

Dimensions of UX Practice that Shape Ethical Awareness

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ABSTRACT

HCI researchers are increasingly interested in describing the complexity of design practice, including ethical, organizational, and societal concerns. Recent studies have identified individual practitioners as key actors in driving the design process and culture within their respective organizations, and we build upon these efforts to reveal practitioner concerns regarding ethics *on their own terms*. In this paper, we report on the results of an interview study with eleven UX practitioners, capturing their experiences that highlight dimensions of design practice that impact ethical awareness and action. Using a bottom-up thematic analysis, we identified five dimensions of design complexity that influence ethical outcomes and span individual, collaborative, and methodological framing of UX activity. Based on these findings, we propose a set of implications for the creation of ethically-centered design methods that resonate with this complexity and inform the education of future UX practitioners.

Author Keywords

UX practice; practice-led research; ethics; values.

CCS Concepts

•Human-centered computing → Empirical studies in interaction design; Empirical studies in HCI; •Social and professional topics → Codes of ethics;

INTRODUCTION

In parallel with a greater popular awareness of ethical concerns—often manifest through the lenses of privacy, security, or sustainability [9, 10]—there is also increasing interest in the role of ethics in HCI, UX, and design disciplines by researchers [27, 45] and practitioners [5, 39]. While there have been substantial efforts to identify, codify, and institutionalize ethical standards and practices, both through methods and methodologies (e.g., [17, 45]) and formal codes of ethics (e.g., [6, 16, 21]), there are still clear gaps in ethical guidance, particularly with regard to emerging technologies [19].

In framing this paper, we do not wish to gloss over or diminish the important work that has already been done to describe

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the nature and importance of designer responsibility [29, 51], the landscape of values that we may wish to consider from a design perspective [18], the ways in which values and ethical concerns are inscribed into our work [53, 54], and the impact of the growing awareness of ethical concern on HCI and UX education [55] and practice [15, 26]. However, we do wish to build upon work that describes ethical concern in highly situated, contingent, and designer-centric ways (e.g., [43, 44, 46, 48]). In particular, we seek to build upon previous conceptions of *design complexity* [49] and *ethical design complexity* [26], contributing not only a descriptive account of UX practice, but also building connections among methods and tools, organizational and individual practices, and the ethically-central role of the designer that adds ecological context to prior work on UX practice.

While the majority of previous work in this practice-led framing [34] is described through a single or multiple case study methods, often with an explicit *a priori* ethical framework, our goal for this paper is to present participants' felt design complexities and value tensions through dimensions of their UX practice. Our intention is to describe these dimensions to inform future frameworks of ethics that can strengthen design preparation and practice. We seek in this paper to describe dimensions of UX practice that shape ethical awareness through engagement with a broader range of UX practitioners representing multiple types of educational preparation, industry experience, and work contexts. Through a bottom-up thematic analysis of eleven practitioners, we describe five dimensions of design complexity that these practitioners have encountered in their work that shape their ethical awareness and action. These dimensions span individual, organizational, and methodological positionings of design activity, including: attempts to position UX within organizational strategy; engage in conflict resolution and balancing when engaging in wicked problems; prioritizing appropriate design approaches and methods; continuously learning about design and ethical practices; and identifying utopian or dystopian futures as edge cases. These findings facilitate further consideration of the role of designer responsibility in acting ethically, and how this role might be more fully supported through enhanced design methods and educational practices.

The contribution of this paper is two-fold: First, we provide a range of practitioner experiences in relation to ethical awareness across multiple levels of stratification, further contextualizing experiences captured in existing case studies and providing a broader set of factors that may impact or motivate future research on ethics in a practice-led framing. Second, we

provide an enhanced description of the *ethical design complexity* these practitioners have experienced through a proposed set of five dimensions, marking out a space to further develop and define new ethical perspectives, methods, and educational approaches in HCI and design research.

RELATED WORK

Ethics and Values in Practice

Substantial work has been done in the past decade to describe the role of ethics and values in HCI and design practice. These strands of practice-motivated or practice-led work include a range of approaches, including a focus on methods or organizational practices that enable designers to engage with ethical concerns (e.g., [12, 18, 47]). Specific approaches that have been popularized in the research literature include methods such as *value-sensitive design* (VSD) [17, 35] and approaches that designers can use to foreground ethical concerns such as *value levers* [43]. Additionally, other researchers have addressed the ethical complexity of emerging technology through lenses such as persuasive technologies [3, 37], dark patterns [5, 15, 30], and value-centered HCI and design education [25, 32, 55]. Many accounts of ethical complexity in practice contexts has been described through rich and detailed case studies, frequently in the Science Technology Studies (STS) tradition (e.g., [44, 46, 48]). However, there are few accounts of broader ethical concern in HCI practice that build upon these cases.

Researchers have also been influential in the creation and maintenance of professional codes of ethics, in both computing and design contexts (e.g., [6, 21]. While it is unclear how often these codes are invoked in everyday practice, these codes do provide a documented standard and boundary object by which and through which practitioners might define the ability of their organization to operate in a legal and “ethical” manner [16]. However, Buwert [6] argues that the adoption and implementation of such professional codes in organizational settings can compromise the ability of the practitioner to actively solve complex ethical issues in a manner sensitive to and accounting for core human values, going beyond the rigid rules inscribed within the code which describes what “is” ethical or legal. Ultimately, the adherence to the guidelines set out in this code can cause practitioners to feel an aesthetic sensation of ethicality, while actually not attending to the full ethical design complexity present in the design situation.

The shift from the more traditional lens of professional ethics to pragmatist ethics, valuing both the designer’s character and the uniqueness in complexity of each design situation, is exemplified by van Wynesbergh and Robbins’ [52] concept of “ethicist as designer.” Their proposal, echoed by other scholars (e.g., [24, 33, 38]), calls for ethics to take a central place in design activity, as a critical motivator and mediator in the judgments of everyday practice. This pragmatist framing of ethical concern, awareness, and action seeks to engage designers in decision-making practices regarding ethics which include the uncovering, scrutinizing, and translation of values into design artifacts and technical content. This perspective builds upon previous notions of design as being involved with world-making and inscription [50, 53, 54] that inherently has

an ethical character with clear broader links to social responsibility [1, 13, 31, 33]. Building upon these traditions, in this paper we seek to describe the everyday work of UX practitioners as inherently ethical, but as researchers, we do not seek to describe this ethical complexity within a specific *a priori* ethical frame. This positioning and lack of a specific framing definition of ethics or values is intentional, allowing for a range of complex practices and shaping factors to emerge that might not be fully captured through only one ethical paradigm.

How Designers Work in Practice

We build upon previous efforts to describe the design complexity inherent in HCI practice [20, 22, 51, 56]. By taking on this practice-led approach, we acknowledge the need for HCI researchers to describe the interactions, experiences, and judgments of practitioners *on their own terms*, rather than primarily through the lens of academic or researcher-driven theories [41, 49]. We seek to highlight the concerns and practices of practitioners in their everyday design practice, with the goal of strengthening existing methods and approaches to facilitate ethical engagement of designers, and identifying new opportunities to build on designers’ capabilities in relation to their tools, methods, and local knowledge [28, 49, 51]. We build upon previous work on how design knowledge is created, disseminated, and used—in particular the concept of a *flow of competence* in UX design practice [28]. This framing of design knowledge and competence foregrounds the ways in which the espoused values of an individual and organization they work within can differ greatly from the values that are activated in the design process, emerging as an interplay of individual, organization(s), and situated design context(s).

In framing our work as a form of practice-led research, we also rely on ethical dimensions of knowledge sharing, including the notion of *ethical design complexity* and the mediation of this complexity through individuals, organization and applied ethics [26]. By ethical design complexity, we refer to Gray et al.’s [26] description of “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.” This description of designers as inherently being engaged in ethical work that is complexly and continuously mediated resonates both with a philosophical account of design activity from Verbeek [53, 54], as well as previous descriptions of designers’ interaction with examples of dark patterns on Twitter [15]. Building on these research examples, we do not assume that notions of empathy or user control are always oriented or manipulated in ethical ways. While UX designers perhaps support human needs in more direct ways than other disciplines, we have identified the need to describe how practitioners engage with different dimensions of design complexity that have *an ethical character* across a range of organizational contexts.

Designer Responsibility

To draw together the previous two subsections of related work, we use the notion of *design character* from Nelson and Stolterman [38] to emphasize the core commitments and philosophy of a designer, and the ways in which these commitments guide their design action. This focus on the designer herself is a

shift from codified modes of ethical reasoning, identifying instead the highly personal and situated ethical concerns that impact a designer's process. Two additional layers of design complexity activate a designer's character: 1) the designer's responsibility towards the design futures that their work creates (i.e., "designer as guarantor"; [24, 38]); and 2) the tacit and explicit inscription of values into the artifacts that the designer produces [53, 54]. The intersection of these two layers of design complexity helps to describe the designer's responsibility—linking the beliefs of an individual designer towards the impacts of the outcomes in their practice and the actual outcomes of their design activity.

Prior research has primarily addressed the study of social responsibilities of developing designers through specific examples of artifacts they create, such as design concepts in classroom settings (e.g., [7, 23, 55]) or design protocols (e.g., [11, 36]). In addition to these ethics-focused studies, HCI scholars such as Dombrowski [14] and S. Bardzell [2] have identified an agenda for incorporating principles from social justice and feminist theory into the work of researchers and practitioners. All of these perspectives, taken together, demonstrate the need to further describe the ethical awareness of UX practitioners, including how they surface and address their ethical responsibilities in design practice, informed by value awareness and a sense of designer responsibility.

OUR APPROACH

We conducted an interview study, collecting data through semi-structured interviews with UX practitioners using a maximum variation sampling approach [40]. To build this maximum level of variation, we sought to identify practitioners that represented a range of industry types, years of experience, differing educational backgrounds and degree levels, current role(s) in their organization, and related experiences as a professional practitioner. We focused on practitioners in North America, and recognize this as an important limitation of our work. We recruited and interviewed eleven participants satisfying these criteria, and analyzed the resulting data to describe the dimensions of UX practice that had ethical implications "on the ground" through the experiences shared. In this paper, we seek to answer the following research questions:

1. What dimensions of ethical design complexity are discussed by the UX practitioners?
2. How do practitioners acknowledge and address this complexity in their everyday practice?

Participants

We interviewed eleven UX practitioners who were recruited via a snowball sampling strategy through our professional networks, social media, and members from design teams we had engaged for previous research studies. Table 1 details the demographic characteristics of the eleven participants. The participants were selected to form a varied sample in terms of gender identity, industry type, locations, role in the company, educational background, and professional experience. We used pseudonyms for the participants to ensure the confidentiality of their identities and the organizations that

they represent. While we were not able to recruit participants for all industry types, our stratified sample includes: Agency/Consultancy, Enterprise (B2B), and Retail (B2C) organizations. Similarly, we were able to capture intentionally differing UX practitioner roles, including design managers, product managers, UX researchers, and UX designers. The resulting interview sample included participants with industry experience ranging from 2 to 21 years, and the participants held a combination of Bachelors degrees (n=2), Masters degrees (n=7), and Doctoral degrees (n=2).

Data Collection

We conducted a 60–90 minute semi-structured interview with each participant through Skype, a phone call, or in-person. The focus of the interviews was to capture a relatively broad portrait of their experience in industry, with the researcher actively shaping the conversation to expand upon the role that ethics and values played in their daily design practice *on the participants' own terms*. Each participant consented to the interview, and the study was approved by our institutional review board.

We followed a critical interview approach [8] to construct the interview protocol, focusing on the asking "why" questions, rather than direct questions that pre-categorized each interviewee's practices. In particular, we provided the participants with no *a priori* framing or definition of ethics and values, allowing each participant to define for themselves what these terms meant in relation to their practice. The protocol contained questions seeking to identify their everyday work practices and lived experiences, including how their design practices had evolved over time, their industry experiences, the constraints and the challenges they faced in their current and previous roles, how they overcome/overcame these issues, and their opinions regarding design practice in industry. Examples of lead-off questions that prompted these ethical issues included: 'Can you describe an experience when the decisions made by a stakeholder made you feel uncomfortable?' and 'What do you think is your social responsibility as a designer?' All of these questions were asked and probed from the researcher perspective through the lens of ethics and values, although these terms were not generally used in the questions being asked. It was anticipated that the adoption of this lens would offer insights regarding the practitioner's situated meanings of terms using examples from their own experiences or existing products.

Data Analysis

All interview data was captured through audio recordings, with the consent of the participants. Each recording was later transcribed using an online automated transcription tool. Low-inference notes were taken during the interview to combine with the transcripts for researcher reference during the analysis process. The first round of engagement with the data included cleaning the transcript, which required attentively cross-checking the audio and transcription to identify and correct any words, as well as speakers, paragraph breaks and any instances that were inaudible or incorrectly transcribed by the transcription tool.

Name (Years of Exp.)	Education	Industry Type	Role
Reece (6)	MS in Interdisciplinary ESE, PhD	Agency or Consultancy	Product Manager and Designer
Oliver (11)	MS in Interaction Design	Agency or Consultancy	Design Manager
Lucy (9)	BS in Computational Media	Enterprise (B2B)	Designer
Amy (13)	PhD in Ed. Psych. and Stats	Enterprise (B2B)	Researcher
Jason (6)	MFA in Computer Graphics Design	Enterprise (B2B)	Designer
Sharma (21)	BCA in UX and IOT	Enterprise (B2B)	Designer
Andy (13)	M.Des in Industrial Design	Enterprise (B2B)	Design Manager
Daniel (5)	MS in HCI and UX	Agency or Consultancy	Designer
Keera (2)	B.Des in UX Design	Enterprise (B2B2C)	Designer
Ruth (11)	MS in Human Factors	Enterprise (B2B2C)	Product Manager
Cathy (12)	BFA in Comm. Design	Retail (B2C)	Designer

Table 1. Participant demographics. (B2B = Business-to-Business; B2C=Business-to-Consumer)

The second round of engaging with the data included the formation of preliminary codes [42]. As a research team, we went through multiple rounds of coding and preliminary theme formation to describe common patterns across multiple participant interview transcripts. We used a bottom-up thematic analysis [4] approach to answer our open ended research questions, coding the data in two rounds. The team of researchers included four students who had academic training in qualitative research, led by a PI with expertise in critical qualitative research. The student researchers were sensitized to the process of thematic coding and analysis through assignments from previous related research projects, including a previous study that had partial overlap with this dataset.

Initially, three researchers individually coded two different cases of interviews with a range in relation to industry type or participant expertise. These cases allowed us to identify a wide range of potential codes, which were then synthesized across researchers to describe candidate themes [42]. The major themes that emerged in our conversation, and from the data, related to the participant's responsibilities in their organization, the design process they followed, various dimensions of their experiences with stakeholders, their personal design philosophies, and thought experiments about various design artifacts and their impacts on the society. We have not based our themes on any existing ethical frameworks, but have instead represented our themes through quotes grounded in the lived experiences of the design practitioners. Our final codebook of these themes are presented in Table 2.

In second round of coding, we applied these emergent themes to all interview transcripts. This was carried out by four researchers, then exchanged with another researcher for member-checking and confirming the application of the themes. The peer debriefing and multiple discussions throughout this process ensured rigor and consistency in our coding. The results from this process of thematic coding are presented in the following section.

FINDINGS

In order to convey the ways in which practitioners acknowledge and address the different aspects of ethical design complexity they encountered in their everyday practice, we will discuss each of the five dimensions that shape this ethical awareness that we have identified through our analysis. Through these five dimensions, practitioners touched upon various aspects of design practice—individual, organization and applied ethics [26]—to illustrate their experiences regarding engagement with ethics. Due to the interpretive nature of our analysis approach, some quotes were coded under multiple dimensions, but we have sought to describe each dimension as a coherent set of data. All quotes are linked to pseudonyms from Table 1.

Positionality of UX in the Enterprise

One of the most common aspects of ethical design complexity shared by our participants addresses the perceived and actual roles that UX plays in the development of strategy and in support of decision making. Through this theme, “Positionality of UX in the Enterprise,” we present practitioners’ reflections of current and/or previous UX roles within their organization and the impact of this positionality on ethical decision making, in addition to aspirations of what that role might be in an idealized setting.

In reflecting upon the responsibilities and perceived level of value placed on the contribution of UX towards strategy in their current and previous organizations, practitioners discussed misalignment in their own aspirations for what their team should do or should have done in practice, with the actuality of practice based upon alternate aspirations of the organization in question. One such reason for these disconnects between UX aspirations within an organization and what everyday practice actually consisted of includes ethical violations and concerns in design practice. These violations or concerns usually occurred due to the hierarchy of disciplines within such organizations (i.e., what each discipline was allowed to control), the organizing metaphor of each company

Dimension	Description
Positionality of UX in the Enterprise	Description of the role that UX plays in organizational strategy, or aspirations of what that role should or might be.
Conflicts and Balancing in Decision Making	Identification of entities that prevent an individual or organization from making the design decisions they believe to be correct, including instances of negotiation of perceived difference among multiple stakeholders, artifacts, or actors.
Identified Design Activities/Practices	Prioritization or identification of design process(es) based on beliefs regarding design activity.
Self and Stakeholder Education	Attitudes or activities that encourage personal or stakeholder growth in relation to UX, design, or ethical practices.
Futuring	Identifying potential future scenarios, outcomes, or thought experiments.

Table 2. Emergent Themes coded in the data

(e.g., agency, embedded design teams), and the prioritization given to other activities and areas of function as a result.

In the case of Andy, design was viewed within their organization as lower in hierarchical importance in comparison to disciplines such as engineering: *“The unfortunate reality is that in terms of for decision making hierarchy, design is still at the end, if not at the bottom of the ladder.”* Due to this positioning of UX in the hierarchy of decision making, Andy explained how this impacted and restricted their focus on the users’ needs in the design process. Andy briefly speculated that his role might be quite different in a company where design was placed at the top of the organization hierarchy, identifying that there might be relative differences in his UX practice as a result. He referred to such speculative companies as *“design driven organizations—like let’s say, if you want to call it Airbnb, a great design driven organization, but experience driven organization where design, Apple for example, is a design driven organization. They focus on the users. A lot of their products are focused on the experience.”* After a brief period of hopeful hypothesizing as to the culture within such organizations, Andy engaged with their present reality with regard to the culture dictating their organizational UX setting: *“[in] this [company], business and engineering are much more stronger functions than design. So design has to compromise. Most of the time in organizations with business and engineering functions dictate what gets built and how it gets built.”*

While not alluding to organizational factors in same way, Lucy also lamented the UX compromises she made in a previous role: *“I think the bad thing [...] and what also frustrated me about working at an agency was you didn’t have full control of your design.”* However, after transitioning to her existing design position within an enterprise setting, Lucy spoke with fondness at the absence of such issues in this current role: *“I think what’s good here is what I was also looking for in my next position, which I found here was, um, you had more control.”* In keeping with the results of differing levels of UX control in the final decisions made in a project, Jason alluded to the possible inadequacies of solutions which came about as a result of UX compromise: *“If you are in an environment that allows [...] that you bring your expertise and they value*

that, so then they do, we keep the best recommendation for that situation, right?”

Constraints and issues of control were observed to be a natural aspect of UX practice in all corporate settings occupied by our participants. Though a solution might be ideal and suitable from a UX perspective given the constraints these designers identified, other organizational areas may deem such a solution technically infeasible, or financially impractical in comparison to alternative solutions and the costs of other projects. As put by Andy: *“How do you position UX, how do you influence decisions at the higher level because business organization will have their own goals, engineering will have their own goals and sometimes what we propose as an ideal user experience may not be in line or in agreement with what business schools or engineering goals are. So we may propose something which the engineering team does not have the bandwidth to build in the project.”* Andy then took this lamenting of the continual compromises made by UX to discuss their own role in mitigating the level to which they did indeed end up compromising with the generated design solutions which are not in best interest of user values and support shareholder values more in such situations: *“So how do we, how do we then negotiate and basically come to a place where we do the best for the user, while also considering what are the practical constraints from engineering or business sides? So striking that balance becomes more critical and that’s where probably my role as a manager becomes even more important.”*

Finally, Reece reflected on the responsibilities in his own role as Product Manager & Designer: *“I am being held accountable to the way the interface stacks up to a budget someone might have, or a long term vision or goal that the company has,”* perhaps pointing towards the conflicts in user-centered value and business strategy that come with his position. Across all three of these examples, we observe the barriers that result when enacting one’s design philosophy due to the diffuse and sometimes weak perceptions of UX as a discipline, organizational factors that weaken the strength of human-centered design as means of argumentation, or the inability to control how UX guidance is taken up in the development of the final materials.

Conflicts and Balancing in Decision Making

‘Conflicts and balancing in decision making’ refers to entities that a practitioner engages with in their everyday practice, on the individual or organizational level, which create barriers to acting upon design decisions they believe to be correct or appropriate. The outcomes of these conflicts required practitioners to negotiate perceived differences between multiple stakeholders, artifacts, or actors in order to reach consensus on a decision among multiple perspectives and move forward. Multiple entities were identified throughout the interviews as factors that provided resistance to decisions that the UX practitioners felt to be appropriate. Practitioners frequently described pushback from individuals and groups working both externally to the practitioner’s organization, and within the organization itself. First, we will describe sources of conflict, and then we will identify instances of explicit balancing that took place to mitigate these conflicts.

Looking for common causes of conflict and balancing in decision making in their own role and organization, Cathy identified the “*performance marketing team*” as continually pushing back against some design decisions, due to the fact that “*they see any potential decrease in sales as a crisis*.” In this case, initial efforts to “*push back*” eventually ended in the project progressing with the wishes of the performance marketing team dominating; the practitioner now stated that they had reached “*the point where you’re like, it’s not worth my energy anymore*.” Discussions regarding sources of conflict for practitioners when working with clients external to their own organization created similar levels of palpable frustration. Reece described the challenge in working with some external clientele, particularly where the disconnects in values between the two parties are so vast: “*they might hire us just to validate their own ideas and if we come with something alternative to their ideas then we must be wrong, and they’re going to do what they want anyway*.” In a different setting, Oliver hinted toward a distressing outcome that resulted from balancing client needs and design realities, stating: “*why the hell are we even brainstorming? We don’t even believe in, in what’s happening*.”

It would appear, however, that the client or shareholder is not the only direct barrier to the practitioner in proceeding in a manner that they feel is correct. With commercial pressures within a practitioner’s own agency, who like in Lucy’s case “*are also under pressure to, um, maintain your relationship with that client*”, any potential motivation used by the practitioner or their team to sway the client into agreeing them might be suppressed due to “*that pressure to agree with, know what [the client] say[s]*.”

Finally, Daniel reflected on the challenge that faced practitioners in their attempts to work in an ethically-sound manner within commercial environments, while also getting buy-in from key stakeholders: “*you can graduate and you can come up and you can have the best moral compass. But the thing is, is like the end goal of capitalism is more money in your hands*.” Speaking from experience, Daniel built upon this point by speaking unfavorably of “*many of the times where I felt like I had to compromise what it is that I believed in was*

just so it was about budget and money and things like that, and not the effect of this technology.” Across these instances, practitioners had to face personal and organizational conflicts relating to value orientation, seeking to balance these conflicts to effectively meet the needs of clients and other stakeholders.

In the process of negotiating and balancing these conflicts, a number of participants expressed frustration—or occasionally a sense of achievement—when engaging in disconnects in opinion and values among project-based decision influencers. This sense of achievement was not only present in relation to the aim of keeping the project on the right track from the perspectives of commercial and design success, but also with regards to having the project progress with the best of intentions for its effected parties from ethical and user-centered standpoints. Recollections of experience varied in the extent to which the designers felt compelled to ensure that the consensus reached and acted upon in these situations aligned with their own values, as well as the tactics used in negotiation between the concerned parties.

The story of Cathy in particular epitomized a commonly-held perception of distrust or disregard towards their team’s perspectives that they thought was likely to be held by members in more commercially-focused roles: “*I’m not trying to lead sales. I think sometimes they think, well they just want something new and they think that we’re not really considering the end goal for them. Whereas I would never set out to try to lose a sale*.” Seemingly preferable methods to mitigating these issues were often built upon a premise of reducing the amount of domain-laden language in the conversation, with actors seeking to minimize the psychological barriers among stakeholders and actors, instead trying to instill a team-based mindset throughout discussions. This minimization was certainly the case for Cathy: “*You have to kind of be like, we’re all on the same team. And I think encouraging that and being like, everyone, we’re all here for the same end goal. I think just keeping that in mind for them has been helpful*.” In some roles, designers held a degree of responsibility to execute upon company strategy, which brought additional ethical awareness and concern. For instance, in Reece’s case, designers viewed their position as not solely advocating for the user, but also actively balancing user values with business goals: “*I think my role as strategist affects my role as designer because as I’m designing, I’m not only optimizing some graphical interface, but I’m considering that interface and how it might affect business goals*.” The nature of the designer’s position in this type of organizational context necessitated creating designed outcomes that did not solely benefit one stakeholder over the other, or at least attempted to balance user and shareholder needs equally.

Identified Design Activities/Practices

‘Identified design activities and practices’ addresses the identification and/or prioritization of particular design methods and processes that a practitioner considered to be valuable in everyday practice that led to more ethically sound solutions, based upon their own philosophy regarding design activity. While no two design processes—whether on the team, individual, or project level—can be truly identical, clear commonalities

in preferred and valued design activities based on personal beliefs and experience were mentioned by the practitioners. The perceived importance and prioritization of various activities in everyday design practices appeared to be shaped and mediated by one's own design philosophy, consistent with prior literature [26, 49, 51].

A wide spectrum of prioritized design activities and processes were raised for discussion throughout the interviews, with similarity and diversity across the eleven cases. On the more common end of the spectrum, the majority of practitioners discussed the “*key role*” that user research plays in the design process in their everyday practice, with Andy referring to it as “*a channel to help us make a decision*”, articulating the value of describing user needs in the decision making process. The results of user research allowed practitioners to overlook their “*designer's assumptions*,” and instead trust in the value of the data at hand, potentially developing new perspectives toward end users or contexts of use. Usability testing held a similar degree of heightened value in the practitioners’ design processes, with Jason declaring: “*The reason we test and test and test continuously is just to assure that whatever we are proposing it is easy for the user.*” Reliance on both of these methods revealed a sense of trust in user research as bringing about more ethical outcomes, with an unstated assumption that *if* research was conducted and acted upon, it would result in a more desirable end product.

Perhaps the most striking differences in selection of design practices was regarding the utilization of what labeled by Oliver as more “*scientific*” methods. On one side of the spectrum, a number of practitioners including Amy viewed themselves as advocates for “*data driven design*”, preferring to make decisions firmly grounded in what they deemed “*solid*” data. In contrast, others like Oliver were of the belief that design should be more than a scientific process: “*Anybody who says they apply the scientific method to design is an idiot; really misinformed.*”. While such opinions represent extreme ends of the spectrum in regard to the scientific nature of design practice, practitioners holding similar opinions gave additional support to their reasoning for adopting such a perspective. For instance, Reece stated “*process is so much more than product*”, before going on to explain the importance of a mindful approach, declaring “*when we cannot understand how we arrived at a conclusion, then that becomes really dangerous.*” Ultimately, guiding metaphors of design process tended to abstract beyond the subjective approach of individual practitioners, and these abstractions appeared to concomitantly shape ethical outcomes. For instance, if a practitioner viewed their work as “*scientific*” or “*data-driven*,” the resulting design decisions may be much more easily ethically distanced from the practitioner than if the motivation was a strong sense of advocacy for the end user.

Self and Stakeholder Education

‘Self and stakeholder education’ refers to the identification of attitudes or activities that are considered valuable by the practitioner with regards to personal growth as a UX practitioner. These learning practices were positioned in relation to UX, design, or ethical practices, both for the practitioner

themselves and for other stakeholders. Day-to-day tactics for the negotiation of organizational differences discussed were predominantly based upon solving project and case specific issues. However, some participants discussed what they felt to be worthwhile activities in prompting a longer-term education and growth towards the adoption of an increasingly user-centered and ethically-mindful perspective, notably for the more commercially-focused stakeholders within organization/s they had previously/currently worked within, and in some cases, the practitioners themselves.

Practitioners differed slightly regarding their critique of organizational support for education, particularly with respect to their perceived prioritization of profits leading to a lack of ethical consideration towards their users. “*I'm starting to feel like it's not the responsibility of us anymore because I think all of us are already thinking from that perspective*”, spoke Cathy of her own organizational situation, before continuing by highlighting the need for “*more education for business owners and people in other parts of businesses to be a responsible business owner. Don't push these agendas. You think making more money quickly is the most important part of your business.*”

The necessity for stakeholders—and organizations in general—to take a greater initiative in instilling a more ethically-sound perspective and subsequent strategy was echoed by other participants. Ruth described her holistic approach to engaging both herself and her organization in an ethical conversation: “*It's not just a designer process or designer influence at this point of time, but it's a cultural shift that has to happen in the organization on how they treat ethics.*” This example fit with the trend among interviewed practitioners that the designers in their organization were doing what they could to inspire a transition in company culture towards ethics, but that greater interest and action would be required further up the organizational hierarchy for lasting effects to take place.

Although conversation regarding methods used to bring about this longer term organizational change was not common among participants, Cathy spoke of working hard to increase inclusivity among a male-dominated apparel company. She mentioned a specific example that spoke to her intentions and actions in bringing about organizational change: “*I'm really trying to push the [...] let's be more welcoming to everyone and that will help sell more of our stuff [...] make your users feel accepted, not just give your users a nice experience like actually make them feel like they belong in your realm.*”. While the extent of the success of influence remains unknown in this case, the designer's understanding of how they might mediate their ethical intentions primarily in relation to underlying rewards of commercial success are clear.

The majority of practitioners felt that the real responsibility for further ethical education lay with their manager, while many felt that they as UX practitioners already had enough ethical knowledge to make informed decisions. However, Oliver who works in a strategy and management role heavily criticized “*a lot of the design programs that are out there [...] that are behind the General Assemblies like that of those are flash in the pans. Those are all commoditized design.*” He used this

criticism to partially redirect the blame for a reduced uptake of ethical mediation in organization decision-making towards design programs that lacked the “*deep philosophical theoretical frameworks*” that more traditional programs had oriented their educational curriculum towards. Building upon this point, the same individual advised that design practitioners—and possibly those in management positions above them—“*can read the same damn books for the next hundred years and because none of that stuff changes. And that's, that's, that's the stuff that I think is going to be really important.*” This dimension of design complexity identifies the felt need of practitioners for continuous learning, both to increase ethical awareness and to improve their own and organizational sensitivity towards user-centered approaches. The practitioners we interviewed indirectly hinted towards the impact of self-education about value-centeredness in design and how being well-informed about ethics might further develop a designer's sense of responsibility towards current and future effects of technology.

Futuring

‘Futuring’ refers to practitioners’ identification of potential future scenarios, outcomes, or thought experiments, whether on an individual, organizational, or global scale. Reflecting upon the discussions regarding ethical complexities within their own practice throughout the interviews, a number of practitioners took the opportunity to divulge their opinions on what they felt—or at least wished—the future may hold within their own organizations and everyday practice, in addition to the technological environment they were already immersed in within their personal and professional lives.

Ruth spoke with concern at not only the responsibility of her own organization to practice in an ethically-sound manner, but also the possibility of a client using a product purposefully built for them to act in a misguided way: “*We have this end user product that we can provide to our customer who is very wrong and they can build a chat experience using that tool, right? So you can use and build a web form which, without the user's content, lets them get information and track information and use that against the user [...] There's no control over what the business does after we sell it to them.*” Looking at the bigger picture of the worldwide digital landscape, there was commonly shared discomfort as to the possible intentions of larger corporations, with products more far reaching and prevalent in everyday life than those of the average organization. Andy described this concern as a potential trend towards abuse as the power of data increased: “*I think all the organizations, the Googles and Facebooks and Netflix and Uber, all these big companies are building that data so that they're saying they want to serve you better content, more relevant content, but there's a big risk that they may abuse that information and knowledge graph that they have built around each user to promote their business goals over over the user's goals.*” Lucy added to this concern for the future of technology from an explicitly ethics-focused perspective, raising the potential issues that may come with interacting with increasing levels of artificial intelligence (AI): “*With more emerging technology like AI or your own networks and more automation, it's hard to judge if you should trust the decisions of an automated process or an AI or something. It's hard to judge.*” However, Lucy placed

her focus on the humans who ultimately drive the nature of these interactions between automated technology and its users, imploring designers of such systems to be more transparent, for instance: “*to show the results of automation or if this is the results of like human decision. As a designer there are a lot of subtle small use tricks you can do to distinguish if it's machine generated or not.*” While many examples focused on organizational and societal levels of interaction, Oliver highlighted the importance of ‘self-reflection’ of an individual involved in the process of building a design, which we see as a core and novel dimension for ethical practice through expansion of the notion of ‘ethical imagination’ [36, 50]. This self-reflection aims at a deeper understanding of the potential future impacts of these technological decisions, rather than focusing only on addressing user and shareholder goals in an immediate sense, contrasting typical ethical frameworks which typically look backwards and reflect solely on already existing designs [1].

DISCUSSION

Through our analysis of UX practitioners’ engagement with the complexity of design practice, we have identified five dimensions of design practice that shape, indicate and expose ethical awareness. These dimensions are summarized in Table 3, alongside the aspects of ethical awareness and action that might be impacted. These dimensions enrich our knowledge of ethical design complexity, identifying relevant stakeholders, sources of knowledge, and notions of designer responsibility that may positively or negatively impact ethical decision-making. In this section, we will first describe how the five dimensions enrich notions of designer responsibility, indicating opportunities for engagement in ethical awareness in everyday practice. Second, we identify how these dimensions might be meaningfully distributed in organizations through “flows” of competence [28]. Third, we will identify how the fluid nature of ethical awareness points towards the need to develop one’s own ethically-centered design character, with implications for HCI research, practice, and education.

Designer Responsibility

Designer responsibility is a synthetic concept that builds upon the derived five dimensions. In building towards this synthesis, we position designer responsibility as encompassing the individual beliefs held in regards to their own role as a design practitioner, and the degree and nature of their responsibility towards potential outcomes in practice. When discussing their own responsibilities as designers, both in the situated sense of their organization, and in a philosophical view of the role in general, practitioners alluded to phenomena relating to the five dimensions identified in this paper. In this way, the notion of design responsibility served as a connective theme that provided an ethical foundation and inward-focused directionality in relation to the dimensions. Practitioners explicitly discussed both ethically-nuanced responsibilities and duties enforced by their role in the organization, with the aspects relating to ethical awareness and action being presented as commitments they took seriously in their everyday duty to adhere to, as opposed to the notion of them simply existing.

Practitioners appeared to occupy a range of ethical positions with regard to designer responsibility, which we can only

Dimension	Aspects of Ethical Awareness
Positionality of UX in the Enterprise	A designer's interactions were oriented towards advocating for users as an outcome of their ethical commitments. This ethical character of UX practices within the enterprise included a valuation of certain stakeholders (e.g., users) more than others, which is often at odds with the actual power or position of UX designers with respect to other disciplines.
Conflicts and Balancing in Decision Making	Ethical trade-offs were represented through a stated conflict between business goals and a designer's goal to provide the best user experience. In this process, designers engaged in ethically-nuanced ways, as they sought to balance business goals and user goals in ways that were resonant with the designer's character. Ethical argumentation was important for a designer to identify ways to support the end user as well as maintain a positive relationship with other stakeholders.
Identified Design Activities/Practices	Ethically-focused design methods were selected and prioritized as a means by which designers could facilitate a more user-centered approach to design practice. In this process, certain methods and activities (e.g., user research) were positioned as being more capable of increasing awareness of ethical concerns than others.
Self and Stakeholder Education	Lifelong learning was positioned as a means by which designers could build their ethical character over time. Designers felt that educating oneself and stakeholders about ethical complexities and potential repercussions of the design outcomes should be a continuous process, and one that was a shared responsibility.
Futuring	Designers engage in identification of ethical responsibility by looking forward to the potential impacts that the designed outcomes might have on society. By engaging in future-oriented speculation and conversation, designers identified opportunities to perform an ethically-sound design practice that valued future societal impact, rather than only immediate commercial gain.

Table 3. Summary of Ethical Awareness Aspects for every Design Dimension

briefly summarize here as a potential continuum of ethical engagement. Ruth alluded to the responsibility of designers in finding “*alternatives to dark designs*,” advocating for “*almost like a whistle blowing approach for designers*.” Oliver, however, spoke indirectly with a sense of resentment as to this perspective of designer’s bearing the brunt for a product to be built in a ethically-sound manner, stating: “*There’s an attitude in design that we are the holders of morality within, like just in the world, which I think is complete bullshit. There’s nothing about a designer that makes you any more like moral than other people that you work with: product managers, sales people, marketing.*” In terms of responsibility to ensure ethical outcomes in the project process, the sentiment across participants was that though designers create the experience and have intentions about how the product is to be used, it is not solely up to the designer to ensure that the final product is ethically-mindful, but rather a shared responsibility across organizational functions.

Regardless of these tensions, practitioners felt it was their duty to provide the best experience possible to users. Cathy described one scenario: “*I want them to leave our site whether they’ve spent money or not. Feeling like that was a nice experience and I’ll be back.*” Ruth, amongst others, referenced her commitment to educating others to bring about a change in organizational culture which not only educates stakeholders in seeing the benefit of operating in a user-centered and ethically-sound manner, but also in fellow practitioners as to how to go about communicating the need for this to stakeholders in their own organizations in a suitable manner. She emphasized that this collective effort may lead to product owners “*listen[ing] to you when you talk about how not to do dark design.*”

Value relationships, particularly in relation to the end user’s interests, were often the cause of internal tension for practitioners. This tension formed in relation to the human-centeredness of their design philosophy and their responsibility to support the organization from a strategic and economic perspective. For instance, Reece referred to the fact that his organization’s targets for his work were less along the lines of “*how do we optimize the protection of our users*”, and “*more like, how do we save our butts and not get sued.*” Daniel referenced the potential for conscious and subconscious influence by the designer upon a product’s users, stating: “*when you design something, you’re making decisions about how people interact with the external [...] all—you know—design is political for sure.*” Building upon this, Daniel acknowledged his sense of accountability in going beyond building a product that is simply pleasant or usable, but also to consider his own influence on pushing any bias on to the user saying: “*I want to make as few decisions for them as possible. So I don’t want to get into the paternalistic divide.*” This is not to say, however, that the values enforced by an organization towards their UX practitioners necessarily reflect or influence the underlying character and commitment of the individual. Through these insights and our prior research (e.g., [26, 27]), we do not assume that UX designers are always ethical due to their values or organizational tensions, but do wish to position that their responsibility towards designed outcomes should be ethical.

Flows of Ethical Competence

Across the five dimensions of ethical awareness we identified, all practitioners described situational factors within their current and/or previous organizations, or when working with external clients, which they felt had suppressed or enabled their

ability to act ethically in practice. Building upon the work of Gray, Toombs, and Gross [28] that has previously described the ways in which competence flows between organizations and individuals, we are able to describe the ethical character of this “flow.” In particular, we have noted the degree to which an individual’s espoused values were forcibly compromised in practice to more closely align to the values of the organization or shareholder, or were influenced by each individual’s role within an organization and the nature of the organization itself. Those in a management or product strategy role within agency or consultancy firms, for example, appear to have greater authority in motivating or “forcing” what they believe to be the right decision in adherence to their own values (while considering the evident business tradeoffs), whereas those in designer and research roles spoke to more limited degrees of success in advocating for design decisions that were resonant with their values, educating from within. Across our participants’ experiences, there appeared to be an aspirational state regarding what their organization might do better to avoid such tensions in their own espoused vs. in-use values in practice. Using the concept of “ethical flow,” we are able to better describe how ethical mediation [26] might occur and shift over time, and how the dimensions we identified might play a shaping role in these interactions. We contend that the ethical character of these flows demands further investigation—particularly in rapidly changing industry roles (e.g., UX, product management, full stack development)—and studies that describe organizational and interpersonal interactions through the language of flows may further identify areas where methods are needed to support awareness of ethical concern and means of acting upon that concern.

Performing an Ethical Design Character

Through the cases we have presented, it is clear that the nexus of ethical complexity originates and is continually shaped by the ethical character of the design practitioner. This ethical character mediates a complex array of information and structures, including lived experience, professional knowledge, user research findings, organizational realities, and technological limitations. All of these sources of information must be acknowledged and resolved as situated trade-offs in practice, drawing on the ethical features of where the knowledge originated, its near term implications for the design team or end users, and the potential long-term societal consequences. In contrast to this situational ethical design complexity, existing professional codes of ethics are rigid and decontextualized [6], neglecting the connective professional design judgments [38] that are necessary to link design decisions with appropriate consequences, first principles, or personal aspirations. In this regard, while codes of ethics can be useful as a starting point for ethical conversation, they too are mediated as but one source of design knowledge that must be evaluated through the lens of a practitioner’s ethical design character.

The practitioners that we interviewed also expressed a desire to influence their organizational culture from within, through continual education of stakeholders on various levels of company hierarchy. This reveals the need to attend to not only the explicit commitments and philosophy of a design practitioner, but also the imperative to educate or interact with

other organizational stakeholders, facilitating both their awareness of ethical concerns and the ways in which they might productively and explicitly integrate values into their practice.

IMPLICATIONS AND FUTURE WORK

Our findings regarding the integral role of ethical dimensions in design decision-making suggest multiple areas for future work, as well as implications for ethically-focused methods and HCI education. First, while existing value-centered methods supported by individuals from industry and research aid in ethical awareness in design practice, our work provides implications for further work to be carried out in developing new bottom-up methods that allow for more organic interactions with practitioners’ ethical design complexity. These methods may build upon existing approaches, contextualized through the design character of individual practitioners and the organizational realities and *flows* that might inhibit or encourage ethical awareness and action. Second, the range of responses evident in this interview study reveal a range of organizational and design complexity that warrants further, more detailed study. Additional case studies of ethical engagement, alongside larger empirical studies of practitioners in a range of organizational contexts, may aid HCI researchers in identifying other characteristic barriers and opportunities in relation to ethical engagement. Finally, our work also holds substantial implications and opportunities for HCI and UX education, particularly for programs with a greater focus towards design. While codes of ethics provide a useful starting point for doing design work in a value-focused manner, additional efforts should be made to teach tactics for mediating ethical complexities in ways that mirror the complexities of organizational design practice. This additional training would enable students to learn how to articulate what they believe to be right to a diverse set of stakeholders, identify relevant areas of social responsibility and perhaps legal liability, and further describe interactions among their own felt design character and the requirements of stakeholders who may not share their views. Ultimately, this will require going beyond simply espousing a code of ethics or learning about ethics in one isolated learning experience, but in systematically constructing one’s own design character and sense of responsibility that resonates with their larger social identity as a human-centered designer.

CONCLUSION

In this paper, we have used a practice-led approach to identify and describe five dimensions of ethical complexity. Based on the range of dimensions we have identified, we have been able to reveal some of the tensions among practitioners and organizational stakeholders, and the ways in which these tensions might reveal opportunities for new *flows* of ethical awareness and competence in UX practice. This account of ethical design complexity in multiple organizational contexts points towards a set of implications for HCI education, the creation of practice-centered design methods, and the need for further study of ethics from a practitioner perspective.

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