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Re-establishing the Center in Human-Centered Design: From Opportunity to Significance in Human Life and Living

Ian Hargraves and Nassim Jafarinaimi

Long traditions of care have grappled with an enduring problem: that the work of attending to human life and living often exceeds the practitioner's capacity to treat. In healthcare, divinity, and education, commitments to human life and living go beyond doing what can be done—for the human being that is served is held as more significant than the limited capacities of the practitioner.[i] This reality of care challenges today's Human-Centered Design (HCD). It is partly a challenge because HCD is increasingly being asked to participate in healthcare projects, but the challenge is principally rooted in how Human-Centered Design conceives of, and orients, itself.

The rise of Human-Centered Design beginning in the 1980s and continuing to this day signals a welcome turn away from an artifact-centered focus and emphasis on the formal qualities of products towards pragmatic and rhetorical considerations in design. Today, HCD refers to a range of practices and orientations towards human beings, a range apparent in a constellation of broadly human-centered design approaches such as user-centered design, people-centered design, experience design, participatory design, and community design, to name a few. Without doubt, this diversity reflects a healthy and dignified plurality in design. Yet, if we look closely, we see a uniformity in the constellation of Human-Centered Designs that is troubling. The uniformity that we have in mind is the tendency of HCD to

understand itself as methods that advance design practice as opposed to principles— ideas and values that ground design in human life and living. This tendency reflects a separation of the important relationships between knowledge of why we design and the practices of how we design. It is a sign of this separation that contemporary HCD has shifted heavily towards a capacity to center on humans to serve the purposes of design, and away from human life as that which centers design. In so doing, the governing concern of design is what design can do with, for, and to human beings i.e.; *opportunity*.

This paper is a preliminary to a larger discussion of care in design—a space where attending to human life exceeds the capacity to treat. Our focus here is on making visible the forgetting of the human in HCD and the centrality of that forgetting to design practices that center on humans in order to discover opportunity. We write as design educators concerned with bringing students not only into the burgeoning capabilities of contemporary design, but also into participation with the full human significance of design.

A Practice For Centering On Humans

As a simple phrase 'Human-Centered Design' has two reasonable interpretations. It may be read as an expression of method—that design proceeds by centering on humans; or, as an expression of principle—that the human in a full sense is the warrant, orienting and centering the creative and productive capabilities of design. These two interpretations are not exclusive of one another, indeed we believe that a

productive dialectic between the two should be explored in design education and practice. Today, however, the balance is tipped heavily in favour of understanding HCD as a set of practices by which designers engage people. With this understanding, the reasons that we give for and the questions that we ask of HCD are commonly reasons and questions of method.

When HCD is conceived of as a capacity to center on and engage with human beings, we tend to explain the value of HCD as something that originates in the methods of HCD as a practice, rather than as arising from, or grounded in, human life. The following is an excerpt from IDEO's Human-Centered Design workbook.[ii]

WHY DO HUMAN CENTERED DESIGN?

Because it can help your organization connect better with the people you serve. It can transform data into actionable ideas. It can help you to see new opportunities. It can help to increase the speed and effectiveness of creating new solutions.

Figure 1. IDEO's Response to Why Do Human-Centered Design?

In this passage, it is striking that the value and reason for HCD—the answer to the question *Why Do Human-Centered Design?*—is not in located in the possibilities, actualities, and values of human life and living. Rather, the reasons for HCD are firmly located in the benefits that follow from the methodological capabilities of HCD. It is also striking how commonsensical this explanation of *Why Do Human-*

Centered Design? appears to be. In the world of practice and in the premises of design education this answering emerges repeatedly and appears on the face of it unproblematic.

There are of course explanations for why designers rehearse variations of IDEO's reasons for doing HCD. Not least among them is that the case must often be made within a business context for the benefits of HCD. In making these arguments we should recognize that what is being advanced under the name of HCD is a set of methods and techniques that allow for better connection, data transformation, new opportunities and increased speed and effectiveness. These methods describe capabilities of human-centered designers to center on and engage with people in order to discover new opportunities for design.[iii] Such explanations and accompanying practices reveal an HCD that is not centered by what is and may be human in life and living, but rather that is oriented by the search for opportunity.

By *opportunity* we mean humanly-identified places where change is possible, along with conceptions of what that change is. Opportunity speaks to those places where human power can be brought to bear to make a difference in the world. As such, opportunity is an important, and perhaps foundational, issue in design. Hence, it is an often-used word in the language of today's design both in education and in practice. In the grammar of design, opportunity serves the role of reason and goal in descriptions of design processes. It is common for example, for HCD projects to take the following form:

i. Use of Human-Centered Methods to discover and interact with an unfamiliar audience and situation.

ii. Presentation of exploratory research leading towards a project framing and an initial opportunity space. Presentation of needs (as seen through HCD) as opportunities.

iii. Concept generation with or without the participation of the audience. Concepts being articulations of identified opportunities.

iv. The selection of one opportunity for further development.

v. The presentation of the refined concept to highlight what can be achieved through this opportunity.

As this brief outline suggests, the driving orientation in HCD as it is commonly taught to young designers is the identification and articulation of an opportunity. We teach students to identify and develop something that can be done. HCD is thus conceived of as a methodological toolkit, providing the means by which opportunity is uncovered, expressed, and justified in interaction with research participants. This is not to suggest that HCD is non-critical or non-reflective. It usually is critical and reflective, with the depth of reflection dependent on project timelines. Reflective work however is itself oriented towards what can be done. Common questions in reflection include: Is this the best opportunity to be pursued—what else could be done?; Can this opportunity be more clearly communicated?; Is the opportunity as it is configured suited to the identified needs of the intended audience?; Is the opportunity achievable through available technologies?; Who benefits from the opportunity and how can it be extended to benefit others? These are all useful questions; particularly useful in honing the expression of an opportunity. Some of these questions may lead to strong critical conversations in

which ethical and political concerns surface. These conversations too advance in

controversies of opportunity where the governing orientation remains what can and

should be done. Controversy arises when we question: Who determines what

should be done?; Whose power is advanced and whose power is diminished by the

opportunity?; Who has access to the opportunity?; Who or what controls access to

the benefits of the opportunity?; Ethically, should we act on the opportunity?; How

would we ethically advance the opportunity? These are all very worthy and

worthwhile conversations that are important in the experience of young designers.

They are however, conversations that locate the significance of HCD and human life

in what can be done.[iv] When opportunity stands at the center of design, we are

oriented towards people on the basis of what we can do with, for, and to them.

Centering on opportunity may diminish our grasp of the significance and substance

of human -life in what we design. To help make the orientation towards opportunity

and its costs visible let's consider a particularly transparent instance.

In October 2009, the business magazine *Fast Company* and the international design

consultancy *frog design* produced a joint report entitled: *The Future of Healthcare is*

Social.[v] The editors' introduction to the report notes:

> In this feature article, frog design uses its people-centered design
> discipline to show how elegant health and life science technology
> solutions will one day become a natural part of our behavior and lifestyle.
> What you see here is the result of frog's ongoing collaboration with
> health-care providers, insurers, employers, consumers, governments, and
> technology companies.[vi]

In the context of this report 'Healthcare is Social' is an opportunity space within which designers identify specific opportunities that they present as design scenarios. Were this presentation proceeding with the human as that which centers design, the social would play a fundamentally different role from that which we shall see it playing— the social would function as an essential, plural, and valued part of human-life and living. The report would be an exploration of how, through design we might substantively orient change in that value and valuing. Instead, the document begins by introducing Susan, a persona and device of the report. In the opening paragraph we are told:

> Susan's life is full. That's a nice way of saying that she is frenetically, overwhelmingly busy--too busy, she sometimes jokes, to be healthy. She has a husband and two small children, a full-time job, and aging parents who rely on her for support. She also has two younger brothers and a community of friends both near and far that she keeps in touch with mostly online.*vii*

In this opening paragraph, the fullness of Susan's life has been effectively framed as busy-ness, and her sociality reduced to her immediate family and to those that she communicates with online. Three paragraphs later the report continues:

> Fortunately, we are at an inflection point in history both from a policy and technological perspective. Advances in wirelessly connected devices and social networking platforms will make the job of a "family health manager" much easier, more meaningful, and more effective.*viii*

In measure Susan is cast as a 'family health manager' a framing by which opportunities become apparent to advance, through design, the capabilities of wirelessly connected devices and social networking platforms. Indeed, the report

follows the introduction of Susan with a proposition that;

Networked devices + connected people=healthier communities.[ix]

From this proposition the authors/designers present six distinct opportunity areas (each a sub-section of the report):[x]

- Wireless devices gather health data for us
- Reaping emotional and physical benefits from social interactivity
- Broadening the healthcare team and improving the dynamics
- Making sense of numbers—learning over time
- Finding meaning and strength—learning via large groups
- Monitoring *how* we are doing may actually change *what* we are doing (emphasis in original)

This relentless progression towards an opportunity to do something drives the frog/Fast Company report as it unfolds in each of the above subsections. Each opportunity area is further articulated as an opportunity in a detailed visual and textual account. For example, in the sub-section headed 'Reaping emotional and physical benefits from social interactivity,' the opportunity is presented in the form of a networked Scrabble game augmented by sensors and connected to the TV to enable video calls and group play:

> Susan's father is forgetting things, the kind of forgetting that Susan can no longer chalk up to "just being dad." Susan's parents still live in the house where she grew up, but many of their friends have moved away. Susan herself has moved a few hours away, so it's hard for her to visit her parents often. She learned that initial memory loss can be slowed through mental stimulation, so she began scheduling a weekly "virtual Scrabble" date with her dad to help keep his mind challenged and acute. She bought her dad a physical Scrabble set with wireless sensors and low-power e-ink displays, and they use the same connected TV that enables video calls. It's almost as if they are playing in the same room. The games

make her dad laugh, and he can see her kids as they jump around and say hello. After the game, Susan catches up with him and her mom about how they are feeling and what they are doing. Sometimes, she learns more from what she sees in their appearance or expressions than from what they say.[xi]
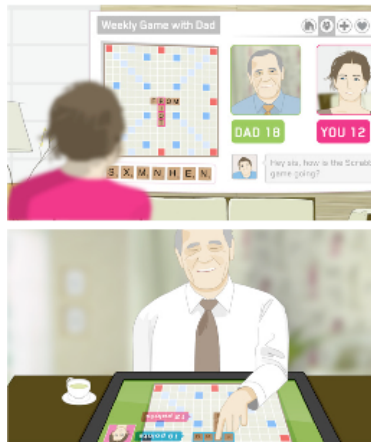

Figure 2. Scrabble game connected to networking devices to enable social play.

Not unlike the presentation of Susan's social life, the passage above is also an over-simplification of how networking technologies might better the situation that Susan finds herself in. We may consider that simplification is a problem of presentation, that more context should be provided in the rendering of Susan both as a persona and in her engagement with concepts. This is a reasonable argument, and the renderings presented in the report may be more convincing with more detail of Susan and her life. Adding more detail is not by itself a full correction for what is troubling in this scenario is not its brevity, but its orientation toward what can be done through design to connect Susan and her father using digital and networking technologies. The scenario is troubling because while the renderings presented through design of Susan, family health management, and social networks are

arguably true to the current and future capacities of technology, they are not true to life. They are not true to the life and living of a 39 year old working woman and mother of two small children whose parents are aging in ways that are beyond her control. Her father's early onset Alzheimer's is developed as an opportunity for design to act rather than something that humanly matters in the life of Susan.[xii] Susan may be 'frenetically, overwhelmingly busy' but the fullness of her life and living is only attended to through the frame of what design and technology together can do. In other words, it is the attention on the power of design and technology that selects from the fullness of Susan's life and organizes it in such a way that design can act upon it.

The report, in its abbreviated detail, reveals the strategy of much contemporary design—a strategy of highlighting opportunities—spaces where design has the capacity to intervene. We present this example because it is a clear but not unfamiliar case in which the orientation towards opportunity is readily apparent. We do not intend to be broadly critical of frog design; much of their work is as good as that found anywhere in contemporary design. What we do wish to highlight is the pervasive nature of the orientation towards opportunity in HCD and press for a critical examination of the ethics of educating young designers to center on identifying design opportunities.

Principles Located in Method

The human as an idea and opportunity as something that is sought, need not be fundamentally opposed or separated. Indeed, the two are not fully disconnected

from one another. Further, many human-centered designers and educators have deep desires to address the fullness of human-life, with the explosion of methods and techniques in recent times in part an expression of this desire. Our concern is that the language of opportunity and the orientation towards method and opportunity in project work challenges the full flourishing of HCD.

At the beginning of this paper we suggested that 'Human-Centered Design' as a simple phrase has two reasonable interpretations. One interpretation emphasizes the capacity of designers to center on humans to advance the processes and products of design. The other is a statement of principle—that why we design, and why design itself matters, is because we hold human-life and living as significant— significant enough to steady and orient a practice. What we believe that we are lacking at this time are ways of discussing HCD as a principle of and in design. We simply are not very good at talking about the principles through which we hold human life and living as significant. We quietly accept that people are important, and quickly move on to discussions of how to do things with, for and to people. When principles do enter the conversation they tend to be reduced to expressions of what design can do, rather than full-bodied encounters with what it is to hold people as mattering.

A case that illustrates the challenged place of principles in HCD is the Charmr project—a widely publicized project undertaken by the consultancy Adaptive Path. In April of 2007, Amy Tenderich, a diabetic who authors a blog devoted to issues arising in living with diabetes wrote an open letter to the late Steve Jobs, the CEO of

Apple inviting Apple to turn their considerable design expertise towards the design of diabetic equipment. The following is an excerpt from that letter:

> We are, of course, deeply grateful to the medical device industry for keeping us alive. Where would we be without them? But while they're still struggling with shrinking complex technologies down to a scale where we can attach them, hard-wired, to our bodies, design kinda becomes an afterthought. This is where the world needs your help, Steve. We're people first and patients second. We're children, we're adults, we're elderly. We're women, we're men. We're athletes, we're lovers. If insulin pumps or continuous monitors had the form of an iPod Nano, people wouldn't have to wonder why we wear our "pagers" to our own weddings, or puzzle over that strange bulge under our clothes. If these devices wouldn't start suddenly and incessantly beeping, strangers wouldn't lecture us to turn off our "cell phones" at the movie theater. In short, medical device manufacturers are stuck in a bygone era; they continue to design these products in an engineering-driven, physician-centered bubble. They have not yet grasped the concept that **medical devices are also life devices**, and therefore need to **feel good and look good** for the patients using them 24/7, in addition to keeping us alive.[xiii] (emphasis in original)

In response Adaptive Path sponsored an internal project.[xiv] Designers began by using HCD methods to familiarize themselves with type 1 diabetes and those who live with the condition. They iterated a range of concepts in interaction with that audience and concluded their project with an expression of the Charmr concept—a wearable insulin pump that blends into the skin and a remote monitor/controller that can be worn as a necklace. The concept led to patents and was met with adulation by Tenderich and others in the diabetes community as an expression of what diabetes technology could be.

There are ironies inherent to the Charmr project that make a human-oriented criticism challenging. Tenderich in her original letter to Steve Jobs is drawing on

enduring critiques of contemporary medicine—a tendency to treat patients as a disease and not as a person. The 'engineering-driven, physician-centered bubble' to which she refers reflects the human costs of framing the person served within professional training and competencies. Design is looked to as a corrective. Adaptive Path designers and researchers begin by using HCD methods—interviews, and observations.[xv] As an outcome of this process the design group expressed six design principles that would guide the project.[xvi]

> **Wear it during sex.** Make the product elegant, discreet, and comfortable.
>
> **Make better use of data.** Have the product use the data that is generated (blood glucose levels, amount of insulin dosed, trends) in smarter ways.
>
> **Easy to learn and teach/No numbers.** A broad cross-section of diabetics will use this product, so it cannot be overly complicated, nor difficult to teach. And while numbers are important, we didn't want to solely rely on those for indicating status and trending.
>
> **Less stuff.** Diabetics have to carry around a lot of stuff. We wanted to be sure that whatever we created wasn't just one more thing to carry around.
>
> **Keep diabetics in control.** The people we spoke to weren't interested in automatic pumps for the most part. They wanted to retain control of their insulin dosing.
>
> **Keep diabetics motivated.** Diabetes is a difficult disease to have. Diabetics, in the words of someone we talked to, "never get a day off," so keeping motivated is a challenge. We wanted our product to help diabetics set goals and be so easy to use it helped keep them on track.

Each of these principles expresses an opportunity to steer design in a seemingly worthwhile direction. Nonetheless and not unlike the frog/Fast Company scenarios, it is the power of design and technology that discerns selectively from human experience and organizes it with an eye toward opportunity. The design principle, 'Wear it during sex', for example, reflects the capacity of designers to design forms that are 'elegant, discreet, and comfortable.'

Reflecting on Adaptive Path's design principles we may ask how they orient us in the fullness of human life? This question becomes more pronounced when we consider what we would understand of human beings from these principles. It would seem that humans, and specifically diabetic humans are sexual, seek comfort, vary in their capacity to learn, are burdened with stuff, seek control, and need help with motivation. This may be true, but it does not seem fully true to the richness of human life and living. What it appears more fully true of is what design can do and where opportunity for design lies.

People Matter—The Condition of Design

IDEO's reasons for 'Why do Human-Centered Design?', The frog/Fast Company report, and the Charmr project are each, in some respect, a compelling view on what can be achieved when designers turn away from the artifact before them and towards the people whom the product ultimately serves. We take this as positive but incomplete. Ultimately what these instances most clearly demonstrate is the capacity of designers to turn towards and center their attention on people to advance opportunity, rather than what it is to design centered in an understanding of people mattering—for people matter in ways that go well beyond our capacities. These instances compel us to question HCD's dominant orientation.

In medicine, an analogous capability-focused tendency is familiarly critiqued as the reduction of a person to a diseased body—with disease and bodies being the limited concern of physicians empowered with medical skill and training. Design, unlike

medicine, has no one subject matter[xvii] akin to the bio-medical body and the special

materials of particular medical sub-disciplines (e.g. Cardiology). Indeterminacy of

material in design masks the tendency to reduce humans to what design can do.

This masking, however, is not simply passive. Finding or bringing forward

perspectives by which to surface new materials, particularly materials of

experience, is a core capacity of HCD's problem and opportunity finding. That HCD

is, at least in part, a capacity to find problems in experience that design has the

power to materially address should cause us to question the proportion by which

we surface materials according to what we as designers can do, and the proportion

by which the human beyond the power of design is attended to.

This is not to say that people mattering doesn't guide HCD practice, not at all. That

people matter is quietly accepted and given expression in HCD concepts. For

example, when we show students Susan's and her father's Scrabble game they

recognize a faint spark of something significant in the rendering. There is clearly

something in the opportunity that humanly matters, but what matters is more than

what design opportunities encompass. Principles located in method drive us

towards expressions of what can be done. Underappreciated principles of human

significance turn our attention towards what humanly matters in the situation.[xviii]

The principles of HCD have been in question since its inception. Early concerns with

the focus on 'the user' are symptomatic of disquiet as to the center of HCD.[xix] The

language of the field has traversed from user, to people, stakeholders, and

participants. Yet, the term user remains central and its alternative forms are often

unconvincing in use. This lingering issue is a reflection of a principle of opportunity

working to determine who people are and can be in design projects. Here the

discourse of care is helpful. Arthur Frank writes provocatively of care saying, '*By this*

overused word care I mean an occasion when people discover what each can be in

relationship with the other.'[xx] We find it ironic and troubling that a focus on

opportunity and its accompanying novelties oftentimes enforces conventionalities

in understanding who people and products can be in relationship with each other.

This perhaps is one of the most disturbing aspects of the rendering of Susan and her

father—the focus on opportunity unduly limits who Susan, her father, and design

are and can be with each other. In care, the orientation shifts toward what humanly

matters in the occasion, with people discovering through significant invention who

they can be in that orientation.

Richard Buchanan wrote a decade ago on the principles of HCD and what he then

called *a major tenet of new design thinking: the central place of human beings in our*

work. He continues:

> In the language of our field, we call this "human-centered design."
> Unfortunately, we often forget the full force and meaning of the phrase-
> and the first principle which it expresses. This happens, for example,
> when we reduce our considerations of human-centered design to matters
> of sheer usability and when we speak merely of "user-centered design." It
> is true that usability plays an important role in human-centered design,
> but the principles that guide our work are not exhausted when we have
> finished our ergonomic, psychological, sociological and anthropological
> studies of what fits the human body and mind. Human-centered design is
> fundamentally an affirmation of human dignity. It is an ongoing search for
> what can be done to support and strengthen the dignity of human beings
> as they act out their lives in varied social, economic, political, and
> cultural circumstances.[xxi]

Buchanan, in calling our attention to principles in HCD locates the search for opportunity—for what can be done—in the midst of a higher principle of dignity—a principle that is not an endpoint but an ongoing search. Findeli, writing on ethics in design education argues that the purpose of design should not be considered as modernist or technicist outcomes to be reached—*A New World, A New Man, or a A New Cultur*e, rather:

> In the new perspective, however, the purpose of design must be considered as a horizon, as a guiding set of values, and as an axiological landscape to which one always must refer when taking a decision or evaluating a proposition within the design project, and not as an ideal goal to be reached in the more or less near future.[xxii]

The writings of Buchanan and Findeli are useful beginnings for turning the expression of problems in HCD (which has been the purpose of this paper) into places for moving forward. Ideas of ongoing search, horizons, and landscapes do not locate the missing center of HCD in fixed ideals of the human and what is good for human life, nor do they refer to a fixed human nature.[xxiii] Rather, they suggest that people mattering is the condition of design. Design has purpose and cogent power in as much as it participates in the mattering of people.[xxiv]

There is room for opportunity in this endeavour, indeed it is vital, for how people matter changes with time as do the circumstances in which they matter even as human significance remains the constant condition of design. Tenderich's letter exemplifies this. She is, as she says, *deeply grateful to the medical device industry for keeping us alive: Where would we be without them?* She is clear, at the same time, that what matters in living with diabetes goes beyond the achievements of the

medical device industry. She invites design, in the person of Steve Jobs, to extend the

discovery of how the products of design hold people as significant in life—of how

diabetic persons matter. In this light, we recognize that the principles identified by

Adaptive Path are not disconnected from the work of affirming human dignity that

Buchanan speaks of. At the same time, they are but a small window into dignity,

locating it as they do in comfort, control, and the capacities of design.[xxv] The praise

that the Charmr project received from Tenderich and her readers indicates the

importance of this ground. But Tenderich's plea is itself a sign that dignity remains a

horizon in an ongoing search.

This is not to make dignity, or other first principles of design, distant and abstract.

The mattering of people is something that happens right before our eyes if we have

eyes to see it. It is in the spark that students detect in Susan's Scrabble set; it is in the

Charmr project and Tenderich's gratitude. The language of opportunity, however, is

not well tuned to discussing this mattering for it is no simple achievement of

designers. People matter prior to design activities and products. Designers don't

make dignity. Nonetheless, there are plural ways that design participates in

significance as the condition of human life and living. Design and opportunity are

among the means for remembering the constancy of human significance in changing

circumstances. In its current state, the eyes that we teach and practice with are

attuned to, and our renderings express, what design provides as dignity, or what

design provides as care. It is time to foster complementary eyes—eyes that aren't

solely tools for seeing what can be done or provided to fill an absence. The eyes of

which we speak are apertures through which the full and diverse mattering of people may in part be apprehended. This is to see care, or value, or dignity as a fullness, a vast horizon in which people have life and are held in life.[xxvi] Educating individuals with apprehending eyes requires new language, new questions, and new ethics. It requires balancing questions about the conduct of HCD with questions about the grounds of HCD. In so doing our questions may shift from what can or should we do?, to: What are our conceptions of human beings and why they matter? What are we listening for and speaking to in the stories of design? How do design practices and designed products participate in the affirmation of dignity, and human significance? Who can we be for others in the presence of issues that humanly matter?

REFERENCES

i Many of the critiques of technological medicine center on the harm that is done to patients when they are treated through the highly skilled and highly focused capabilities of the physician, rather than as a full person seeking care.

ii IDEO. "Human-Centered Design Toolkit: A Free Innovation Guide for Social Enterprises and NGOS Worldwide," 2009, Available as a downloadable pdf from http://www.ideo.com/work/human-centered-design-toolkit/. Last accessed January 3, 2011,

iii Elizabeth Sanders and her colleagues mapping the current state of design research capture the emphasis on identifying opportunities in the broader landscape of design research and professional practice. In their analysis of design and research led methods, they correctly (yet uncritically) point out that the centering that brings the ''*confusing mess of competing and complementary approaches*'' of design research together is the quest for opportunity—'*to drive, inspire or inform the new product and/or service development process.*' See, Sanders, E, and PJ Stappers. ""Co-Creation and the New Landscapes of Design."" CoDesign Vol. 4, no. 1 (2008): 5–18. Also, Sanders, Elizabeth. ""On Modeling: An Evolving Map of Design Practice and Design Research."" interactions Vol. 15, no. 6 (2008): 13–17.

iv The political and ethical questions asked in the context of the design studio echo broader disciplinary concerns about HCD. Reflective and critical research on HCD tends to focus on the conduct of HCD. For example, some researchers have identified ethical issues regarding designers' interactions with users, selecting and interpreting research, or political dynamics of involving users in the design process (e.g., Schuler, Douglas, and Aki Namioka, eds. *Participatory Design: Principles and Practices*. Hillsdale, NJ, USA: Erlbaum Assoc. Inc, 1993.; Steen, M. "Human-Centered Design as a Fragile Encounter." *Design Issues* Vol. 28, no. 1 (2012): 72-80., Sanders, E, and PJ Stappers. "Co-Creation and the New Landscapes of Design." CoDesign Vol. 4, no. 1 (2008): 5–18) Others have attempted to employ human-centered methods for philanthropic interventions, identifying opportunities for design in non-commercial contexts (e.g., Stairs, D. "Altruism as Design Methodology." *Design Issues* Vol. 21, no. 2 (2005): 3–12.). Design has also been articulated as a mode of increasing societal awareness, enabling understandings of critical socio-technical issues, or motivating political action (e.g., Dunne, Anthony, and Fiona Raby. *Design Noir: The Secret Life of Electronic Objects*. London: Birkhäuser, 2001.; Ratto, Matt. "Critical Making: Conceptual and Material Studies in Technology and Social Life." *The Information Society,* Vol. 27, no. 4, 252-60.; DiSalvo, Carl. "Design and the Construction of Publics." *Design Issues*, Vol. 25, No. 1 (2009): 48–63.) These works, while diverse in their philosophic and methodological foundations, mainly ask: what the manners of design are, what qualifies as good manners of design, and how can these manners be applied to new contexts and for new purposes. In other words, these works are mainly focused on the powers of and capacities of design and making. Yet, the ultimate ends and grounds for design remain largely unchallenged and under-explored (exceptions include, Buchanan, R. "Children of the Moving Present: The Ecology of Culture and the Search for Causes in Design." *Design Issues* Vol. 17, no. 1 (2001): 67–84.; Findeli, A. "Ethics, Aesthetics, and Design*." Design Issues,* Vol. 10, no. 2 (1994): 49–68.; Margolin, Victor. *The Politics of the Artificial: Essays on Design and Design Studies*. Chicago: University of Chicago Press, 2002.) To be sure, the work of design practitioners and scholars who are leading conversations on the conduct of HCD is of high value. How we practice is important, both in terms of what we can learn from engaging and observing people and in terms of how we bring participants inside the work of design practices and products. Nonetheless, these conversations should be balanced with conversations about why we (individually and collectively) design and the relation of design to a broader understanding of human life and wellbeing.

v Killian, Jennifer, and Barbara Pantuso, "The Future of Healthcare Is Social," 2009, Last accessed May, 13, 2011, http://images.fastcompany.com/health-care/FC_FutureofHealthcare.pdf

vi Ibid.

vii Ibid.

viii Ibid.

ix Ibid.

x Ibid.

xi Ibid.

xii As a counter-example consider the following short excerpt of a longer chapter by the anthropologist Daniel Miller. In the context of a chapter devoted to describing Jenny's life in her London home, Miller briefly, but with deeper engagement and understanding than the frog / Fast Company concept, discusses the impact of Alzheimer's on Jenny's life: *Jenny can still convey its horror, when she tells us: 'The boys [Jenny's sons] used to come in and see him [Jenny's husband] every day and he took it the other way. He says "Who are all these big men coming in everyday eating our food? Who are they? What are they doing? Where do you get these men from?" I couldn't stand it.' He would be up at night raving in the house, or getting lost out on the street, after insisting that he had to get out. Then there would be a summoning of the family to scour the streets for him and to find him like some dog, hanging onto a lamp post. At least death has a certain indiscriminate nature and inevitability to it. But having to look at, and care for, her husband. There was such an injustice, such a gulf between what he had done and what was now being done to him.* Miller, Daniel. *The Comfort of Things*. Cambridge, UK ; Malden, MA: Polity, 2008. p 215

xiii Tenderich, Amy. "An Open Letter to Steve Jobs." http://www.diabetesmine.com/2007/04/an_open_letter_.html. Last accessed January 31, 2012

xiv Adaptive Path. "Charmr". http://www.adaptivepath.com/work/case-studies/charmr. Last accessed January 31, 2012

xv http://adaptivepath.net/blog/category/charmr-project/. Last accessed March 29, 2012

xvi http://www.adaptivepath.com/ideas/charmr-creating-concepts. Last accessed March 29, 2012

xvii Buchanan, Richard. "Wicked Problems in Design Thinking." *Design Issues* 8, no. 2 (1992): 5–21.

xviii We follow Dewey in his *Theory of Inquiry* that what is significant '*is indeterminate with respect to its issue*' in design situations. We hold, however, that something humanly mattering in the situation is the warrant for design and the grounds for determining the issue for design. See Dewey, John. *Logic, the Theory of Inquiry*. New York,: H. Holt and company, 1938.

xix See, for example, Hanington, Bruce M. "Relevant and Rigorous: Human-Centered Research and Design Education." *Design Issues*, Vol. 26, no. 3: 18–26.

xx Frank, Arthur W. *The Renewal of Generosity : Illness, Medicine, and How to Live*. Chicago: University of Chicago Press, 2004.

xxi Buchanan, Richard. "Human Dignity and Human Rights: Thoughts on the Principles of Human-Centered Design." *Design Issues*, Vol. 17, no. 3 (2001): 35–39.

xxii Findeli, A. "Rethinking Design Education for the 21st Century: Theoretical, Methodological, and Ethical Discussion." *Design Issues,* Vol. 17, no. 1 (2001): 5–17.

xxiii We are well aware of the dangers that unitary conceptions of human value pose. See for example in the care literature, Reich, WT. "The Care-Based Ethic of Nazi Medicine and the Moral Importance of What We Care About*." American Journal of Bioethics,* Vol. 1, no. 1 (2001): 64–74.

xxiv We would go further and suggest that people matter because they exist in conditions of mattering in which non-humans and the biosphere also matter.

xxv George Nelson provocatively argued that the control afforded by design artifacts is a small matter in understanding the significance of design. See, Nelson, George. "Design as Communication" in *Problems of Design*. New York: Whitney Publications, 1957. 2–7.

xxvi One translation of the Graeco-Roman *Myth of Care* holds that the role of care is to *'have and hold it [the human] as long it lives.'* See, Reich, Warren T. "Care." In *Encyclopedia of Bioethics*, edited by Warren T. Reich. 319–31. New York London: Macmillan Publishing Co: Simon & Schuster Macmillan; Prentice Hall International, 1995. Available online at: http://care.georgetown.edu/Classic%20Article.html