artifacts requires exploration of both, the diversity of contexts in which these artifacts might find themselves, and the multiplicity of interpretations that diverse stakeholders' discourse communities encourage in order to interactively create their worlds. Naturally, the affordances that designers need to explore before proposing their designs ought to exceed by far the affordances that any one individual stakeholder could imagine.

The epistemological challenge for designers lies in abandoning the naïve conception of an objective and universally shared reality in which their design enters, is used as intended and by everyone alike. This conception leaves no space for non-designers to see their world differently without being judged wrong. In contemporary society, designers have to acknowledge that the artifacts they propose merely provide affordances to their stakeholders, who interpret and use them in their own terms which is to say that the actual use of affordances depends on which concepts, metaphors, and narratives are circulating in the discourse communities in which designs are likely to enter.

All discourses are validated by the successful actions they encourage.[10] The history of the scientific discourse demonstrates that reality can afford numerous theories. Some failed by not affording the actions they entailed, others succeeded by enabling scientists to build on their affordances.[11] Metaphorically speaking, reality is a dumb communicator, including the artifacts that become part of it. They can say only »no« or silently comply with how they are talked of and treated. We experience that »no« when our computer does not comply with what we intend to accomplish. The pilots of Boeing's 737 Max experienced it when they could no longer control their airplane. Some say that such experiences are due to their users' inadequate conceptualizations. This may well be so. Equally arguable is that the designers of these artifacts ought to be held accountable for failing to limit the affordances of their designs to how users' are accustomed to interpret, talk of, and act on what they see, especially when the complexity of designs exceed their users' ordinary comprehension. Interfaces should not afford behaviors detrimental to their users.

The latter explanation points to the fact that designing artifacts for communities other than their own requires designers to step out of their own conceptual bubble and explore the affordances of their designs, the contexts in which they might be used, the narratives, conceptions, and related actions that their stakeholders could bring to a design and prevent the latter from getting into trouble when routinely enacting them.

ETHICAL CONSIDERATIONS

The »no« experienced when interacting with one's world signals an important obligation for designers: Preventing uses of designed artifacts that nobody hopes to be afforded, whether for social reasons or because of the irreparable harm, even loss of lives, they could inflict. All modern safety features, for instance in cars,

are constraints on undesirable affordances. Fingerprint verification as a check on pulling the trigger of a gun prevents unauthorized uses and saves human lives. Designing containers for medications that children cannot open prevents them from mistaking pills for candy.

The task of deciding which of the multitudes of affordances to encourage or disable easily runs into cognitive limitations and raises ethical issues. Unanticipated consequences, exemplified above, demonstrate designers' cognitive limitation. Who would have thought that trucks designed for transporting goods could be used to indiscriminately kill masses of innocent people? Ethical issues arise when designs selectively discriminate against stakeholder communities.

Both issues need to be addressed. When designers converse with their stakeholders' diverse discourses, it is easier for everyone to become aware of the multitudes of affordances a design might be facing than when working alone.[12] It is also easier to distinguish useful from harmful affordances as well as how to limit the latter. Therefore, the discourse of designers ought to transcend its traditional focus on fictional end-users and serving manufacturers' needs for sales in favor of pursuing larger socio-technical perspectives. This includes considerations of both the complexities of the stakeholder networks into which a design is entering, and the affordances that can bring a proposal to fruition. Exploring beneficial and dangerous affordances applies to material and social artifacts alike, and it is certainly facilitated by the spread of digital technologies that offer their users uncountable alternatives.

Ethical considerations arise when designers decide to support some and disable other affordances as perceived by different communities. Enhancing the products of one corporation invariably disadvantages another. There is nothing wrong with competition. It can drive innovation. However, corporations are made up of people who are committed to coordinate their actions and responsibilities for the benefit of being employed. Corporations are abstractions in the language of employees and the law; people are not. For these reasons, the ethical imperative for designers that I have been advocating concerns the people who face an amazing array of alternatives and dangers in their place of work, at home, in the public sphere, and as members of discourse communities that construct meaningful worlds for them.

I am suggesting that designers commit themselves to refrain from proposing artifacts whose affordances benefit the members of one discourse community at the expense of those of another.[13] To live up to this imperative, design discourse ought not be subservient to the interests of corporations who pay for developing designs; ought not ignore communities who are affected by designs but whose concerns are suppressed; ought not dismiss our shared bio-physical environment whose ecology is being shaped by human uses of artifacts but does not have a voice of its own; and ought not become a narrowly defined discipline that carelessly dismisses its undesirable effects as merely »unintended« or the responsibilities of other discourse communities.[14] ↳

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