

Expanding and Refining Design and Criticality in HCI

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ABSTRACT

The term ‘critical design’ is on the upswing in HCI. We analyze how discourses around ‘critical design’ are diverging in Design and HCI. We argue that this divergence undermines HCI’s ability to learn from and appropriate the design approaches signaled by this term. Instead, we articulate two ways to broaden and deepen connections between Design and HCI: (1) develop a broader collective understanding of what these design approaches can be, without forcing them to be about ‘criticality’ or ‘critical design,’ narrowly construed; and (2) shape a variation of design criticism to better meet Design practices, terms, and ways of knowing.

Author Keywords

Critical design, speculative design, design thinking, design criticism, expanded design practice, critical theory

INTRODUCTION

There was a time when one had to argue for including designerly ways of knowing in human-computer interaction (HCI) research [21,37,55]. When design was included, it was as instrumentalized problem-solving. Anything else was considered superfluous, or, worse, art. That time is past. Now it is commonplace for keywords in design papers to include all manner of qualifiers: ludic, reflective, critical.

In particular, over the past several years, ‘critical design’ has received increasing attention in the HCI research community. While this signals a welcomed interest in new modes of design practice and possibilities for engaging designed products, we believe that the attachment to ‘critical design’ is problematic and there is a need for other articulations of criticality in HCI design, including design practices that eschew the very term ‘critical.’ Put awkwardly, we need additional ways of talking about and doing criticality through design, without being tied to

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CHI 2015, April 18–23, 2015, Seoul, Republic of Korea.

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<http://dx.doi.org/10.1145/2702123.2702438>

‘critical design.’ While this may sound like a semantic issue, it reflects deeper issues around design and criticism.

In this paper, we analyze how discourses around ‘critical design’ are diverging in Design and HCI (we use “Design” here to refer to the discipline as taught in arts-inflected design programs). This divergence undermines our ability in HCI to learn from, adapt, appropriate, and innovate the very design approaches signaled by enthusiasm for ‘critical design’. It does so by channeling exchanges with HCI through a narrow range of Design and design criticism practice. Instead, we lay out two ways to broaden and deepen the connections between Design and HCI: (1) by developing a broader collective understanding of what these new design approaches can be, without forcing them to be about ‘criticality’ or ‘critical design,’ narrowly construed; and (2) by shaping a variation of design criticism that better meets Design practices, terms, and ways of knowing.

CRITICAL DESIGN I: DESIGN

The term “critical design” was coined by Tony Dunne and Fiona Raby in the mid-90s. Since then, they have brought the term to the attention of the Design community and beyond through publications, exhibitions and designs. Dunne & Raby describe critical design in various, related ways [18,19,20]. For example, they position critical design against a standard “affirmative design” [19, p. 58], which they see as mindlessly supporting the cultural status quo. In contrast, they describe critical design as creating “products for the mind,” [19, p. 64], i.e. design proposals that question the role of design in shaping our everyday reality. For instance, the Electro-Draught Excluder, part of the Placebo Project series [19], purports to screen people from electromagnetic energy to which they might be sensitive. The device would not literally work: instead it is presented to question how products both raise fears and ameliorate them. Dunne & Raby see such proposals as fulfilling a critical function by “[e]ncourag[ing] the viewers to ask themselves why the values embodied in the proposal seem ‘fictional’ or ‘unreal’, and to question the social and cultural mechanisms that define what is real or fictional.” (p. 63)

Critical designs frequently project a strange user whose needs and desires seem odd, but which are, upon reflection, plausible if uncomfortable. For example, Toran’s “Object for Lonely Men” [53] describes a series of designs for after a break-up, replacing the lost partner with products

replicating perverse aspects of the relationship: a plate-throwing robot mimics the effects of arguments; a motorized housing steals the sheets at night; a smoking device shares a cigarette after a night of lonely sex. The intended “user” of the proposal, which is often based on and evokes a somewhat fictionalized lifeworld, appears to be not the user of the product itself but rather the reading audience of educated designers and other sophisticates who have the background and orientation to appreciate the form of tantalizing intellectual pleasure they embody.

Whereas in HCI we often think of “design” as necessarily entailing a “functioning” device that can be deployed and tested, in critical design designed objects are often not implemented to be functional or actually used in everyday context. Instead, they are prototyped with a sophisticated finish that suggests they already exist. In cases where they are implemented and deployed in everyday contexts, this use appears to often be oriented towards ‘performing’ the objects rather than assessing users’ experiences with them.

Within design studies and design research, critical design has served the purpose of reinvigorating discussions of design as a method of cultural provocation [38]. Some scholars take critical design as a starting point for discussing how social issues and political themes might enter design practice [40]. There have also been calls for a “post-critical design” that addresses limits of critical design, including its potential to reinforce rather than question and confront the status quo [16]. Even Dunne & Raby appear to be moving away from ‘critical design’ to ‘speculative design’ [18].

Of late, discussions are emerging about issues with and limits of speculative and critical design (SCD). Over the spring and summer of 2014 a lively debate has emerged around speculative and critical design as a colonialist practice, seemingly only concerned with Western problems of privilege (see [42], [52] and online discussion that erupted following [51]).

CRITICAL DESIGN II: HCI

While Dunne & Raby’s critical design work has long been a (perhaps underground) source of inspiration for HCI [e.g. 30,48], the popularity of the term “critical design” itself has recently skyrocketed. Perhaps the most significant and influential recent use of the term in HCI is a series of works by Jeffrey Bardzell, Shaowen Bardzell, and their collaborators towards a design criticism of critical design. This work was originally rooted in an interest in Dunne & Raby’s approach as a methodology to embody cultural criticism in design, coupled with concerns that the approach requires additional methodological and conceptual articulation to be accessible to HCI researchers [5,6].

In [5] Bardzell & Bardzell address this problem through a theoretical analysis of what it means to be critical, which they use to correct a series of conceptual problems they identify with Dunne & Raby’s articulation of critical design. To do so, they analyze ideas about criticality from two

traditions in criticism: critical theory and metacriticism. They synthesize both to articulate how these traditions can be understood to jointly frame what it means to be “critical.” Based on this framing, they propose a new definition of ‘critical design’ intended to more accurately describe how criticality manifests in design:

[A] design research project may be judged ‘critical’ to the extent that it proposes a perspective-changing holistic account of a given phenomenon, and that this account is grounded in speculative theory, reflects a dialogical methodology, improves the public’s cultural competence, and is reflexively aware of itself as an actor — with both power and constraints — within the social world it is seeking to change. (p. 3304).

They demonstrate how projects that are not Dunne & Raby style critical design could nevertheless be understood as ‘critical design’ under this new definition. In follow-on work to this paper, they and their collaborators build on this redefinition to develop reading practices that allow one to identify whether a particular design is critical and how it accomplishes that through design choices [4] and propose an iterative methodology for developing a general theory and canon of critical design exemplars [24].

In sum, Bardzell & Bardzell address both potential and shortcomings of Dunne & Raby-style critical design by developing a new form of design criticism for critical design in HCI, and in the process intentionally alter what critical design means. The stated aims of this design criticism are to help HCI researchers/practitioners, curators, the general public, and other stakeholders to establish what critical design is and to provide pedagogical support for researchers and practitioners outside of the art-influenced design tradition to do critical design.

Indeed, it does seem that critical design is gaining purchase in HCI, given the increasing number of papers that speak directly to critical design, as well as sessions termed “critical design” at CHI and DIS. This includes papers explicitly adapting ideas about critical design to new domains, such as Feinberg et al’s use of provocative designs to identify and undermine standard assumptions in meta-data design [22,23] and Wilde et al’s use of craft practices to raise issues around embodiment and disability [54]. Other works not explicitly using this term but folded under the “critical design” label at these conferences include Odom’s design of a device that challenges users’ expectations for speed of interaction [41] and Pierce’s design studies that shift design from expanding possibilities to restricting them [45]. These works signal an apparently increasing trend in HCI to collect and develop critically oriented design work under the banner of critical design.

A TALE OF TWO CRITICAL DESIGNS

In this section, we will argue that despite the proliferation of academic works aiming to bring critical design from Design into HCI, the terms of discussion in these two communities are diverging. In this section, we will explain significant differences in how each community understands (1) what critical design is, (2) where it fits into the space of

conceptually related practices, and (3) the kinds of knowledge practices required to make sense of them. What is at stake may at first appear to be a simple matter of terminology, but these differences both lead to and are symptomatic of a wider range of divergences about the actual and potential relationships between criticality and design. Our goal here, then, is both to surface these differences and explain why they make a difference.

Critical design ≠ critical design

As may be clear from the above discussion, there is a significant difference in the referent of the term ‘critical design’ in Design and in its latest uptake in HCI. In HCI, ‘critical design’ refers to a broad array of practices, ranging from the original practices pursued by Dunne & Raby, to the criticism-inspired definition of Bardzell & Bardzell, to an apparent broader identification of critical design to refer to any use of design that draws, or appears to draw, from a critical perspective. In Design, critical design is a highly specific term, referring to a known school of design particularly associated with Dunne, Raby and their students and disciples and associated with the Design Interactions programs at the Royal College of Art, London. This design school not only shares the programmatic philosophy mentioned previously but also has a cohesive visual and thematic aesthetic, easily recognized in the designed objects created under this rubric by Dunne & Raby and their followers. Critical design often draws on dark and uncomfortable subject matter. It brings this subject matter into an everyday context to create a tension, sometimes through black humor. Aesthetically it is quite polished and borrows the sleek and seductive visual and form language from fine art traditions and high-end design and advertising.

Critical design is not a formal organization, like the Situationist International, which formally endorsed or expelled want-to-be adherents. Nevertheless, it is strongly associated with particular actors at a particular historical moment expressing particular views on design and drawing on particular stylistic features. Thus, from a Design perspective the best it seems we could hope for in HCI in adopting critical design is to be derivative of the original. To build on its attitudes and methods in ultimately new ways would render the new approaches by definition, and without critique, “not critical design.” This aspiration also appears dated; in design studies critical design is discussed as potentially past its peak and there are calls for a “post-critical design” [16]. Even Dunne & Raby seem to be abandoning ‘critical’ in favor of ‘speculative’ [18].

While it is possible to argue that these Design concerns are not relevant to HCI, the redefinition of critical design also has a significant impact within our field on its ability to reflect on, learn from and critique the Dunne & Raby approach. By redefining critical design, we make it difficult if not impossible to refer coherently and precisely to the design practice that originated the term, which remains a key touchpoint for HCI discourse. In the process, we undermine, rather than enhance, HCI practitioners’ ability

to understand and build on that specific design practice. In order to keep terms clear here, for the rest of our argument we will use *critical design*TM to refer to the Dunne & Raby school and *criticism through design* to refer to the Bardzell & Bardzell criticism-based redefinition. We return to the question of labels for broader uses of ‘critical design’ later.

Critical designTM ≠ critical theory + design

A second significant difference between the two communities is how they frame the intellectual heritage of critical designTM. Bardzell & Bardzell argue for a significant conceptual linkage between critical theory and critical designTM. In [5] they open the section “Origins and goals of critical design” with discussion of the Frankfurt School, a strand of critical theory emphasizing a Marxist-inflected cultural critique of consumer society. While acknowledging that Dunne & Raby deny a close link, Bardzell & Bardzell argue that the vocabulary and concepts they use to describe the critical function of their work reveal an affinity to the Frankfurt School. Both frame society in terms of systemic structures of domination of which participants are normally largely unaware, and highlight the role of the critic/critical designer to reveal how those structures work and to provide conceptual alternatives. In doing so critical designTM emphasizes the search for unexpected meanings hidden under the surface of apparently neutral cultural phenomena that is the hallmark of critical theory. Bardzell & Bardzell thus see critical designTM as sharing the goals of critical theory, while embodying them in a new form: that of design research.

This connection then grounds and potentially legitimates the move from critical designTM to what we are terming *criticism through design*. Their redefinition hinges on working through what it means to be ‘critical.’ They do so through a masterful synthesis of a broad swath of critical literature from critical theory (philosophy), English-language literary criticism, and analytic aesthetics. Thus *criticism through design* is intentionally and explicitly linked to, indeed defined by, a humanities tradition whose epistemological hallmark is the construction of consistent and compelling textual arguments.

Within Design, the relationships between critical theory and critical designTM are seen as more tenuous and circuitous. There is certainly a shared sensibility between critical designTM and critical theory along the lines Bardzell & Bardzell suggest, but to the degree that Dunne & Raby draw on critical theory, they do so strategically and sporadically, using piecemeal concepts for inspiration and explanation, rather than attempting to construct a complete and internally consistent argument. As a design practice, critical designTM is perhaps better understood in relation to (1) recent design approaches that expand design methods, tactics and strategies beyond generating consumer products (e.g. research through design [26,56], speculative design [18], ludic design [28], reflective design [48], design fiction [e.g., 8,9,], contestational design [32], slow design [31,41], counterfunctional design [45], and adversarial design [15]),

(2) a 100-year history of avant-garde approaches, including Dada, Situationism, and tactical media [46], that “game the system” by integrating playful forms of critique with the design of arts ‘objects,’ variously understood [13], and (3) activist approaches to Design specifically, and making more generally, that aim to question and reframe the social role of institutional practices of design (e.g. Design for the real world [43], social practice art [35], critical making [47]).

In other words, **there is a 'critical' tradition in design and the arts that is largely independent of critical theory and metacriticism.** If we frame ‘being critical’ as necessarily and exclusively understood through these textual traditions, we make it more difficult to understand where critical design™ is coming from, we blinker from view Design perspectives besides Dunne & Raby’s of what criticality can and should do in design practice, and we may incorrectly assume that the only way to understand the meaning of design is through the forms and traditions of humanistic criticism.

Knowledge ≠ knowledge

A third significant difference arising between Design and HCI has to do with the forms of knowledge that are considered helpful for doing design. This is not our own insight; Bardzell, Bardzell, and their collaborators start by arguing that the forms of knowledge publically available about critical design™ are not adequately detailed for non-Design practitioners to learn from [6]. In [5], Bardzell & Bardzell criticize Dunne & Raby’s writings about critical design™ for their lack of coherence and direction:

Their primary strategy [to explain their approach] is to offer dozens if not hundreds of examples of designs that they argue serve a critical function. These examples... are thematically organized around provocative ideas. In many cases, these readings are supplemented with brief allusions to critical thinkers and design intellectuals.... [As an example, a chapter from *Hertzian Tales*] is a soup of ideas: dozens of challenging designs, a dizzying array of Marxist, semiotic, and architectural theorists follow on each other fast and furious, with little explication or development. (p. 3300)

In [5], they build on criticism’s theoretical firepower to clarify concepts they see as muddled or insufficiently grounded in critical design™. They move on in later works [24] to begin developing critical design criticism, or “a general theorization of critical design” (p. 357), which they suggest will make criticism through design more accessible to new practitioners. This movement “towards a systematic theory of critical design” [24, p. 368] draws in particular on the forms of knowledge from literary and aesthetic analysis and emphasizes the development of strong, coherent, rational arguments. For example, in [4] they and their collaborators describe design, by analogy to critical judgments, as “depending on judgments accompanied by arguments that seek assent” (p. 1953).

By this standard, Dunne & Raby’s manifestos indeed fare poorly, particularly in the context of humanist disciplines whose *raison d’être* is clear and consistent argumentation. Their works do not effectively answer the ontological

questions Bardzell & Bardzell see as key to being able to do critical design: What is critical design? How can you tell if a design is critical or affirmative? Is critical design art? Dunne & Raby do have answers to these questions, but, as Bardzell & Bardzell point out, it is not difficult to argue against those answers [4,5]. Seeking insight, but finding claims that quickly appear contradictory or nonsensical, it is no wonder that critical design™ may appear an “elitist mystery” [6, p. 290] missing a clear method or approach.

Yet, Dunne & Raby’s writings appear a fairly clear articulation of method if we take their claims not as *ontological* statements (“this object is inherently critical”) but as *tactical* statements about considerations to bring into design. Thus, for example, the statement that critical design™ is not art is not intended as an unsupportable claim that under no circumstances can an object created through critical design™ ever be thought of as an art object. Rather it is tactical advice that critical design™ proposals more effectively provoke thought if we present them as real products rather than if we frame them as art objects for safe and distanced contemplation. Similarly, the statement that critical design™ is different from affirmative design does not entail a dubious philosophical distinction between two distinct categories of designed objects. Rather, it rallies designers (somewhat heavy-handedly) to shift attention from purportedly supporting the status quo to questioning the realities design creates. The “soup of ideas” that defies conceptions of linear argumentation is exactly what Dunne & Raby have on offer: a grab-bag of provocative concepts and ideas which designers can draw on to inspire their own design work, without an obligation for rationalization. The work, we would argue, is deliberately polyphonic, because it is oriented to supporting (situated) *doing of*, not (formally) *knowing about*.

What is more, critical design™ is explicitly oriented towards *undermining* ontological certainty. Ambivalence plays a key role in the aesthetics and tactics of critical design™ as a way to set up situations that demand reflection, including at times ambiguity about whether a design proposal even *is* critical design™ (this strategy is also common in tactical media [46]). For example, Auger and Loizeau’s Audio Tooth [2] is a design proposal for an artificial tooth implanted with an audio receiver allowing persons to receive and send telephone calls directly through their skulls. While their description refers to an intention to stimulate dialogue about “the possibilities of biotechnology and it’s potential impact on society and culture,” it is presented on the authors’ website in language that suggests a promo commercial from a tech incubator and includes without comment several links to media coverage of the Audio Tooth as an affirmative product (including a Time Magazine award as one of the best inventions of 2002 [1]). The ambiguous framing of Audio Tooth (is it critical? Is it not?) is not a question to be settled but an issue the design intentionally raises, as this somewhat cryptic comment suggests: “The Audio Tooth Implant was pitched at a level

where its desirability and believability would be acceptable in terms of the contemporary attitude in society” [2].

Does this mean it is a mistake for design criticism to construct clear arguments about Design and to seek to answer ontological questions about the relationship between criticality and design? No; this seems a worthy endeavor speaking to a longer history of aesthetic criticism. However, we must be clear-eyed that because of its different epistemological register—one that emphasizes clarity over generativity, argument over inspiration, ontology over tactics—this work is unlikely to inform or speak directly to current Design practice, including the goal of bootstrapping new practitioners into a (critical) Design sensibility.

A WAY FORWARD: CRITICALITY AND/OR DESIGN

Stepping back, these considerations lead us to three key claims. First, **critical design™ is not the same, and does not need to be the same**, as either criticism through design or the broader range of design practices sometimes collected under this banner in HCI. Second, **critical design™ is only one of a wide range of related practices** from Design and beyond that provide important perspectives distinct from critical theory that we could learn from. Third, if the goal is to inform, inspire, and pass on the sensibilities of Design practice, we need **forms of design criticism that are more focused on clarifying tactics and less on resolving ontology**.

We recognize and welcome the growing interest in critical design and design criticism in HCI. In formulating our argument, our goal is to foster the flourishing in HCI of innovative design practices and analysis aimed at uncovering new possible relationships between criticality and design. **The key claim of this paper is that the best way to do so is to systematically open the gate for broader and deeper exchanges between new modes of Design practice and HCI** than the current terms of the discussion support. These deeper exchanges will enable a wider range of sources of inspiration in HCI; a deeper understanding of what designers in both fields are trying to do, actually doing, and how; and a culture that supports deep and thoughtful innovation and appropriation rather than imitation. Such an opening can be created, we believe, through two significant shifts in the terms of the discussion.

First, we argue for abandoning ‘critical design,’ both the term and the Design practice, as the primary touchpoint for discussions in HCI of design practices that embody, or could be read as embodying, some form of critical stance. One of the potential attractions of critical design™ is that it challenges many of the central assumptions of user-centered design (UCD): for example, that designs should be based on empirical, average, or acceptable user needs, or that the hallmark of quality for a design concept is how well a designed object functions in an empirically circumscribed setting. Yet these refusals to play by the rules of UCD are not exclusive to critical design™; as we will argue in more detail later, there is a significant range of new design

practices in both Design and HCI that provide alternatives to user-centered design by explicitly allowing for an authorial voice and by reframing how ‘users’ are understood. So, **one way we should open the gate to Design is by recognizing, understanding, and drawing on this wider range of practice**.

Second, there is a tension between the need for standard concepts to use for analysis and judgment, and the contingency of design. Arguably, the various areas of design thrive on practices and things that are provisional, partial and incomplete [27,50]. It is not that we cannot and should not analyze and critique critical moves in design—we must. But, at the same time, we need to recognize the dynamism and contingency of design and provide the space necessary for new modes of criticality to constantly re-develop. Put another way, setting boundaries and standards through processes of classification and categorization can thwart rather than incite criticality. The very character of critical work is that if it is to stay critical, it must be inventive. This is true both of the objects of design and the theories that interrogate those objects. Thus, **we should also open the gate by embracing rather than attempting to resolve the provisionality, partiality, incompleteness, and openness of Design practice**: in short, the mess.

What does this mean in practice? In the remainder of the paper, we embark on two complementary programs of action to open the gates between HCI and expanded practices of design. The first is to widen and deepen our collective understanding of these new design approaches. The second is to shape a variation of design criticism that can bridge between these discourses by aligning better with Design practice, knowledge and discourse. These projects overlap, but do not coincide; neither design nor criticism need be a handmaid of the other. In practice we expect (and hope this work supports) a range of practices.

DESIGN: EXPANDING & REFINING PRACTICE IN HCI

Our feeling is that the term “critical design” is currently being used as a sort of catchall for emerging design practice within HCI that extends well beyond both critical design™ and criticism through design. It seems to us, therefore, that use of the term “critical design” should be retired, or at least curtailed. In saying this, we in no way wish to dampen growing enthusiasm for work that questions, provokes or expresses adverse or adversarial propositions set in opposition to the status quo. However, we need to recognize and articulate differences among practices within HCI that combine “criticality” and “design” without force-fitting them into a ‘critical design’ straitjacket. We also need to recognize work that has affinities with “critical design” but without always relying on “critical” and its cognates, terms that can obscure the ultimately generative, productive and positive goals of such work.

Before suggesting alternatives to “critical design,” though, we must first ask ourselves why there has been such interest in the work. After considering the work that the “critical

design” label is doing in HCI, we will be in a better position to suggest approaches that support emerging design practices while avoiding the problems with critical design.

Recognize design authorship

In reviewing works coming under the banner of ‘critical design,’ it seems to us that HCI may be drawn to the term because it evokes practices that diverge radically from the user-centered design (UCD) paradigm. The use of “critical design” as a label could be a symptom of a new perspective for HCI; if so, a defining implicit tenet is that designers should not only be *allowed* an authorial voice, they should be *encouraged* to embrace, develop and enact one. By **design authorship**, we mean that design explicitly and significantly embodies intentions or ideas arising from a concern or curiosity of the designer. The product or service is a clear expression of the “voice” of the designer and her interpretation of social or cultural themes and concerns. While all design to some extent “embodies” such concerns and intentions, what’s unique here is that this is explicitly acknowledged and presented as such.

Design authorship may serve critical ends, for example by revealing hidden assumptions or challenging and aiming to change the status quo. But while authorship is a significant feature of critical practice, it can also be at play in works that do not fit under even the most expansive definition of ‘critical design.’ As the iPhone—emerging from Apple’s distinctly non-user-centered design approach—has dramatically shown, design authorship may usefully serve other ends, too: e.g. innovation and disruption.

Nonetheless, design authorship should be of interest to an HCI community oriented to critical reflection regardless of where it occurs because of its implicit challenge to UCD. Acknowledging design authorship diverges from some UCD approaches that see product designs as ideally emerging from a priori analysis of user needs. Projects exhibiting design authorship provide fertile ground for a critical reinterpretation of such work, even if explicitly “not critical design”. For example, hailed as an exemplar of research through design [56] and ‘critical design’ [24], the Drift Table has been described by its authors as a way of exploring “ludic” activities “motivated by curiosity, exploration, and reflection rather than externally defined tasks” [28, p. 885]. Yet concerns over ludic design are not motivated *a priori* by formal user studies. Instead they seem to arise from the designers’ own intuitions of what others may find to be of interest. What the ‘critical’ label here obscures is that the Drift Table is only tangentially ‘critical.’ It is more centrally authorial. And if we step back from the ‘critical’ label we find myriad examples in HCI of this sort of design to consider and draw from—old and new (e.g., [9, 11, 22, 23, 28, 29, 30, 31, 32, 34, 36, 41, 45, 48, 49]).

That said, acknowledging design authorship in no way demands a rejection of user-centered design. Users are and should remain an important consideration. But even as HCI has generally moved away from exclusively valorizing

utility and efficiency (evidenced by the rise of experience design and “third wave HCI” [10]), the specter of the user has arguably remained as a mythic guard against poor system design, or worse, the indulgences of designers. What expanded design practices help us to see is that people are more than “users.” When designers are allowed a clear voice, they are liberated to speak about topics and issues that are difficult to address in a UCD framework. For example, they can address experiences and stances that are particular, idiosyncratic, even alien or unacceptable. The authorial voice opens the possibility of new relationships with ‘users’, not as potential consumers of utilitarian products to solve their needs, but as collaborators in discovering new meanings and values in the things they design. Expanded design practices thus open us to new ideas about what designers are, who “users” can be, and how designers and users can speak to each other.

Expand our terminology

Despite its allure, the term “critical design” is too specific to serve as a label for the emergence of design practices that exhibit a “critical voice” in some form. Going forward we see three options. First, we could find a different label to indicate this movement. This appeals in that it recognizes what does seem to be an emerging area of design in HCI that adopts an authorial voice, distinguishing itself from traditional UCD. The problem is that finding a single label for such diverse practices is difficult in practice, and perhaps overly restrictive and reifying in principle as well.

Second, we could simply recognize all these practices as Design. An advantage of this is to acknowledge that the processes, materials, outcomes, traditions and ways of thinking and acting associated with “critical design” have a firm basis in the traditions of Design practice. In addition, insisting that these practices are Design is a powerful way to infiltrate, inform, and converse with other Design practices, as it denies the temptation to pigeonhole them as “other” or to label these approaches as “special”.

Third, and the option we lean towards, is simultaneously to recognize these emerging approaches and practices as Design, while developing a more varied, evolving, and provisional set of labels to describe, develop and advocate for them—including “adversarial,”[15] “reflective,”[48] “ludic,”[28] “speculative,”[18] “design fiction,”[9] and, yes, “critical”. This permits a more nuanced discussion of the many approaches to design being explored and maps more closely to Design discourses outside of CHI.

CRITICISM: EXPANDING & REFINING PRACTICE IN HCI

Clearly, endorsing a broad range of perspectives that have affinities with “critical design” and the term “critical” requires articulating differences between such perspectives, especially the specific ways in which “criticality” is and is not at work, and the variety of strategies used. This is, at core, a question of design criticism.

Interest in design criticism in HCI, including ours, arises in part because of concerns that knowledge of critical design

or other forms of expanded design practice is out of reach for HCI researchers and practitioners from non-Design backgrounds. One model for increasing the reach of expanded design practice in HCI is to develop recognizably HCI variants of Design methods. In such a model a job of design criticism is to translate Design concepts and methods into a familiar HCI vernacular. While this can be useful and effective, such a model keeps the traffic between Design and HCI narrow. It places design critics or other translators as bottlenecks between the disciplines and leaves 'untranslated' Design practices out of reach. Instead, we believe the pedagogical goal of design criticism should be to promote literacy of design texts and objects that will let people move from reading 'digested' versions to being able to access the originals, incorporate them into their own work, and thereby develop their own authorial voice. Further, we hope and expect that design criticism could be an aid to experienced designers, for example by providing inspiration for new forms of design. In addition, we will argue that expanded design practices shift the objects and practices of design to a degree that requires adaptation of design criticism to adequately analyze it. In this section, then, we lay out how to approach design criticism to better meet the practices, knowledge, and terms arising in the expanded modes of design practice described previously.

A design criticism that is provisional, open, incomplete, and even a bit messy (like design!)

If design criticism within HCI is to contribute to or help draw practitioners into Design practices, then we believe its philosophical orientations must better align with those of Design. In particular, design criticism would benefit from theoretical foundations that tend toward being provisional, generative, and ontologically agnostic. Yet the stance most prevalent in the current design criticism discourse in HCI appears to be metacritical. This stance tends to see 'criticality' as an attribute that can be embodied (or not) in objects and aims to clarify what designs are ontologically. Put far too simply, the metacritical approach seeks to tidy things up into orderly categories. But there are epistemological traditions within the history of critical thought that question the value and politics of establishing ontological certainty. These traditions provide alternative modes of critique and knowledge production perhaps better matched to design practice, for example by being less concerned with "stating what is" than with "informing what could be." They tend to embrace provisionality, incompleteness, and even disorder.

One such orientation is schizoanalysis, which eschews reducing things to generalizations and instead focuses attention on tracing connections and transformations [17]. Schizoanalysis takes a tactical approach to knowledge: "A concept is a brick. It can be used to build the courthouse of reason. Or it can be thrown through the window." [38, p. xii]. One way we could draw on this sensibility in design criticism is to orient less towards taxonomies and classification schemes and more to tracing the rhizomatic

lines that lead from one design project to another. A concept can be used to rationalize why one design is better than another. Or it can be used to design something else.

Another such theory is the feminist concept of performativity [12], which, simply put, recognizes that knowledge practices not only uncover but simultaneously construct the things they study. Performativity would lead us to ask not 'is a design critical?' or even 'how is a design critical?' but 'how does a design become 'critical?'' and 'how do the questions we ask in design and design criticism shape and alter what 'critical' can be?' It recognizes and seeks to do justice to the way in which 'observers' (critics) become entangled with 'the observed' (design). Feminist scholars have used performativity for rethinking science [3]; [34] use related ideas to rethink HCI design.

Not "great works" but dynamic, provisional exemplars

Another area in which a move to complexification could be beneficial is in the question of which design projects we should take as standard reference points for embodying criticality in design. Ferri et al [24] suggest establishing a canon of critical designs to improve design literacy in the HCI community. They articulate goals and benefits of a canon including setting normative values around critical design and elevating a set of "exemplars" to guide discourse and pedagogy and to shape future design practices. Yet as they also remind us, canons often become the subject of intense debate over what they include and exclude and have been criticized for reproducing "aristocratic" power relations. To these concerns we add the tendency for canons to act as a sort of thoughtless 'shorthand' for a field's self-conception that undermines vigorous, dynamic discourse and cross-fertilization.

We suggest a more provisional and vibrant approach to design scholarship and criticism, in which sets of exemplars are marshaled contextually in support of particular analytic or interpretive frames on design ([29] is a well-known example in HCI). The meaning and relevance of these frames, and the examples they contain, is subject to continual reassessment and reinterpretation by communities of interest. These are not canons in a classic sense; they are dynamic and what Ferri et al might term implicit canons [24]. This is clearly a much more provisional approach to design scholarship that leaves questions of definition open to ongoing interpretation and contestation. This is intentional. It recognizes and aims to communicate the voice of the critic in shaping the "canon." Through its construction it communicates to the reader not that there is one "right way" to do or think about design but rather many stances one can take on design and how to perform it.

Reveal what designs are and how they operate

Particularly in the case of the expanded design practices we are talking about here, questions arise as to the definition of "the work," "the design," or "the thing" that designers produce and whether it should be limited to a material object, or extended to include how that design is being

positioned. One example of such positioning is the 'paratext,' or materials produced by the designers, curators, or other stakeholders arguing for the intended interpretation of the design. Particularly for designs that are intended primarily as forms of knowledge production or even critical interventions, it can be difficult to understand how the design is intended strategically *as* critical, and to judge its success at that intention, without analyzing the discourse against and within which the design is placed and how it is intended to intervene. Particularly for expanded design practices that embody an authorial voice, then, the positionality and paratext of the design is an explicit part of the design work that should be examined and critiqued.

Sometimes, designers aim through such paratexts to argue for a meaning of the designed object as "expositor" or "positioner." This is by far the most common approach at CHI, for example in design case studies. In certain cases, most of the design work is arguably not even 'in' the object itself but in the way the design is positioned. In such cases, paratexts can be seen as part of a tactical intervention within a discourse. For example, news reports in 1993 reported concerned parents buying talking GI Joe dolls and Teen Talk Barbies who had had their voice boxes switched, so that Teen Talk Barbie might say "vengeance is mine" [25]. This was reported as the action of the Barbie Liberation Organization, which was said to have placed 300-500 such dolls in stores for purchase. Yet it is unknown whether the voice boxes were ever switched; the "concerned parents" phoning journalists may have been the artists themselves. While it is tempting to treat either the representational image of a modified Barbie doll as "the design" or "the thing", it is arguably the paratext surrounding it and its tactical effects to manipulate the news media into reporting a particular interpretation that is more interesting, especially as it relates to criticality. Indeed, this example shows how ambiguity concerning where a design ends and paratext begins can be part of both the design intention and outcome. In such cases, the job of criticism may not be to resolve such ambiguity but to appreciate what a design might be and what it is doing, to analyze the degree and modes of success of its tactics, and to open this all up for reflection and discussion.

Develop a participatory design criticism

A classic model of criticism splits the critic and the author into separate discursive universes: authors are responsible for creating texts, while critics are responsible for judging their social and cultural meanings. Authors may object to being mischaracterized, yet have little recourse. In contrast, a design criticism in HCI must be, and already is, participatory. By this we mean critics, designers and other stakeholders are necessarily in dialogue in adjudicating how to understand design. This is for several reasons.

First, designers are always already critically reading and arguing for the meaning of design. Partially this is through the production of paratexts, as described earlier; when design artifacts are presented and positioned within art

galleries or research publications, these presentations make both explicit and implicit claims about the meanings of the works. In HCI, for example, we have examples of two hybrid roles: the designer-as-critic, i.e. the designer who explains the meaning and implications of their own work [e.g. 28] and the critic-as-designer, who writes about (others') design, often with a curatorial approach, from the perspective of a designer [e.g. 15]. If we take a critic as a arguing for an interpretation, then designers have already become critics (though not necessarily good ones, particularly not by the standards of criticism originating within the humanities) as soon as they take a stance on the cultural meaning of their or other designers' work [e.g., 43].

For design practices that leverage authorial viewpoints, we note, this happens even before a paratext is produced, since the designed objects themselves act, in a sense, as statements. As [6] point out, design practices that take on a critical intention can be thought of as critique by other (non-textual) means. Research through design discourse describes the idea of design thinking "embodied in" an artifact [26, p. 5], or design knowledge residing "within" an artifact [14, p. 6; 56, p. 310]. In this sense, a design expresses a critical understanding in a manner somewhat analogous to a critical text, even though it is not expressed in the forms, language, or logic of traditional criticism.

But even all of this aside, it's crucial to note that in HCI we are in a somewhat unique interdisciplinary situation. While literary critics may get together without authors, art historians without artists, and anthropologists without subjects, in HCI we would structurally hope and expect that critics and designers will be in the same room speaking to each other. This suggests that the model of critics and designers in separate interpretive universes will in any case fail in HCI. Thus a design criticism that is to aid in bridging between HCI and expanded design practices needs to be generally accountable to and enrolled in both discourses.

So does this make designers authorities on their own work, and not allow critics to disagree? No. Critics should and must generate their own interpretations. But what it does suggest is that the issue of the designer's intention needs to be handled carefully. While in traditional literary criticism it is acceptable, indeed perhaps preferable, to bracket what an author intended a work to mean or do, in a participatory or dialogic model of design criticism one can disagree with but not outright ignore an authorial intention. In this model, we need to recognize that designers have a stake in how their designs are placed, and to the extent that a reading disagrees with a designer's explicit placement, the critic has at least as much responsibility to their reading's effects as anthropologists have with their subjects.

CONCLUSION: FOSTER FLUID TRANSITIONS BETWEEN DESIGN, DESIGN STUDIES, AND HCI

We have articulated two ways to broaden the communication between Design and HCI to support analysis and innovation of what has been loosely collected

under the term ‘critical design.’ One is to **articulate the broad range of design practices that convey an authorial voice with critical dimensions** as an alternative to (but not a replacement of) user-centered design. The second is to **shape a variation of design criticism that better meets Design ways of speaking and knowing** as an alternative to (but not a replacement of) design criticism oriented to ontology and taxonomy.

We are deeply aware of the need to make emergent design practices accessible to a CHI audience. Doing away with a single umbrella term leaves the intellectual waters quite muddled, and while we believe that this is ultimately a good thing, it is also desirable that people who are excited by new design work should be able to approach it without significant formal design training. One approach is to use CHI’s tutorial track to offer courses in emergent design practices for those with a passing interest in such matters. Another approach is to create broader literacy in Design by continuing to produce and acknowledge works that articulate design thinking, processes and practices for HCI [e.g., 34]. A third route is to continue to import literature and other knowledge from Design outside of HCI.

These issues bring our attention back to the relationships between the communities and discourses of HCI and those of Design that exist outside of (and predate) HCI. We believe it is a problem when conversations about design within HCI become illegible to designers outside the HCI community. To be clear, we do not expect that CHI will or even should appeal to all design practitioners. However, a growing number of academic designers, design researchers and practicing designers/artists are active in other scholarly and intellectually rigorous communities. They have much to offer and to gain from deeper involvement with HCI. To the extent we seek to develop a “culture of design” in HCI, the ways we talk about design should be familiar to, connect with, and draw on these more general design scholars.

Despite its longstanding interest in technical pursuits and the behavioral sciences, the disciplines of Design are solidly grounded in the Arts and Humanities. As such, design brings a distinct set of concerns to bear on the specification, production, use and understanding of interactive products. These include concerns with aesthetics and a consideration of technology products as cultural artifacts; an interest in situated practices and immediate effects that are not always easily generalized; and a willingness to champion authorial intent that might at times ignore or even thwart audience’s (or users’) desires and expectations. Design also employs a plurality of ways of expressing its concerns, including narrative styles that may prefer thematics to categories, and non-textual or more visual and tangible formats.

Accommodating design within CHI is not trivial. The ways designers produce and disseminate knowledge are often different from, and perhaps confounding to, engineers and behavioral scientists, as well as social scientists and

humanities scholars. Embracing design practice and discourse may require us to rethink, for example, how we conduct peer review, select and prioritize publication formats, and set conference registration fees. The good news is that the CHI community appears ready and willing to take some of these challenges on. We are heartened by recent experiments with pictorial publication formats, annotated portfolios [11], and the emergence of “research through design” [27,44,56]. We believe these efforts will be strengthened with the development of a richer design discourse within CHI to which we hope these considerations contribute.

ACKNOWLEDGMENTS

We thank the reviewers for their instructive comments. Support provided by Intel STC for Social Computing, NSF #1217685, NSF #1451465, and ERC #226528.

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