Faculty of Design

2013

Designing systems for praxis and critical engagement in design education: the speculative design method and the revelation of theory

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A Curriculum of Liberatory Praxis

Relating Systems Thinking & Design 2
AHO, Oslo, Norway

Working Paper

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Nov 2013

Introduction

"Whenever we need a revolution, we get a new curriculum," writes Neil Postman (1992) as he paraphrases Lawrence Cremin (185). One might understand Postman's comment here as a jab at education reform as a means to placate those seeking a true cultural shift. Alternatively, it may be seen as a critique of the contemporary state of "revolution"—impossible without a concurrent interrogation of our collective pedagogical philosophies. Indeed, revolution is difficult to come by these days, particularly in the design world. Often driven by a focus on the symptoms that our "disruptive technologies" can address rather than seeking to impact the systems in which our startups and their technological crutches are situated, today's "solutionist"[1] approaches use information design, big data visualization, ambient intelligence, and other techniques oft-hyped as "game changers," completely altering the "rules."

But what of forgoing the symptom's quick-fix and treating the disease instead? We may have witnessed a great deal of change in the past decade or two. But, despite the aspirational rhetoric of many a Silicon Valley venture capitalist, we have missed many an opportunity to engage in revolutionary behavior. Our missed opportunities are the consequence of a lack of understanding of the systems in which we participate and operate, and a resulting lack of an ability to be critical of those systems. This predominantly unnoticed dearth of knowledge and ability to be critical is particularly prevalent in design education.

The authors of this paper would like to believe that they are design educators looking to foment a truer—albeit more nuanced—revolution. Educators working in the service of "revolution" is by no means a novel concept. Neil Postman clearly understood this, but he also knew that "revolution" is a fuzzy and frequently co-opted term. Nonetheless, there is a strong history of educators who believe their work is in the service of revolution. Jeffery Duncan-Andrade and Ernest Morrell preface their book, *The Art of Critical Pedagogy*, with the statement that, "[o]nly when all students, all people, have equitable access to their humanity and to the full material resources available will our work be done. That sort of change only comes with revolution" (22).

Liberation is a term that is frequently paired with "revolution," though rarely in the realm of business rhetoric. The most prevalent invocation of the notion of liberation in an educational context is in the discourse of critical pedagogy. Paulo Freire (2011), widely considered to be the progenitor of the discipline of critical pedagogy, writes, "[a]uthentic liberation—the process of humanization—is not another

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1 A term used by Evegeny Morozov in his 2013 *To Save Everything, Click Here* and related writings.

deposit to be made in men. Liberation is a praxis: the action and reflection of men and women upon their world in order to transform it" (79). Freire argues that the entire goal of education should be the pursuit of a fuller humanity, and is therefore liberatory, resisting the forces in the world that attempt to dehumanize us. bell hooks (2000, cited in Duncan-Andrade and Morrell, 2008), argues for a critical pedagogy from a systemic perspective, stating that educators must maintain a "solidarity with the poor" rooted in the "recognition that interdependency sustains the life of the planet." (36). Subcomandante Marcos, the masked leader of the Zapatistas, also reminds educators of the link between revolution, liberation, and education. "Like many critical pedagogues, Marcos is deeply committed to the principles of liberatory education with the aim of aiding young people to become the vehicles for justice" (in Duncan-Andrade and Morrell, 46).

The authors of this paper believe that in order to begin a process of liberation and facilitate revolution, we must teach our students to know how the systems in the world work and to be critical of them. This is particularly important in the context of design education, a precarious and potent middle ground situated between theory and practice, academia and commerce, expression and communication. Without an adequate understanding of systems, our students will not have the capacity to be truly critical. And understanding without criticality is irresponsible.

This move towards teaching about systems requires a fundamental shift in design education, particularly design education in the United States. Dr. Meredith Davis, head of the PhD program in Design Education at the North Carolina State University, argues that American design education is "hopelessly stuck in the past." She asserts that "design education, at the most fundamental level, views complexity as a *problem to be overcome through reductivist artifacts*, not as an inevitable and pervasive attribute of life in the post-industrial community." (Emphasis hers) Davis goes on to argue that today's American design educators are teaching with curricula that are nearly identical to the highly formal approaches privileged in the 1970s.

Basic Systems Vocabulary in Design: Elements, Relationships, Ideology

If, as Davis implores, we must teach for complexity, facilitating experiences wherein students consider systems—the point of emphasis with which she concludes her paper (2008)—we must investigate what we mean when we say "system."

Donella Meadows presents an accessible and thorough exploration of systems thinking in her book, *Thinking in Systems* (2008). She defines a system through its

component parts. Systems, she says, are always composed of three things: elements, interconnections (or relationships), and function or purpose (11). Elements are the parts of a system that are easiest to notice. They are the "things," the "objects." Meadows uses the example the game of American football, in which the elements include the players, the ball, the coaches, and the field. The interconnections, the relationships, are often slightly more difficult to notice at first than the elements. In the case of American football, the interconnections are the rules of the game, which are not necessarily revealed explicitly on a given play. Even more obscured than the relationships in a system is often its function or purpose. This is no different in American football, where the purpose could be to have fun, win games, make millions of dollars, or some combination of all three. Problematically, because of the obscured nature of functions and purposes, Meadows points out that systems and sub-systems may function at cross purposes, creating overall system behaviors that are detrimental to people or the environment (15).

In the same way that design firm Experimental Jetset has insisted that they are interested in going beyond the function of a design and into the ways in which a design embodies a specific point of view (2005), we prefer to take Meadows' third part from purpose into ideology. Certainly, the word ideology itself—not unlike "revolution"—has received its fair share of critique. In his review of its various connotations, Raymond Williams points out that its popular usage today occurs in the pejorative—an "ideological" approach is in opposition to a philosophical or sensible one. The term's complicated past positions it as befitting, perhaps, our appropriation to illuminate the ambiguous nature of the "function" or "purpose" of a system.

Elements

As graphic design educators, we spend much of our time teaching our students how to design objects—both traditional, physical design objects, such as posters or books, as well as media objects, such as websites and animations. Within the context of an assignment, these objects are often viewed in isolation. These design objects are critiqued for aesthetics, legibility, and sometimes capacity for meaning-making, but are less frequently examined within a context of relationships with other objects (outside the assignment itself) or within the broader systems in which these objects take part.

As an adjunct instructor of graphic design, one of the authors, Zachary Kaiser, taught a project that focused on the relationship between text and image. In this project, known as the "Constructed Typography" project, students take a "fact" or statistic and represent it with physical objects that are somehow related to that statistic. These posters often become advocacy posters for things such as recycling, preserving endangered species, or healthier eating. While the class discusses the power of the image-text relationship, the hierarchy of the page, or the color choices, Kaiser did not ask his students how these posters function within the culture in which they are created or if there might be an alternative intervention more appropriate to the topic than a poster. This is, of course, because the assignment begins with form. In designing assignments and projects, the design educator leads by example. To design a project that takes an unyielding form-first approach is not a systemic approach. Moreover, To determine form is to detract from the potentially transformational potential of a problem-posing design education.[2]

Even assignments that require systemic solutions are not contextualized in a broader, systemic sense, particularly from a critical point of view. The boundaries of the assignment's system are not critically explored. For example, an identity redesign project that Kaiser taught does not ask students to question the brand's purpose or to re-imagine the nature of the brand itself. It asks for a purely visual solution: design a new logo, new letterhead, new promotional collateral. This sort-of design project applies boundaries that are form-determining, driving the focus of the students towards a limited view of elements and, when present, the relationships between those elements (fig. 1). Midgley (1996) acknowledges the importance of the application of boundaries, even in critical systems thinking, where, without boundaries, critical thinking will "inevitably fall into the trap of continual expansion and eventual loss of meaning" (18). At the same time, a lack of criticality results in a "'hardening of boundaries' where destructive assumptions remain

fig 1. *Burt's Bees Rebrand* by Eric Sachs.

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2 Paulo Freire argues that "Those truly committed to liberation...must abandon the educational goal of deposit-making and replace it with the posing of the problems of human beings in their relations with the world. 'Problem-posing' education, responding to the essence of consciousness—intentionality—rejects communiqués and embodies communication" (79)

unquestioned because the system boundaries are regarded as absolute" (18). Engaging in "critical boundary judgments" and boundary critique is incumbent upon design educators now more than ever.

Much of today's American graphic design pedagogy remains situated within these boundaries that emphasize form, relationships between form, or systems of form. Constrained without a critique of these boundaries, design educators miss an opportunity to catalyze investigations of system function or ideology, and, subsequently, criticality. Such investigations become crucial as functional relationships (the importance of which was explained to the advertising world by R/GA at Cannes in their talk, "The Next 9 Years") between objects have become the fulcrum for value creation and product and service differentiation.

Relationships

Brands, after all, operate on the relationship level. In their 2007 book, *Global Culture Industry*, Scott Lash and Celia Lury explain our relatively recent "mediation of things"—that is, today's media objects have more than simply cultural value, they have use-value and exchange-value. Whereas in Adorno and Horkheimer's culture industry, movies, music, and the like were commoditized in order to satiate and placate, today's media objects are industrialized:

> There is such a thingification of media when, for example, movies become computer games; when brands become brand environments, taking over airport terminal space and restructuring department stores, road billboards and city centres...We deal with media as representations—painting, sculpture, poetry, the novel—in terms of meaning. When media become things, we enter a world of operationality, a world not of interpretation but of navigation. We do not "read" them so much as "do" them ("Just Do It"), or do with them. ... What was incipient with the emergence of mass media has become the axial principle of global culture industry. In global culture industry, what were previously media become things. But also what were things become media (8).

This move, then, from commodification results in a more recent focus by brands on a "post-Fordist and design intensive production of difference" (5)—a difference that occurs not on the level of product features but in how those goods are represented by the brands that sell them. As such, today's brands operate on the level of the symbolic: there is no direct way to interact with a brand itself, only through the way it represents itself in media and goods.

Some design programs have responded to this shift in commerce and culture by exploring more deeply the intentional design of relationships. These design

programs are still, however, responding, as they almost always have, to commerce, and are preparing students to be professional practitioners, active participants in the marketplace.[3] A focus on professional practice, however, situates citizens first and foremost as group (corporation/business) members and not as citizens. Ulrich's (2000) call for a critical, reflective practice that expects professionals to act first and foremost as responsible citizens and not special-interest or corporatized group members resonates with us. It is nearly impossible to achieve such a vision if education that prepares students for professional practice is not imbued with a reflective criticality. At the same time, it is possible to investigate the design of relationships from a critical standpoint within the context of current practices in American design education.

At the Massachusetts College of Art and Design, we task our seniors with designing a service and the ecosystem of touchpoints that drives it. This service design project, led by Professor Brian Lucid, is part of the Design Research class, which is a required course for MassArt seniors. During graduate school, both authors were Professor Lucid's teaching assistants. According to Professor Lucid, the project "asks students to identify a social group that they feel is under-served in the digital marketplace. Based upon demographic research and ethnographic 'field studies', they then develop a proposal for a prototypical digitally-centered service—with multiple touchpoints— tailored to their user group" ("Brian Lucid - Vimeo"). The final deliverable for the project is a narrative user scenario video that explains how the service works. Groups have developed services for a variety of people and in a variety of sectors, with some more specifically targeted than others. For example, one group developed a platform to connect garage sale enthusiasts with the products and sales of interest to them. This service leveraged location-aware services, digital tagging, physical kiosks, and even garage sale shuttle buses. While designing each of the elements of the system, the primary design challenge in this project is to design coherent and logical relationships between the elements of the service. These relationships go beyond the visual and extend into the functional. How are products tagged and added to the database of the website? How are permissions addressed in the smartphone application and how do those relate to the user logins on the site? How are destinations for the shuttle bus determined based on the data of the users riding it? And yet, the project does not address the larger system in which the proposed service system must operate: it does not have (nor was it required to have) a revenue model;

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3 An example can be found on the Massachusetts College of Art & Design Graphic Design BFA description website at
  http://www.massart.edu/academic_programs/graphic_design/graphic_design-bfa.html

nor were the students asked if they felt like it should need to have a revenue model in the first place.

The groundwork for the service design project, and, if we take the initiative to prompt them, more critical investigations of the manufacture of relationships, is laid at the earliest stages of MassArt's graphic design curriculum. In Kaiser's Sophomore Design Studio class, students design systems of textile patterns. Through this project, he helps students see in terms of relationships. Students write algorithms that govern the behavior of the visual elements in their patterns and therefore investigate the important relationship between rules and behavior in systems. This relationship is a concept that is, according to Donella Meadows, fundamental to systems theory; indeed, she argues that rules are one of the more effective points of intervention in a system (158). In a pattern, students learn that rules determine the relationships between the visual elements that make up the pattern.

If this sort of teaching about systems is to take on a liberatory or revolutionary twist, however, the learning done through the pattern design project cannot remain at the level of form. The author therefore aims to use this assignment to filter the manufacture of relationships through a critical lens.

As the sophomore students design beautiful textile patterns, drawing relationships between forms and sets of forms, Kaiser asks students to read short passages on rules and behavior in systems. The class discusses, for example, the potential parallels between the actions they take to design patterns and the ways in which possible actions within the capitalist system are defined and curtailed by the rules of the system itself. It is this reflection on the action of system design that prepares students to engage critically with other designed systems, such as those they might encounter later on in school or in the professional world.

The design practice in which Kaiser engages is also focused on the process of developing and reflecting on relationships through designed interventions intended for educational use. Sampler, for example, is a tool intended to help learners draw new relationships between content through a performative, improvisational experience of connection-making. The project is based on the process that hip-hop DJs and producers go through when they create music. It is a sampling and mixing interface for content that ranges from text to images to audio and video. Sampler is intended to facilitate a improvisational sort of research where learners identify relationships as they "mix" content (fig. 2). The mobile application records a learner's "performance" and syncs with the user's account on the web, allowing the user to use

fig 2. *Sampler* mobile interface.

fig 3. *Sampler* web interface as affected by mobile interaction.

the web-based interface (fig. 3) to go back and reflect on his or her experience and the relationships he or she identified. Having moved our students through the elements and relationships within a system, it becomes imperative to complete the continuum through an elucidation of the ideologies embedded within.

Ideologies

In *Towards a Philosophy of Photography* (1983), Vilem Flusser writes about understanding the ideologies built into the camera or, using his more abstract term, the apparatus. The designers and builders of the tool created a program for the user by making decisions on the features, interface, and technical limitations of the product. Certainly, there are many options in that program, but it is a program nonetheless and it means the designers have determined the ways they'd like the consumer to use the camera. In that sense, there is an embedded ideology in the apparatus.

In considering the aforementioned demonstrated emphasis on the full "experience" of a brand within both the commercial design studio and design academy and in understanding that brand experience as operating on the symbolic level, Flusser's assertion becomes even more poignant: the features, interfaces, and limitations of a symbolic apparatus exist solely on the relationship level, further embedding the resulting ideologies. Surely, systems mapping provides a visual representation of how we observe the flow of the real, but not, perhaps, the implications of how the symbolic works within a system—where and how the ideologies within affect participants and users.

The authors of this paper believe that attempting to understand the symbolic requires that it be designed not *in* the context of the real, but *in* the imagined. In taking on that task, our students are able to abstract their investigation without the distractions of the minute details that make up a system with *which* they are familiar.

As an example, the other author of this paper, Gabriel Schaffzin, was working with the students *in* a course titled *Narcissism, Aggression, and Creativity*, a liberal arts elective given at an art and design school. The purpose of the course was to help the students contextualize their own work *in* the grander scheme of popular culture through the exploration of psychoanalytic theory. After reading Sigmund Freud's *Civilization and Its Discontents*, the students then read M.T. Anderson's *Feed*, a young adult dystopian novel where *human* memory is supplanted by a chip *in* the brain. The goal was to help the students connect Freud's assertions about memory to the way the characters *in Feed* understood memory's purpose as it was conveyed by the media produced by the brands they worshiped. As such, Schaffzin broke the students into groups of varying disciplines (fashion designers, illustrators, graphic designers, etc.) and told to design an object that came to *mind* when considering Freud's writing. No further direction was offered at that time.

Incidentally, all of the groups came back with commercial products—varying significantly *in* purpose. One group of students wanted to aid memory by storing it outside of the brain (fig 4). Another wanted to help individuals remember dreams with a device that would replay them during consciousness. Two other groups tried to help individuals break their addictions to their mobile devices, one offering an app that would block most of the phone's functionality, another offering a "jumbotron" that
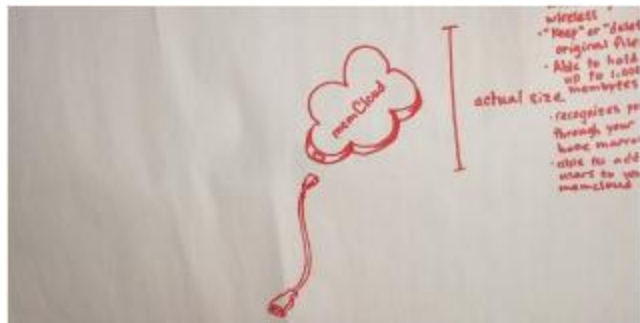
fig 4. *memCloud*

fig 5. *Jumbotron*

would publicly shame an individual who insisted on using his or her phone at the dinner table (fig 5).

While the students presented, Schaffzin posed more specific questions than what had originally been offered. The students were interrogated on who made the product, how much it would cost, who would be able to buy it, where it was sold, and so on. At first, students would offer simple answers: "Google...or Apple." "A few hundred bucks." "Anyone, I guess." But then they would be forced to consider their answers further. Would Apple really want to sell an application that reduced device use? Would those living on lower income have to forgo memory enhancement? It was the frustration in the students' faces as they tried to answer that indicated that they had started to contextualize their work in the grander scheme. They began to take hold of the tangible criticality that speculative design inspires.

The Continuum and Curriculum

Much as we argue that systems are made up of elements, relationships, and ideologies, we believe the future of design education lies along that same continuum. A critically reflective practice of design at every stage of this continuum is an essential component of the liberatory potential of design education. This critically reflective practice directly results in a tangible criticality: designed systems and objects that can be viewed, experienced, held, and critiqued, that reveal the critical reflection in which students are engaged. Such a tangible criticality is a Freirian praxis of design that catalyzes critical engagement with systems and a reflection upon that engagement. This continuum includes work in which we are currently engaged both as educators and designers: from the programming of textile patterns to establishing the relationships between touch-points of a service, through to the consideration and elucidation of ideologies that are embedded in those relationships.

Without a design education that fosters a tangible, reflective practice of criticality, we allow the ideologies embedded in systems to achieve hegemonic status. We therefore not only encourage students to become designers of systems, but to become critics of systems. It is our personal hope, as design educators, to bring this curriculum and continuum of liberatory praxis into being in a more formal manner in order to inspire the kind of criticality for which these future designers are perfectly positioned.

Works Cited

"Bachelor of Fine Arts." *Massachusetts College of Art and Design*. N.p., n.d. Web. 29 Oct. 2013. <http://www.massart.edu/academic_programs/graphic_design/graphic_design-bfa.html>.

"Brian Lucid." *Vimeo*. N.p., n.d. Web. 12 Nov. 2013. <https://vimeo.com/brianlucid>.

"Documents of Contemporary Art." *Experimental Jetset*, Jan. 2006. Web. <http://www.experimentaljetset.nl/archive/documents>.

Duncan-Andrade, Jeffrey, et al. *The Art of Critical Pedagogy: Possibilities for Moving from Theory to Practice in Urban Schools*. New York: Peter Lang, 2008.

Flusser, Vilém. *Towards a Philosophy of Photography*. London: Reaktion, 2000.

Freire, Paulo. *Pedagogy of the oppressed*. Continuum International Publishing Group, 2008.

Greenberg, Bob and Barry Waksman. "The Next Nine Years." Cannes Festival. Cannes, France. 22 June 2011. Speech.

Lash, Scott, and Celia Lury. *Global Culture Industry: The Mediation of Things*. Cambridge: Polity, 2007.

Meadows, Donella H., and Diana Wright. *Thinking in Systems: A Primer*. White River Junction, VT: Chelsea Green Pub., 2008.

Midgley, Gerald. "What is this thing called CST?." *Critical Systems Thinking*. Springer US, 1996. 11-24.

Morozov, Evgeny. *To save Everything, Click Here: Technology, Solutionism, and the Urge to Fix Problems That Don't Exist*. London: Allen Lane, 2013.

Postman, Neil. *Technopoly: The Surrender of Culture to Technology*. New York: Vintage, 1993.

Ulrich, Werner. "Reflective practice in the civil society: the contribution of critically systemic thinking." *Reflective Practice* 1.2 (2000): 247-268.