

# Blended, Not Bossy: Ethics Roles, Responsibilities and Expertise in Design

1<sup>st</sup> Katie Shilton  
College of Information Studies  
University of Maryland  
College Park, MD 20471, USA  
kshilton@umd.edu

2<sup>nd</sup> Sara Anderson  
College of Information Studies  
University of Maryland  
College Park, MD 20471, USA  
kshilton@umd.edu

**Abstract**—What are the best ways for design teams attend to issues of power, inequity, trust and other ethical concerns as they arise in design? Literature on value-sensitive design (VSD) and technology ethics has advocated for a range of design methods that propose different roles and responsibility for ethics during technology development. This paper explores four provocations that imagine different roles and responsibilities for moral and ethical reasoning on design teams: participatory design (in which diverse stakeholders may represent their own values in the design process), values advocates (introducing experts to lead values discussions or conduct ethics interventions), embedding values discussions within design and encouraging ‘moral exemplars’ within design. Each of these posits different logistical arrangements as well as different levels of expertise in ethical practice. The paper uses examples from the VSD and computer ethics literatures as well as the authors’ ethnographic work to explore the advantages, challenges and consequences of each approach

**Index Terms**—participatory design; HCI theory, concepts, and models; ethnographic studies; programming teams; technology ethics

## I. INTRODUCTION

What does it mean for design research to do right by participants, researchers and the world? This article explores a thorny issue in values-oriented design research: what roles, responsibilities and kinds of expertise are necessary for tending to issues of power, inequity, trust and other ethical concerns as they arise in design?

## II. BACKGROUND

### A. Provocation 1: participatory design as values-sensitive design

Techniques to privilege the values of technology users during the design process generally draw from the practice of participatory design (PD). Participatory design is a design approach that incorporates users as full participants in software development [1]. PD techniques incorporate prototyping, storytelling, games, photo elicitation and descriptive artifacts. Using participatory design techniques to elicit the values of technology users, and placing those values at the center of a VSD practice, is clearly an empowering and democratic approach to VSD. The values of potential users may be the

single most important source of values for a future technology. If these values can be elicited in a meaningful way, they should undoubtedly be used as a basis for ethical decision-making in design. A challenge, however, for using participatory design techniques to shape the values of a technology is helping participants become expert enough to understand the full range of technical implications of a system. This question of expertise is highlighted by the slippage that can occur between fully participatory design practices and user-centered design practices. An example of this challenge arose during Shilton’s work at CENS. The CENS team used user-centered design techniques including prototyping during focus groups to engage cyclists in the city of Los Angeles in the design of a cycle route-planning and tracking application (Reddy et al., 2010; Shilton et al., 2008). In focus groups, very few cyclists expressed concerns about privacy, despite the location tracking features built into the system (which would document their homes, workplaces and routes to work each day). Some CENS developers used this evidence to argue that users did not care about privacy for this application. However, the prototypes presented focused on interface design, and neglected to illustrate back-end storage challenges and security threats. The fact that such data could easily be shared, stolen or sold was not evident in the prototypes. Users may have had a different set of concerns if fully engaged in the design process.

### B. Provocation 2: values advocates and interventions

If soliciting the values of users is an imperfect method for VSD, perhaps we should turn to a different form of expertise. Ethicists and humanists working directly with design teams is an alternate model for conceptualizing who might be responsible for ethics in design (van Wylsberghe and Robbins, [4]). Shilton and Anderson have now participated in at least three large-scale technology development projects as ‘values advocates’ on a design team. Comparing these projects, it has become clear that a values advocate, or more gently put, a values facilitator, can bring several advantages to design. They can bring knowledge of an ethics and values literature that may not be familiar to everyone on the team. They can also serve as a translator, making bridges between abstract social values and concrete technological affordances. They can

serve as an interdisciplinary voice, inspiring new forms of creativity on the team. And they are rewarded for thinking about values (through job structure, related publications or teaching), meaning that they are encouraged to spend time on reflection. But there are disadvantages to incorporating this role as well, including potentially limiting the values considered and a risk of moving beyond expertise toward values elitism.

1) *Ethics:*

- Truthfulness
- Honesty
- Loyalty
- Respect

2) *Equation of Ethics:* As with shaping perceptions and driving business growth, an equation is also considered in our ethical decision-making processes:

$$P = f(x) \quad (1)$$

where P is the probability of an ethical outcome and x is the amount of money involved with the situation. This equation highlights the bias that can occur when financial stakes are high.

TABLE I  
ETHICS

Components of managerial culture	Ethical dilemmas		
	<i>Quality of Service</i>	<i>Spirit</i>	<i>Fulfilment</i>
Uniformity	Yes	Yes	Yes
Image	Yes	No	Yes
Number	No	No	Yes
Development	Yes	Yes	No
Court	Yes	Yes	Yes

3) *Table of Ethics:* Each of these examples illustrates the value in expertise in design ethics. A values advocate brings particular expertise to teams: not of the correct values for design, but of a larger values conversation which might be useful to a design team.



Fig. 1. Simplified form

### C. Provocation 3: ethical reflection embedded in design

The challenges of time and expertise—the expense of serving as a values advocate—has led the consider ways to incorporate ethical reflection directly into design processes, so that

values and ethics become part of the design discussion without the explicit intervention of experts. Building ethical reflection into the daily practice of design may be a more sustainable route to design ethics. This is an approach Flanagan and Nissenbaum [3] advocate in their VAP framework, which aims to provide designers with ‘backup—prior evidence, support materials and methods’ in order to concretize abstract value concepts identified through heuristic evaluation. van Wynsberghe and Robbins [5], however, caution that ethics work in design, such as values discovery, is ‘no small task, and requires expertise in areas outside of engineering’. Shilton (2013b)’s work has focused on a particular type of cue to ethical action referred to as values levers: development practices that open up new conversations about values, and build consensus around values as important to design. Schön has described design as ‘a reflective conversation with the situation’ (Schön, 1988). He writes: As a designer brings understandings, strategies, and images to a particular design situation, conducts a dialogue with that situation, and constructs in it a version of a more or less familiar design world, he instantiates a particular set of things to think with. (Schön, 1988, [6]) Values levers function by bringing social concerns into the set of things developers think with. Shilton’s research has shown that particular work practices, such as working on interdisciplinary teams, navigating institutional mandates, imagining users and use cases and working with users, can change the tenor of design conversations from primarily instrumental to ethics and theory-driven by surfacing underlying social norms and highlighting the relationship between social concerns and design decisions (Shilton, 2013b; Shilton and Koepfler, 2013). In this way, routinized development practices influence the values selected for incorporation into new technologies. For example, CENS developers reported discovering privacy, consent and equity concerns while engaging in the work of testing prototypes of their applications and those of their colleagues. As in many development labs, it was common practice to test prototype systems internally before conducting testing with outside users. Experiencing using the system, and in particular, contributing the kinds of data under request (for example, location as well as questions about eating, sleeping and exercise habits) allowed the participants to imagine what inferences might be made about their behavior, and made ethical concerns concrete. Participants’ prototype testing experiences contributed to a group consensus around privacy as a design principle for CENS systems.

### D. Provocation 4: moral exemplars

The challenge of ethics expertise within design points to the potential for training developers in ethics as a specialized form of knowledge. The idea that technical experts can also serve as ethical experts has been particularly developed in the work of Huff et al. [2] on moral exemplars. Moral exemplars are computing professionals nominated by their peers for long-term excellence in ethical leadership. They are, as Huff et al. (2008b, p.248) write, ‘the sort of person who was able to recognize an opportunity for moral action, to make a good

decision, and then able to carry it out . . . .’ Huff and his collaborators found multiple types of moral exemplars in their work, including ‘reformers’ who tried to change longstanding systems, as well as ‘craftpersons’ who tried to build systems that would help and benefit people. They have grouped the characteristics of exemplars into a combination of personality characteristics (including social and technical skills), an acknowledged moral commitment, recognition of a wider moral ecology and moral skills and knowledge (Huff et al., [7]).

### III. CONCLUSION

We have discussed these four provocations separately because they are often employed independently of each other, and because they help to illustrate many of the current tensions around design ethics in the HCI and technology ethics literatures. Though separating these methods is useful for considering a range of roles, responsibilities and expertise within design ethics, ultimately, these methods cannot stand in isolation. We need participatory design techniques to elicit user values. We need technology ethics experts to engage constructively with design teams. And for maximum impact, we need design teams to be responsible for ethical design, both through ethical practice and cultivation of ethical selves. In addition, there almost certainly models for ethical expertise not explored here. We welcome researchers engaged in design ethics to build upon this work by exploring roles and responsibility within their approaches. Separating the four provocations, and discussing their strengths and weakness does illustrate that some techniques are better suited for some design settings. And attention to each kind of ethics role can help to ensure that ethics in design is somebody’s job. These four provocations also help to elucidate the point that controversies about roles in design ethics center on questions of expertise: the ‘bossy’ in the opening anecdote. Users, values advocates and designers all bring different kinds of expertise to the practice of design. This is how ethics in design can be blended, not bossy. Recognizing these forms of expertise—and recognizing when a team faces a gap in that expertise—is critical for practicing ethical design.

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### REFERENCES

- [1] Agre, P.E. (1997) Toward a Critical Technical Practice: Lessons Learned in Trying to Reform AI. In Bowker, G.C., Gasser, L., Star, S.L. and Turner, B. (eds), *Social Science, Technical Systems, and Cooperative Work: Beyond the Great Divide*, pp. 131–158. Erlbaum, Hillsdale, NJ.
- [2] Antes, A., Wang, X., Mumford, M., Brown, R., Connelly, S. and Davenport, L. (2010) Evaluating the effects that existing instruction on responsible conduct of research has on ethical decision making. *Acad. Med.*, 85, 519–526.
- [3] Borning, A. and Muller, M. (2012) Next Steps for Value Sensitive Design. *Proc. 2012 ACM Annual Conf. Human Factors in Computing Systems*, Austin, Texas, pp. 1125–1134. ACM, New York, NY, USA.
- [4] Braman, S. (2011) The framing years: policy fundamentals in the internet design process, 1969–1979. *Inf. Soc.*, 27, 295–310.
- [5] Landau, S. (2014) Educating engineers: teaching privacy in a world of open doors. *IEEE Secur. Priv.*, 12, 66–70.
- [6] Nissenbaum, H. (2009) *Privacy in Context: Technology, Policy, and the Integrity of Social Life*. Stanford Law Books, Stanford, CA.
- [7] Solove, D.J. (2010) *Understanding Privacy*. Harvard University Press