Wrangling Ethical Design Complexity: Dilemmas, Tensions, and Situations

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ABSTRACT

Ethical engagement is central to the practice of design, impacting stakeholders across and beyond technology organizations as well as producing downstream social and environmental impacts. Scholars have previously described the ecologically-mediated nature of ethics in practice as a manifestation of "ethical design complexity;" however, the means of addressing this complexity is under-explored. In this provocation, we build on three years of prior empirical work on ethics and design practice to propose three ways of "wrangling" ethical design complexity: 1) articulating and interrogating complexity through constructed *ethical dilemmas*; 2) identifying potentially binding constraints through *ethical tensions*; and 3) describing and traversing naturalistically-defined *ethical situations*. We leverage these three approaches to provoke further scholarship and ethically-engaged design work.

CCS CONCEPTS

• **Social and professional topics** → **Codes of ethics**; • **Human-centered computing** → **HCI theory, concepts and models**; **Interaction design process and methods**.

KEYWORDS

ethical design complexity, design and technology practice, ethics, values

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1 INTRODUCTION

Ethical complexity is a persistent feature in the design of technology products and services. In the past two decades, a range of HCI and design scholars have explored way of characterizing and navigating this complexity that practitioners face in their everyday practice, with the goals of identifying common challenges [4, 8], describing tactics of resistance and activism [9, 11], and creating resources or language to help practitioners become more ethically aware [1, 2].

These scholars have described a range of ethically and ecologically complex factors that enable or suppress practitioners' ability to become ethically aware or act in concordance with their values or beliefs. For example, Boyd and Shilton [1] introduced the concept of ethical sensitivity in the context of HCI and design practice to provide practitioners with language to better notice an ethical problem, understand the situation that gave rise to the concern, and explore potential solutions to these problems, altogether highlighting that ethical sensitivity involves, recognition, particularization, and judgment about an ethical challenge in the context of design practice. In a computing education context, Hedayati-Mehdiabadi [7] studied the ethical decision-making of CS students to explore ways of supporting them to make more ethical and informed decisions. They found that student engagement with ethical scenarios and the ACM code of ethics allowed students to consider the importance of ethical issues, their connection to real-world experiences, and understand their obligations in the context of the ethical challenge. More recently, scholars have begun to consider patterns or pathways to better "push back" against ethical challenges. For example, Lindberg et. al [8] described how practitioners understand ethics and found that noticing, reflecting, and reacting are three ways practitioners engage with matters of ethical concerns, building upon the findings of Boyd and Shilton [1]. Wong [11] addressed how practitioners engage with their organizational structure, describing the strategies UX practitioners employ to navigate ethical complexity within their organization. They found that practitioners used patterns of soft resistance and activism to enact positive values within their organization, with the ultimate goal of changing their organizations' values to allow for a more ethical outcome.

These studies have revealed many different sources of complexity that relate to ethical issues in design practice. Chivukula and Gray [2] have described this overlay of stakeholder concerns and ethical knowledge through the concept of *ethical design complexity* (EDC), which "refer[s] to the complex and choreographed arrangements of ethical considerations that are continuously mediated by the designer through the lens of their organization, individual practices, and ethical frameworks." Leveraging EDC as a point of

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departure, in this provocation we describe three stances that allow practitioners, scholars, and educators to potentially "wrangle" this ethical complexity.

The stances and provocations in this paper are rooted in our experiences and insights as a research team across two different research studies. The research team—including four authors of this short paper—collaboratively worked on the research studies and employed a range of critical qualitative research methods in capacities that included data collection, analysis, synthesis, and insight building. Our engagement as a team across both studies allowed us reflect on shared and felt experiences interacting with more than sixty technology and design practitioners. However, we do not attempt to frame these outcomes in this paper format as empirical findings, but rather use the experiences from our research studies as a backdrop to situate and interrogate our engagement as researchers.

Each of the two studies involved describing or supporting everyday ethical engagement by a range of technology and design practitioners, with professional roles that included UX designers, UX researchers, software engineers, product managers, hardware engineers, and data scientists. In one study, we conducted 22 60–90 minute semi-structured interviews and in the second study, we engaged 39 practitioners and design students across eight three-hour co-creation workshops. In the first study, our goal was to describe practitioners' felt concerns in their everyday practice, which resulted—in part—in a case analysis to identify factors that impacted their ethical design complexity. In the second study, our goal was to provide resources for practitioners and students to co-design ethics-focused action plans based on their felt ethical concerns; we then conducted a thematic analysis of the 286 concerns they were interested in working on. Across these datasets, we familiarized ourselves as a team with more than 300 ethical concerns voiced by the practitioners in a range of ways. Through reflexive engagement and conversation over a three-year period, we identified three distinct stances used by practitioners to describe their expressions of ethical complexity or engagement across individual practices, organizational practices, and application of ethical frameworks.

2 THREE STANCES TO WRANGLE ETHICAL DESIGN COMPLEXITY

In order for practitioners and design scholars to address ethical design complexity, we argue that they must take on one or more stances. In prior literature, these stances have been primarily focused on ethics as framed through virtue ethics (where the designer takes responsibility for their work as a morally "good" person) or deontological ethics (where the designer relies upon agreed-upon standards of "goodness"). However, our empirical engagement with almost 50 design and technology practitioners has led us to recognize the importance of *stances* towards ethical awareness or engagement that reflects the everyday complexity of practice. In other words, it is somewhat easy to argue—in a vacuum—that a designer should strive to be morally good or follow established codes of ethics; however, it is incredibly complicated to know what the right thing is to do when impacts are unclear or unknown or if a practitioner is unable to do what they know to be right, with their job on the line.

In the following sections, we describe three stances that we have identified through our scholarly work as useful to practitioners, scholars, and educators in raising awareness, communicating ethical stakes, or guiding ethical action. These stances represent provocations for design practitioners to become more ethically aware and engaged, while also underscoring the felt ethical complexity of practice for design scholars and educators who build new tools, methods, or approaches for considering ethics, values, and social responsibility in their work.

2.1 Ethical Dilemmas

Ethical Dilemmas are purposefully constructed to describe potential practitioner concerns as they face a hypothetical conflict or quandary, expressing a reified argument across one or more elements of an existing ethically complex challenges. These dilemmas focus primarily on argumentation than conflict resolution, in keeping with typical case study practices in inquiry-based learning [6]. Examples of ethical dilemmas that are embedded in these cases can include binaries such as: ethical vs. legal, MVP (most Viable Product) vs. User Values, Ethical/Evil Means vs. Ends, and My Personal vs. Professional Values; however, these dilemmas are embedded within a constructed story rather than standing alone. Here is one example from the perspective of a UX designer:

> "*I was working as a designer for a Healthcare employer. In instances where I would suggest how a certain design would exclude a lot of people, the PM focused on what it takes to ship. I had research that supported that the design would fail for users with vision impairment and other types of cognitive disabilities, they proceeded to avoid all those recommendations and it was MVP focused. Alongside, the ultimate decision is the product owner and the feasibility aspect was decided by the developers. It was not in my best interest, but as a designer I provided them what they asked for, even if it isn't in my best recommendation. Until you don't have the opportunity to make the end decision, you tend to influence in whatever way possible.*"

This constructed case can be analyzed in order to sensitize a practitioner or student towards a range of ethical dilemmas, such as: 1) *MVP (Most Viable Product) vs. User Needs*, when they must prioritize the MVP while neglecting their user research findings; 2) *Disciplinary Responsibility vs. Job Responsibility*, when they must differentiate between their disciplinary responsibility of designing *for* the users and their job responsibility of finishing production within a time frame. Ethical dilemmas are expressed as believable cases, but are ultimately constructed to raise certain types of ethical concerns through inclusion of actors or conflicts perceived to be salient by the case author.

2.2 Ethical Tensions

Ethical tensions exist as a felt conflict between two or more differing perspectives related to individual practices, organizational practices, or applied ethical outcomes. Examples of ethical tensions include compromising on process due to business logistics such as budget and time, conflicts between personal values and requirements from clients and organizational values, lack of support from

	Ethical Dilemmas	Ethical Tensions	Ethical Situations
Framing	Constructed and Reified	Dualistic or Pluralistic	Naturalistic
Formulation	Case Studies	Shared and Felt Binaries	Ecologically Mediated
Elements	Constructed Actors, Context, and Conflict in the "Right and the Good"	Opposing Constraints and Relational Conflict(s)	Personal Experiences of Ethically-Conflicting or Uncertain Experiences

Table 1: Framing and formulation of ethical dilemmas, tensions, and situations.

internal teams when addressing product compliance or legality, or being deliberative in expressing or pushing back on opinions due to the fear of repercussions from other organizational actors. Across all these examples, there is an ethical tension that exists due to the mediation of individual, organizational, and/or existing ethical applications, focusing attention on a dualistic framing to force one option to be chosen over the other. For example, a story shared by an UX designer in our interviews presented tensions that were: 1) *internal vs. external* to his company where his company's business extends over 14 other countries which were "comparatively strict regards to GDPR compliance" which led to the local team ignoring certain "*vulnerabilities and the loopholes the [internal employee information dashboard] had*" which then conflicting with the practices in other countries; 2) *product ethics vs. project deadlines* where he "*[brought an issue] to my product manager and team's attention, they were giving temporary solutions to reach the delivery deadlines*"; 3) *organizational policies vs. regulations* when his manager found a satisfying loophole: "*You are supposed to get blanket approval from [employees who are users of the tool] so that he can make them say YES*," which still complies with GDPR's data privacy requirements but is a manipulative way for employees to unknowingly give away their rights to their personal performance data; and 4) *professional vs. interactional values* when the designer identified that his manager was "not being ethical, [which] was even more painful than the tool having the vulnerability." Ethical tensions focus attention on shared or felt binaries, often relating to core constraints in design work, which demonstrate how ethically complex issues are frequently reduced to two issues of importance which are equally important, depending on context.

2.3 Ethical Situations

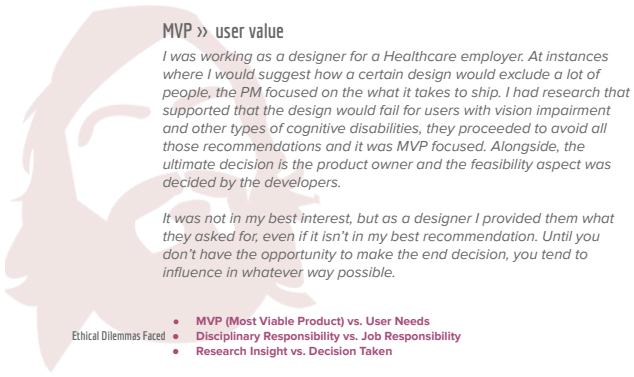
Ethical situations are ongoing experiences from the perspectives of the designer themself which amplify specific difficulties or concerns relating to "good" or "wise" action. These situations are presented in a naturalistic manner, grounded in the experience of a particular practitioner *in relation to* their ecological setting, resulting in an honest account of the ecologically-mediated issues and real-world complexity that would need to be apprehended to make local changes. Ethical situations include detail regarding the concern being experienced, the actors involved, the context in which the issue occurred, and the intended change or goal for making the situation better to describe the existence of an ethical design complexity—with the goal of avoiding reifying this complexity as binary tensions or false choices. Some condensed examples of ethical situations follow. "*As a design research lead, I will focus on knowing when implementation is not accessible or otherwise user-unfriendly in the context of a client meeting, with the goal of advocating for user needs so that the site works for all users, regardless of ability.*" Or "*As a product manager and potential user, I will work on designing for/with the Metaverse to ensure it is not infringing on participants' data and rights so that product teams can take a step back and consider implications.*" In these examples, the situations focus on the practitioners' mediation of felt ethical concerns across individual responsibilities (e.g., a professional role like design research lead or product manager), organizational practices (e.g., client interactions, team meetings and alignments), and applied ethics (e.g., making products more accessible or anticipating impacts of new technologies on data rights). When comparing ethical dilemmas and situations, the focus in situations is on naturalistic experiences from the perspective of a practitioner—with the goal of addressing these local issues through resonant and personal activities, rather than identifying common practices that generalize across many practitioners.

3 PROVOCATION

There is a broad interest among HCI and design scholars in supporting technology and design practitioners as they navigate ethical design complexity in their everyday work, while also recognizing that technology practice is inherently individually and ecologically complex due to the often conflicting motivations, interests, and values of practitioners and their organization [11]. The concept of ethical design complexity alongside an active cultivation of ethics within organizations enables us to describe the mediated nature of navigating these ethical challenges in technology practice through a range of different resources and stakeholders [4, 8]. How could we employ these three stances—ethical dilemmas, tensions, and situations—to potentially reconcile this ill-structured nature of ethical design complexity in practice? We offer two provocations to conclude this short paper and describe how these three stances could be activated to promote more ethically-engaged design practices.

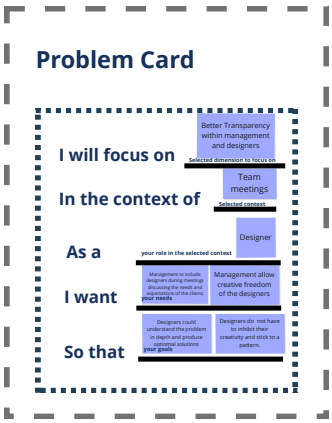
3.1 Manifold Pathways, not Monolithic Methodologies

Based on the three stances presented in this paper and considering that technology practice involves a fusion of organizational and personal values, we posit that engaging with ethical design complexity in technology practice must be an activity accomplished through multiple stances rather than a mono-stance—considering a range of complementary practices instead of one single methodology that must be "fit into" work practices. Therefore, utilizing the inter-relationships among these stances may allow practitioners to



(a) Ethical Dilemma

(b) Ethical Tension



(c) Ethical Situation

Figure 1: Examples of three stances to wrangle ethical design complexity. a) an ethical dilemma card that presents a constructed case with related dilemmas; b) a subset of ethical tensions we identified as binary pairs; and c) a problem card to reveal salient aspects of an ethically-complex situation.

better engage with "felt" and "on the ground" ethical design complexity more meaningfully, valuing both the subjective experience of the practitioner and the particular ecological components that they wish to address or prioritize. Traditionally, ethical design complexity has been primarily addressed using reified or constructed case studies presented with ethical dilemmas (e.g., [6]). In contrast, we encourage scholars, practitioners, and educators to expand beyond case studies to also include ethical tensions and situations as a means of wrangling with one's felt design complexity, engaging and training students and practitioners to respond reflexively towards ethical challenges. Using our provocation as a point of departure, future scholarship should also consider what kinds of tools or approaches encourage practitioners or students to confront and deeply engage with ethical complexity (e.g., a recent collection of ethics-focused methods [5]) rather than simplify or reduce this inherent complexity.

For instance, a practitioner or design student in a given situation might find value in reading a case study about an ethical dilemma that causes them to think about issues they have not considered in their full depth before. However, it is equally important for these individuals to examine the dynamics of the ethical situation that is happening to them as part of their immediate lived experience, challenging them to assess why this situation is ethically problematic and what circumstances have led to this situation occurring. A series of tensions can then serve as a bridge between the ethical situation and dilemma stances that they may have learned about through case studies, allowing the practitioner or student to use their experience of ethical design complexity to question and interrogate the things that are leading to the tension. For example: *Are my personal values conflicting with the values of the organization and as such, giving rise to ethical tension?* Or in the context of a dilemma, using the dilemma to analyze the case under consideration to better understand the source of the tension and anticipate potential scenarios where this case might anticipate future challenges. In all, the adoption of pluralistic stances enables the practitioner or design student to engage with ethical issues and think about the same problem from multiple levels of abstraction and concretization, thus providing a pathway for them to engage with ethical design complexity and consider ethical impacts of their work.

3.2 Being Practical about Ethical Imaginaries

Scholars and educators often rely on ethical imaginaries [3] like the *"Trolley Problem"* [10] as a means of sensitizing students and practitioners towards future ethical scenarios. However, the concept of ethical imaginaries often relies on anticipatory ethics, and unpropitiously, one of the criticisms of anticipatory ethics is that although adopting futuristic ethical situations as a means of sensitization is useful to an extent, it is also limiting in terms of its ability to enable practitioners and students to think about the ecological complexity of things that are happening now and not the things that can happen in the future. The three stances we have proposed potentially mitigate this criticism by providing pathways that allow participants to think about these imaginaries (ethical dilemmas), consider their present actuality (ethical situations), and provide drivers that may impact their potential reality (ethical tensions)

at the same time using these stances as an interrogatory tool for grounding them in "felt" concerns and complexity.

In the title of this provocation, we argue that ethical design complexity must be "wrangled." Thus, the implication of these stances for educators and scholars alike is that although a conversation about ethics can begin with case studies, we nevertheless have to figure out how to expand those insights to other stances. The "wrangling" involved refers to working actively through substantial complexity to foreground relevant ethical tensions, including the situations that gave rise to them, and resolving how these abstracted characteristics might differ or appear in more complex form in real-life contexts. Rather than implicitly assuming that events in real-life design practices are going to be similar to the case studies (or be directly transferable from knowledge gained through cases), we argue that sensitization should include wrangling the topic of ethics from multiple stances, alternately using case studies, tensions, and specific personal situations to interrogate their realities, using this range of stances as a means of enriching their understanding of both their lived reality and ethical design complexity.

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