Designing for Shared Values: Exploring Ethical Dilemmas of Conducting Values Inclusive Design Research

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Recent prevalence of values-inclusive design research introduces the potential of conducting research with those whose values conflict with researchers' own values. This is the scenario we have found ourselves in as we conduct values-inclusive participatory design to develop and deploy critical digital literacy education in a rural Appalachian community. We present provocations which outline the ethical concerns we have grappled with in pursuit of conducting fair and responsible research for our participants, indirect stakeholders, and ourselves. Through consideration of these provocations, we have developed a preliminary approach for managing a research relationship with those with whom we disagree which we call Designing for Shared Values. This approach is a conflict-avoidant method for negotiating values in values-inclusive design. It centers around reflexivity as a mechanism to account for one's own values and potential impacts of design research outcomes on indirect stakeholders, while maintaining responsibility to prioritize beneficial outcomes to research participants.

CCS Concepts: • **Human-centered computing** → **HCI theory, concepts and models**; • **Social and professional topics** → *Cultural characteristics.*

Additional Key Words and Phrases: rural HCI; ethics; design

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1 INTRODUCTION

In the Computer Supported Cooperative Work (CSCW) and Human-Computer Interaction (HCI) fields, researchers have provided many valuable frameworks, theoretical considerations, and methodologies for conducting ethical design research, with a particular focus on responsibility to participants [11, 28, 40, 45, 46]. This literature – particularly when paired with that of Participatory Design – makes the need to grant agency and power to participants in the design process clear [36, 52, 73, 77, 83]. It is imperative for conducting ethical research that researchers and designers put the values and needs of participants above their own, especially participant groups that experience marginalization [1, 3, 45, 46, 84]. As such, conversations around values have been centered around how to better support and discover the values of participants, and on strategies for reaching consensus, or peaceful co-existence, between values of participant stakeholder groups [25, 38, 48]. What is left somewhat unsaid is how to engage in ethical Participatory Design research when a subset of the values held by participants are anathema to the values held by the researchers. In

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essence, if we believe in design as a means to impact stakeholder groups both wide and narrow, what is the balance between our responsibilities to our participants, our perceived responsibilities to society, and our responsibility to ourselves? In this paper, we discuss provocations and directions for an approach to Participatory and Value Sensitive Design that recognizes these challenges and seeks to establish a shared subset of values between participants and researchers that will guide the design.

As researchers, we have recently encountered these questions and began to develop approaches during our research within a rural Appalachian community in West Virginia. Appalachia is a geographic region in the eastern United States comprised of 420 counties across 13 states [18]. It has a unique regional culture consisting of largely conservative values [63]. While, due in large part to the approach we have taken, we do not know the specific beliefs of each of our participants and do not intend to cast specific aspersions on individuals or groups of participants, we do know that within this community there exist widely held systems of belief and values that are anathema to our own closely and fiercely held values. As such, we find ourselves conflicted about how much to 1) interrogate and challenge these beliefs and 2) embody the values of our participants in our designs.

Alongside our differences in beliefs, we also find our participant community to embody characteristics and values worthy of respect and valorization. Furthermore, we find it important to affect whatever positive change our research engagements and designs are able to achieve for this community. Our research in this community is heavily influenced by our desire to prioritize benefit to participants over meeting research goals [40]. This community, reflective of trends across much of rural Appalachia, particularly Central Appalachia, experiences economic challenges and lacks educational opportunities to prepare residents for the modern workforce. The goal of our research is to provide technology training to prepare community members to obtain good work - as identified by local schools, employers, and members of the community.

We feel compelled to support rural Appalachia through our research in part due to our personal connection to the area - one of the authors was born and raised in Appalachia - and because of our desire to benefit marginalized populations through our research. Based on historical factors of systematic marginalization, Appalachia has been described as an internal colony, an exploited minority within a larger country [54, 72]. This identification is still visible today, as rural Appalachians face higher rates of poverty, mortality, morbidity, and substance abuse compared with average rates across the United States [19, 20] and lower rates of access to broadband [51], education [23], and health care [20]. In addition to these factors of disenfranchisement, Americans from other regions outside of Appalachia hold harmful stereotypes of residents of Appalachia [21, 86], viewing them as substantially different, with negative connotations [67, 69, 75].

Local cultural trends of distrusting outsiders make Appalachians a difficult population to access. Our personal connection to the community, and the fact that visible aspects of our identity allow us to blend in, gives us the opportunity to conduct beneficial community-based research. However, we wish to be cognizant of the complex intersectional identities of privilege and disenfranchisement that rural Appalachians hold. In some ways they have been systematically marginalized for over a century (evidenced by the 1920 Matewan coal mining massacre [9]), and in other ways they hold beliefs that marginalize others [13, 43, 50, 79]. Appalachian residents have also been subjected to exploitation and abandonment in prior research and industrial interventions [54], specifically recent efforts with similar goals to our own current research [70]. Therefore, we must be cautious of the ways that power is used in this research, both in the ways that we exercise power as researchers and in the ways our participants are afforded power which can be exercised over other, indirect stakeholders.

The provocations we present in this paper are intended to interrogate common assumptions of Participatory Design and Value Sensitive Design in pursuit of an approach that accounts for the nuanced forms of power we have encountered with our participating community. The approach we have identified through consideration of these provocations centers our design research around a commonly held set of values. This is in contrast to more common approaches of agonism or consensus which, respectively, support co-existence of conflicting values or establish consensus on conflicting values through reasoned debate [38, 48]. We draw inspiration from how communities can form around shared common values [55], however we also are pragmatic in recognizing that debating deeply entrenched values that relate to the moral foundations of the different stakeholders can lead to antagonism between stakeholder groups [17]. This is a pragmatic issue because openly addressing these entrenched ideological differences could lead to unproductive researcher/participant conflict that would likely end the research engagement. We believe that focusing on our commonalities is more productive, but recognize that there are more activist approaches. We feel that our primary responsibility is to maintain our commitment to benefit our participant group, not to impose our values on them. A secondary, but important, responsibility is ensuring we do not facilitate negative consequences to indirect parties by designing for values which we do not condone and consider potentially harmful.

In this work we make two contributions, one conceptual and one methodological. The conceptual contribution of this work is a series of provocations that we have wrestled with during this research and which we hope will guide a conversation in the HCI and CSCW communities around ethics, power, and responsibility in design research. The methodological contribution of this work is a process for Participatory Design which we call Designing for Shared Values (DSV). It is a conflict-avoidant approach which has emerged from our consideration of the presented provocations. DSV will be useful for projects where there are conflicting values held by stakeholder groups and researchers, where engaging with these values would cause unproductive conflict that would likely damage the research partnership. Our presentation of the DSV approach is not so much a step-by-step guide as it is a set of guiding principles for conducting research under these conditions. DSV builds off of prior work in its focus on reflexivity [27, 47, 81] and draws from both consensus and agonism as an approach for values negotiation.

2 SETTING AND CONTEXT

In this section, we will first describe the general context and background of rural Appalachia, followed by a description of the specific setting of the community with whom we have a research engagement, and details about the project we are conducting with them. Understanding the general context of rural Appalachia and its culture, and the specific setting of our research is important for framing the provocations or questions that we have encountered. We end with a discussion of our perceived responsibilities to our direct and indirect stakeholders based on the context provided.

2.1 General Context of Rural Appalachia

When conducting research in rural Central Appalachia, one must recognize and account for the historical, social, political, and economic factors that inform the community's values and will subliminally affect myriad aspects of any research project. Understanding this context is important as prior work has highlighted the need for specific cultural considerations to be made when designing solutions to disenfranchisement in Appalachia [29]. Sorting through and understanding these cultural factors is difficult, as Appalachia has a complex, often contested culture [24]. Appalachian culture is often misconstrued as merely an extension of the regional economic, health, mortality, and educational trends, effectively blaming citizens of the region for sustaining the hardships they experience [5, 24, 29, 59, 72, 75, 86]. While poverty is an undeniable reality of rural Appalachia,

the culture of this community is, of course, much richer and more complex than is explained by economic factors alone. Many of the stereotypes that outsiders mislabel as an Appalachian "culture of poverty" is, instead, a reactive response to hardships imposed on the region and its citizens that are beyond their control [5, 24, 29]. Citizens of Appalachian have certain cultural themes and values that they identify with, and many of the stereotypes of the region do not accurately reflect the values inherent to the people of this region. Literature that seeks to establish a set of values, while consciously avoiding construing the culture of a region with a region's coping mechanisms for local challenges, highlights cultural values such as kinship, locality, community pride, privacy, humility, modesty, distrust of outsiders, and isolation [5, 24, 39, 44, 59, 66, 68, 72].

In large part, Appalachian disenfranchisement is rooted in the region's exploitation by the coal mining industry, which has been responsible for many of the negative factors associated with the region today, such as high rates of poverty, health issues, and environmental destruction [53, 72]. Coal mining has provided employment to citizens of the region, but this employment has not been without cost. Parts of Appalachia have been devastated environmentally and economically after coal was depleted [75]. Additionally, the employment coal brought has recently begun to wane, due to automation in the industry and an increased focus on more environmentally sustainable power. There has been a marked decline in coal mining employment in the Appalachian region, which has been cut nearly in half in the span of seven years (from 57,629 jobs in 2012 to 30,254 in 2019 [35]). As traditional means of employment in Appalachia falter, digital inequality experienced in the region has become more detrimental, because it has made it harder for Appalachians to access jobs that require technology skills [49, 72].

To address digital inequality, researchers have previously sought to increase digital literacy [56], but the unique characteristics of the region make specific, cultural considerations necessary for any interventions taking place there [29]. Prior work in Participatory Design has discussed the need to adjust design research methods to be appropriate to the unique experiences and challenges of participant communities [42]. This has included a call for consideration of historical contexts and reflexivity regarding how design methods may negatively impact, or otherwise be inappropriate for a participating community. We feel that we hold a particular responsibility to our participating community to take historical context into account by prioritizing the benefits of research activities to participants over benefits to researchers [40]. This requires us to respect our participants' viewpoints, experiences, and values, as well as to attempt to disrupt traditional researcher-participant power structures through reflexivity towards a more equal relationship [45].

However, there do exist some prevalent values held by a large portion of residents in Appalachia that are problematic. Prior work has highlighted the pervasiveness of racism throughout Appalachia [13, 43, 62, 79]. Other work has noted the marginalization of women and the prevalence of traditional gender roles in this region [50, 61]. Given these factors, we find ourselves in a difficult balance. On the one hand, we do not wish to contribute to harmful stereotypes held by outsiders about residents of Appalachia. On the other hand, we do not wish to amplify harmful stereotypes held by some residents of Appalachia about locally underrepresented groups. While we recognize that these values, of course, are not held by all members of the region, we feel that it would be naive and potentially harmful to indirect stakeholders to enter into a research project without taking these values into consideration.

2.2 Specific Setting of Our Project

Our research project is focused on creating tools that help residents of rural Appalachia gain digital skills and critical digital literacy with the ultimate goal of preparing them for sustainable employment. The primary research site is a rural town in Central Appalachia with a population of less than 1000 people. Our specific setting for this research is representative in many ways of the

general context of rural Appalachia. The area is quite demographically and politically homogeneous, when examining census and voting history records. The community is rural, faces issues with infrastructure, is isolated, and has a strong sense of community [41].

Furthermore, there is markedly less access to technology in comparison with less rural areas. Participants from young to old felt that computers were not for them or that they did not "get along with computers", and rarely had internet access at home. This seemed at least partially due to the low level of computer and internet access that many residents have at their homes. There is also a specific instance in our community of abandonment by researchers and corporations. There is a nearby coal mine that goes in and out of operation in accordance with fluctuations of energy prices. A number of our participants had experiences with the organization Mined Minds, which made big promises about teaching residents to code and getting them well-paying jobs, but did not deliver in the eyes of residents who were impacted, exacerbating feelings of disenfranchisement [70]. There are also examples of the more laudable values outlined in previous literature that we encountered throughout our research engagement. It is clear that there is a strong sense of community, identity, and pride amount the residents.

2.3 Project Goals and Details

The goal of our project is to teach basic computer skills to members of the community through a system, inspired by crowd work platforms, which will pay them for tasks they complete as they learn. The activities of the project center around digital storytelling, which has been shown to be an effective purveyor of digital literacy [14, 15, 60, 71, 74]. Digital storytelling promotes digital literacy through utilization of technology such as voice recorders, video capture, and word processing. It also includes aspects of information literacy - a key component of *critical* digital literacy - by requiring learners to research and convey information [71]. Specifically, our system (1) asks participants to record short stories about local history. Here, they learn how to use a web browser and navigate the internet to different sites. In a subsequent task, they are (2) asked to revise computer-transcribed stories for accuracy. Here, they learn basic Microsoft Work skills, such as text editing and formatting. Later, they are are (3) asked to group and document places/people/concepts of the different stores. Here, participants learn basic Microsoft Excel skills, such as spreadsheet concepts, formatting, and editing. For each of these tasks, participants are paid while learning skills that the community has identified as necessary for good jobs in the area. Therefore, the digital literacy skills that participants learn in this project prepare them for both local employment and potentially digital work.

Another opportunity of digital literacy, particularly through digital storytelling, is support of cross-cultural understanding [16]. We intend to distribute participants' stories between urban and rural communities, with different cultures and demographics, in support of this goal. This will occur, in part, through participants in both settings using our systems. We also have goals of compiling stories from specific communities into a book of local history which could be distributed to and accessed by many people outside of this research over time. Therefore, we must ensure that these stories do not have the potential to offend or inflict trauma upon members of either of our research site's communities, or other future readers, through insensitive language within stories. Specifically, for example, we are aware of the racist history of the rural South and the racial homogeneity of our rural research site. Therefore, we want to make sure we are sensitive and alert to the fact that a story of local history may include insensitive references to instances of racial violence or discrimination, even if only accidentally. This is why we must attempt to think beyond the values and identities of direct stakeholders, participants and researchers, to also consider our responsibility to indirect stakeholders. The approach we present here is how we approach critical

digital literacy in a non-partisan way that will avoid values which could be harmful to indirect stakeholders.

2.4 Our Perceived Responsibilities and Relationship to the Research Setting

We feel that in this paper, for this setting, it is important for us as researchers to outline what we feel our responsibilities are to our participants, and our relationship to the research setting. As we discuss reflexivity and its role in this work, we find it fitting to engage in a reflexive act of considering and disclosing our own positionality. We came to care for this community based on one of the researcher's personal ties to this town and shared background with participants, being from Appalachia. Our backgrounds, identities, and world views shape the ways we conduct research and relate to our participants. Some facets of our identity will allow us to relate to our participants, while some may create distance in the research relationship. [12]. If we were not white and cisgender, our identities may have been enough to preclude us from conducting face-to-face research with our participant group in the first place. These factors of identity allow us the privilege of setting aside opposing values for the sake of conducting beneficial research to our participant group, but this is not a privilege we take lightly. We recognize that the choice we have in how we handle conflicting values is not one that all researchers have.

This research engagement is underpinned by our commitment to prioritize benefit to participants above fulfillment of the researchers' academic agenda [40]. In initial stages of this research, we worked closely with the community to establish what technology skills they needed most. Therefore, we feel confident that participation in this research will provide tangible, necessary skills to community members, with the potential to lead to education and employment opportunities. If we as researchers conduct our research in a way that excludes certain members of the community based on their values – or any other characteristic – it would eliminate their agency to choose whether or not to engage with, and potentially benefit from, our planned interventions, which we find to be unethical. We feel that there are multiple consequences were we to impose our values on participants. Firstly, doing so would alienate our participants and cause conflict between us and the community, which may lead to an insurmountable breakdown of the relationship and study. Additionally, as noted, it would give us unequal power over them in the research relationship. It is important to us to maintain pathways for as many participants to benefit from our research as possible. That said, we clearly acknowledge that we have a personal stake in the success of our research project, and that we ourselves benefit from maintaining this relationship.

In developing a research project to introduce critical digital literacy to a rural Central Appalachian community, it became clear to us that differing values – particularly those manifested in politics – introduced a number of complicated considerations for ourselves and our research project. On the one hand, we feel a strong responsibility to introduce digital skills and literacy to this community in a way that actively discourages the use of the internet for societally damaging purposes, for example, the promotion and proliferation of conspiracies. However, we are obviously unable to control the social internet and the personal echo-chamber that our participants will enter into online. We also do not want to alienate our participant community by teaching critical digital literacy through the lens of a particular political ideology. Instead, we owe it both to our participants and to ourselves to encourage and build on those values that we share. It is then through these shared values that we can forge a path to develop and distribute ethical critical digital literacy education that our participants will find valuable.

3 RELATED METHODS OF VALUES-INCLUSIVE AND ETHICAL DESIGN

In our consideration of the research problem we have described, we have come across many valuable frameworks for values-inclusive and ethical design research which inform our approach. In this

section, we discuss how prior work has engaged with these topics, what aspects of prior work has informed our approach, and why we were unable to solve our current problem with previously established frameworks. We highlight the need for more explicit and continuous researcher reflexivity in values-inclusive design engagements. We also identify and challenge three key assumptions present within prior values negotiation work.

3.1 Reflexivity in Design

Our work is heavily inspired by Value Sensitive Design in its motivation. Value Sensitive Design is based on the principle that we design technologies that we want to live among and, therefore, ethical values belong in the design of these technologies [33]. Where we struggled in applying Value Sensitive Design for our context and purposes was in our inability to accept stakeholder values without critical consideration of the social implications of those values.

Work in HCI and CSCW in recent years has discussed the need for researchers to identify, disclose, and consistently reflect on their positionality relative to their participating community and research topic, a practice called reflexivity [3, 27, 81]. However, prior work in Value Sensitive Design has not engaged deeply with researcher values as has been noted in Timmermans & Mittelstadt's call for a more reflexive approach to Value Sensitive Design [81]. For example, reflexivity and explicit recognition of researcher values have been addressed in some prior work only as a means of ensuring the exclusion of these values from the design [65]. Other work has engaged with reflexivity and researcher positionality in early stages of research as a tool for framing the research and accounting for potential biases, but has not consisted of continued reflexivity throughout multiple areas and stages of the research [12, 76]. Recent work calling for more transparent disclosure of researcher values has not included a larger discussion of the associated consequences, implying the assumption that this disclosure of values will not result in conflict or complication of the research engagement [47].

Alsheikh et al. [1] incorporated increased reflexivity into Value Sensitive Design in a similar context to our own. They developed a hybrid theory of their participants' traditional Islamic values and the researchers' Western feminist values. Through use of this Islamic Feminist theory, they created a design that both upheld aspects of participants' traditional Islamic values and offered unoffensive opportunities for female empowerment. We aim to build upon their work by exercising more explicit reflexivity in our consideration of our own values and those of indirect stakeholders. While Alsheikh et al. imply personal support for Western feminist values, they also state their goal of defamiliarizing their own values so that they can interrogate them as they arise in the design process. Similarly, Avle & Lindtner [3] advocate for the use of reflexivity to critically reflect on and deconstruct biases we may subconsciously hold against cultures that we do not understand. These perspectives are valuable and informative, however we have different goals in our use of reflexivity in this work.

That is, because we do not think that one can become neutral in consideration of one's values, our process takes a different approach to reflexivity. Our primary goal in engaging with reflexivity in DSV centers around identifying our own values as they arise in relation to our project so that we can be mindful of how they influence our designs. While designers do not design for themselves, they do design for the world they wish to live in. Therefore, we must identify and acknowledge what kind of world we may be implicitly advocating for through our design, so that we can investigate how our values may coincide and conflict with those of our participants.

3.2 Negotiating Values

In addition to reflexivity, values negotiation is another aspect of Value Sensitive Design which we expand upon in our work. Two primary schools of thought in the discussion of negotiating

values in Value Sensitive Design and community-based Participatory Design are consensus and agonism [7, 10, 25, 38]. Agonistic approaches support the coexistence of a plurality of values while consensus-based approaches consist of reaching consensus through reasoned debate and consideration [25, 48]. An agonistic approach may be appropriate for values and principles where a mutual respect for differing values can support peaceful coexistence and maintain rich diversity of viewpoints and implementations in a project/design [38, 48]. However, an agonistic approach is not possible for deeply entrenched and controversial values where even simple acknowledgment of differing viewpoints may lead to a rift between stakeholders that could make a project unproductive. Drawing from Coleman's analysis of community conflict [17], by entering the community as people with identities different from the community in question in terms of profession, political ideology, and lifestyle, we introduce the risk of conflict with our community. Coleman also illustrates how quickly disagreement can develop into antagonism. As newcomers to an established community, there is little reason for community members to tolerate conflict and foster productive debate and conflict resolution. Instead, community members are likely to feel that the most direct route back to maintaining harmony within their community is to cut off the outsiders introducing conflict.

One framework for negotiating values which builds upon Value Sensitive Design and which we draw from in our own process is Value Dams and Flows [57]. Value Dams and Flows is, similar to our proposed framework, a method of value inclusion and exclusion which is motivated by consideration of minority voices. We draw most prominently from the "Value Dams" aspect of this method in the exclusion of values which are opposed by *any* stakeholders, rather than just those opposed by the majority. Along with the exclusion of "Value Flows," which is not relevant to our research goals, we divert from this framework in two key ways. Most significantly, we include the designers as a stakeholder group, allowing them to object to and, thus, exclude values from the system just as system users and indirect stakeholders can. The second key difference in our framework is in our call for critical evaluation of the impact of the exclusion or inclusion of a particular value.

We are not the first to encounter the need to look beyond purely consensus-based or agonistic approaches for values negotiation. Bjorgvinsson discusses the need to expand upon traditional means of values negotiation beyond agonistic or consensus-based approaches in community-based Participatory Design [6]. While we have encountered the same need, our work differs in the context within which our participants hold privilege. In Bjorgvinsson's work, privileged parties hold privilege in the context of the work in question. In ours, our participants hold tangential privilege in their personal characteristics, but are marginalized with regards to the context of our work. This means that we wish to include and privilege their voices in our own work to ensure that their needs are met and, potentially, our work can assist in lifting them out of socio-economic marginalization. With that said, our described approach attempts to tackle the issue that Bjorgvinsson also discusses of perpetuating dominant systems of power through the inclusion of privileged voices. We do not wish to perpetuate racial and gender-based systems of privilege through the socio-economic empowerment of our participants, which is why our approach attempts to intentionally and explicitly exclude values which our participants may hold which uphold these systems.

3.3 Assumptions: Participant Identities and Characteristics of Values

Prior work on negotiating values has argued for varying approaches of reaching consensus or supporting agonism based on three key assumptions. First, that participant values should be supported. Second, that the researchers are not among the disagreeing groups. Third, that the values in question are either changeable or acceptable enough by all parties that they can peacefully coexist. These assumptions are due, in part, to previous tendencies of researchers to work with the

least privileged groups who, due to their social disenfranchisement, have a low chance of oppressing or otherwise causing harm to others. In their call for a social justice orientation to interaction design, Dombrowski et al. offer the recommendation to align with oppressed and marginalized groups, both as a way of facilitating empowerment of these participants and as a means of offering researchers the opportunity to reflect on their own privilege and power [27]. Much prior work in HCI and CSCW utilizing Participatory Action Research, Value Sensitive Design, Participatory Design, and other methodologies focused on participant empowerment have worked with highly marginalized groups [2, 7]. That is to say, they have focused on participants with intersectional identities of multiple marginalized qualities. For example, participants have consisted of highly marginalized communities such as indigenous people [12, 37], houseless people [38], refugees [10], and victims of sex trafficking [36]. Participant groups such as these experience marginalization and oppression based on many aspects of identity including class, ability, nation, race, ethnicity, sexuality and gender. This can lead to a common assumption in this research that all participant values and experiences can be supported by the research team without consequence. However, social oppression and marginalization are not binary measures. In our research, we are not working with the most marginalized groups. We instead expect that our participants will have nuanced, intersectional identities comprised of qualities of privilege and marginalization. For example, rural Appalachia is predominantly white and, therefore, residents of this region benefit from white privilege. They are also subjected to classism through offensive stereotypes which paint them as uneducated, incestuous, lazy, and ultimately, responsible for the dire economic conditions of their region [21]. Rural Appalachians deserve the same opportunities as Americans on the other side of the digital divide, regardless of the privilege they hold through other aspects of their experiences and identities.

We still feel the social imperative to "[align] with those who are oppressed or marginalized" (p. 664) as Dombrowski et al. call us to do. However, we do so with the recognition that our participant group is also privileged in some regards. Prior work has so commonly engaged with the least privileged groups that it seems an assumption has arisen that participants are faultless, at least in terms of their use of privilege. Therefore, many prior frameworks do not account for the possibility that participants and researchers could encounter conflicting values or goals. This can be seen in cases where the researchers' perspective is not explicitly accounted for and when the researcher is not among the groups whose values are being incorporated into, or considered as part of, the design process [22, 26, 38, 64]. Similarly, prior work has recognized researchers as among stakeholder groups in design research but has not addressed the potential for conflict between researchers and participants [85]. In other cases, researcher values are mentioned but discredited or excluded from prominent use throughout the study [1, 76].

Prior work has also described the shifting and changing nature of values throughout a project [38] which would not be possible with values that are too deeply entrenched to be negotiated. When agonistic approaches have been taken, at times the specifics of the differing values are not addressed [4] or values are relatively apolitical and noncontroversial [26]. Based on the assumptions described, prior work has primarily focused on how to conduct Participatory and Value Sensitive Design that valorizes and upholds participant cultures and values. While this is also a goal of Designing for Shared Values, a simultaneous goal is to specifically *not* support participant values to which we are morally opposed.

3.4 Related Methods in Other Disciplines

Related to our use case delivering critical digital literacy education in rural Appalachia, fields of education [80] and design education [78] have engaged with reflexivity to inform culturally-sensitive and ethical research. In the design education context, Sonneveld [78] argues that ethics

should be considered as a positive addition to one's work and that they should be developed bottom-up by designers (and participants) rather than top-down from experts. This positive, bottom-up perspective on ethics is intended to mitigate the implicit and unintended incorporation of one's own values that have not been reckoned with overtly. With regards to education work with marginalized participants, Tillman [80] highlights the need for researchers to account for their own experiences - not so that they can stifle those in favor of participant experiences, but so that they can be used to inform the research. These approaches of reflexivity in education research can be applied to HCI and CSCW contexts to support goals of cultural sensitivity and ethics in these domains.

Similar ethical questions to what we explore here have also been discussed in other social science contexts, particularly among ethnographers [8, 30, 31]. In one pertinent example, Fine presents the approach of "skeptical ethnography" through which the ethnographer attempts to conduct their research in a detached way that does not take a side, for or against, participants [31]. This approach responds to many concerns that we have encountered and raise here with regards to our own work - how can one preserve trust while critically observing participants? How prominent of a role does social justice and activism play in our work? What is, and should be, the power dynamic between researchers and participants? Though there are many commonalities, the design context of our work presents different challenges than ethnography. We must acknowledge the ways in which design forces us to advocate for our participants and ourselves. The intended design outcome of our work must take the side of our participants - it must be designed for them. In a way, the design will also be for us, the designers. While we will not design for ourselves, we will design for a world we want to live in. The relationship between designers and users, as well as the power inherent to design, means that we must take these characteristics of design into consideration as we address the questions raised above and in the following section.

4 PROVOCATIONS FOR DESIGN RESEARCH FOR CONFLICTING VALUES

Drawing from Brown et al.'s "Five Provocations for Ethical HCI Research," [11] in this section, we present a series of provocations that represent the issues that we have encountered and debated among ourselves during this research engagement. We formulated these provocations, in accordance with guidelines from Brown et al., as potentially controversial "tools for critical thinking" [11] (p. 852). For each of these provocations, we outline our thoughts. The questions posed here are not all reactive to direct experience with our participants, but are representative of our process for framing our research engagement and reflecting on our position and responsibilities.

To whom are we as designers responsible?

Throughout our research project, we have found ourselves debating to whom we were responsible. We felt that our clearest and strongest responsibility was to our participants. This responsibility is also the most widely recognized in HCI and CSCW literature. We felt that the primary facets of this responsibility were respecting our participants, providing value to them, and minimizing any harm. However, we felt another clear responsibility was to our research team - their emotional health and safety is important after all. Although it is not commonly accounted for, we support the assertion of prior work that researcher well-being should be considered and sustained throughout potentially emotionally laborious research [58].

A less clear responsibility that we felt, and the responsibility that most clearly inspired this work, was to the wider group of stakeholders on the periphery or outside of our research. Considerations for stakeholders that are indirectly impacted by decisions have been framed as narrow and wide stakeholders in corporate governance [32]. We define the wider group of stakeholders as ones who are not directly involved in the use of the system in this specific community and range from future users of our system from other communities, tangential members of the community that

are impacted by stories gathered on the system, someone who reads the resulting book, or even someone who is impacted by a participant's use of the digital skills they obtain. If we create systems that align and give power to the normative values of the surrounding community, will this harm any members of the community that do not ascribe to these norms? We are primarily concerned about this in two regards: first, how will collecting and codifying the stories crystallize normative values and further alienate some community members as not belonging; second, how do we ensure that the system and the stories that it collects, reflect the type of world both participants and researchers want to live in. How do we as designers balance the responsibilities to our participants, wider stakeholders, and ourselves?

Should researchers conduct participatory research with participants with whom they have conflicting values?
This led us to question whether or not it is ethical to conduct participatory research with any participants with whom we have strongly conflicting values. Is it ethical to work with participants/contexts without questioning or evaluating the values that they hold and risk supporting values that one finds problematic? Alternatively, is it ethical to work only with those with whom one comprehensively morally aligns? In considering these questions, we find that our answer consists of both general beliefs we hold about the nature and value of research and specific factors of this community and research engagement.

First, we will discuss the general beliefs we hold about research that have led us to the answer that it *is* ethical to conduct research in this way despite our disagreements with this participant community. Only engaging with those with whom one is ideologically aligned may create an echo chamber effect in research that we find antithetical to the pursuit of intellectual progress. If we do believe that the manner in which we are conducting our research will provide value to participants, then only working with people we agree with means that we are picking and choosing who benefits from our research based on our own personal biases. We find this to be more ethically problematic than conducting research with those who may have opposing moral values, as long as those values are accounted for in some way.

Specifically regarding this research, we believe that our ability to access, relate to, and still critically evaluate this community has led to a good ethical balance. This community is difficult to access as both conservative groups and Appalachians generally distrust outsiders - particularly academics [8, 75]. We, based on our common identities and backgrounds to our participants, are in a position to access this group. We are also dissimilar enough from them in terms of our values and beliefs that we are able to identify and challenge participant values which we find to be problematic. We believe that this balance of similarity and understanding, as well as opposition and questioning, helps to make an ethical participatory research engagement possible.

Are there instances when researchers' values should filter participant values in design research?
There are several questions intertwined within this provocation. First, are there certain scenarios or values where it is appropriate or ethical for a researchers' values to override participant values? Should the researcher imbue themselves with this power? We feel that there is a subset of participant values that are appropriate, and even necessary, for researchers' values to impact, if not override, in a design. This is in the case of when these values are potentially oppressive to others. In our case, we are encountering this in designing for groups who have a subset of values that may negatively impact indirect stakeholder groups. For example, if we encounter racially biased rhetoric in stories recorded through our system, we would find it appropriate to include filtering in our system that would identify and disallow racist terms. This is in service of our own values of racial justice and equality, as well as consideration of indirect stakeholders who may encounter this story and be negatively impacted. Therefore, the researcher/designer should not necessarily imbue themselves

with the power to override participants' values based solely on their own values, but should exercise their power to minimize or eliminate the negative impacts to indirect stakeholder groups who are marginalized by existing structures of power. We acknowledge that this is still at the discretion and judgment of the researcher, but we believe that this distinction is important.

How does filtering participant values impact the balance of power between participants and researchers?
If we as researchers do choose to filter the values of participants in our designs, what does this mean for the balance of power? We would argue that this filtering likely already happens in design research, and it is necessary to be more reflective about the values one is amplifying or dampening. However, in intentionally engaging with filtering, there are a few key aspects to consider.

First, how much should we as researchers disclose about the values we filter in our design? We contend that this disclosure should happen in a non-confrontational way in the design. That is, if we decide that certain topics (e.g., anti-vaccination stories) are inappropriate for our system and we make specific design decisions to support this. These decisions should be accountable in some way so that, if a story is rejected, users are given an account as to why it happened.

Second, if we as researchers are making considerations for how we anticipate non-participant stakeholder groups will be impacted, we must explicitly give participants the same opportunity to maintain balance. That is, when we as researchers exercise a power, we need to ensure that participants are able to exercise a similar power. This also can be done in a non-confrontational way, with prompts during design practices and engagements about how they imagine the design will impact others. Prompts for our story recording system might include who they imagine will hear/read their story, who they would not want to hear/read their story and why, and how they imagine this story might be interpreted in the future or by a reader from a different place.

Are we presuming values in a stereotypical way?
We believe that this approach is more about balancing realistic risks. We are not making specific assumptions about individual participants, but we are responding to both academic data gathered about attitudes/values and our own personal experiences conducting the research. As we establish a relationship with this community, we feel that we must account for scholarly and experiential evidence regarding potentially harmful views lest we inadvertently support these views with resulting harm to others. When designing a system that is meant to empower an entire community (and not just our participant group), it seems naive to us to assume that these values will not be expressed through that system. We believe we are being cautious of values, but are explicitly, through our approach, not exclusionary of any people that may hold those values. We believe that this approach will morph over time as our relationship develops.

Is it necessary to worry about/prepare for conflict on topics that are peripheral to the research topic?
In our view, social justice topics are, at the very least, present in the majority of socio-technical systems. Therefore, engagement with social justice and the dismantling of existing power structures should be a fundamental design consideration of any social system. That said, our system ostensibly does not deal with social justice, as it is a set of tools meant to increase digital skills and critical digital literacy. So what are the actual risks we are trying to avoid? In our research we have two risks that we are trying to avoid. In terms of the research, we are wrestling with how to teach critical digital literacy in non-exclusionary ways that create more educated and engaged digital citizens. In terms of our design, we are gathering community stories and these stories will naturally be a reflection of the values of participants. We feel that there is a risk for further marginalization of marginalized groups if we amplify the norms of the community without taking into account how those norms relate to existing structures of power and injustice. Furthermore, we

feel a responsibility to anticipate appropriations of the system. If the stories we gather proliferate conspiracies, as happens on other social computing systems, then this is a negative impact that we might have foreseen and avoided. We find it necessary to consistently reflect on and engage with how the work that one does upholds existing systems of power and systemic injustice. In our reflection on this with relation to this context, we have found the potential to reduce (or at least, not perpetuate) systems of injustice through discouragement/avoidance of participant values which uphold values that align with injustice.

Is it ethical to engage in avoidance of further social oppression in place of more explicit social justice outcomes?

One question we have grappled with throughout this process is whether or not this conflict-avoidance posture is simply protecting our own self-interest. Are we trying to just maintain access to this community, or are we conducting this research in a pragmatic, ethical manner? Rural Appalachians are disadvantaged by regional and historical factors of disenfranchisement and the goal of our research is to address some of those factors, which fall within our domain of expertise, to help this population. This participating community and the population they represent are our top priority and our primary stakeholders. Our primary goal is to provide them with value in the form of critical digital literacy. They are marginalized on different grounds than other populations who are at the center of social justice initiatives but that doesn't mean they are not still marginalized, and not still worthy of support. Our *primary* goal in this research is not to make them more culturally accepting or to eliminate problematic ideologies and behaviors in this region. If we can include that as a secondary goal, or at the very least, not actively support the perpetuation of problematic qualities and ideas, that is good enough. We will do as much as we can towards this secondary goal while still attaining our primary goal. Right now, considering we are very early into the research engagement, our primary goal needs to take a strong leading role as we do not yet have assurance that goal will be successful.

Drawing from the idea of feminist care ethics [82], we also wish to avoid conflict over entrenched values with our participants in pursuit of a more empathetic relationship. We believe an approach of identifying and focusing on commonalities, the overlap in our values systems, illuminates a path for a caring, empathetic relationship with those whom we care for through our research, and whom we may otherwise have difficulty relating to. Engaging in a long-term research relationship with our participants (we have been working with this community for two years so far, albeit with less engagement than intended due to halts in participant research due to the pandemic) requires that our relationship is authentic, compassionate, caring, and empathetic. We do not see a productive way to build a relationship with those characteristics if we also engage in confrontation over entrenched, conflicting values.

We see our posture of conflict avoidance less as an end goal, and more a temporary measure while we build trust. As we form new communities with our participant group and/or become more deeply embedded in their community, conflict has less of a chance to result in antagonism [17]. Therefore, we hope to engage more in conflict, as well as in goals of cross-cultural understanding and progressive social justice, as we establish trust in the community. This trust does not come only as a result of time, but also of results delivered. Therefore, we do not think it will be productive to engage with conflict until project outcomes of opportunities as a result of critical digital literacy have been delivered.

5 PROPOSING TO DESIGN FOR SHARED VALUES

To conduct participatory and values-inclusive design that upholds commitments to our participant group as well as our own moral values, we propose the approach of Designing for Shared Values.

Designing for Shared Values consists of (1) recognition of participant and researcher values, (2) consideration of impacts on indirect stakeholders, (3) evaluation of points of commonality between values, and (4) evaluation of depth of values. This process concludes with a decision to exclude from design opposing entrenched values, include in design shared values, or address differences in more flexibly held opposing values.

5.1 What Are "Shared Values"?

Before we can consider how to negotiate values between differing stakeholders, we must define what we mean by values. We also must identify to what degree these values must be enacted similarly to be considered shared between groups. Values here are considered not as the broader term applied to core human moral values, but more specifically to individual experiences. In their presentation of Value Sensitive Design, Friedman, Kahn, and Borning described values according to dictionary definition as "what a person or group of people consider important in life" [34] (p. 2). They go on to elaborate that this definition allows for a variety of values, ranging along a spectrum of loftiness to mundanity, to be considered in design. They add to this that, specifically, values of ethical import should be considered when implementing Value Sensitive Design, and that values must not be conflated with fact. This is the definition of values that we will choose to abide by here.

The enactment of values, rather than the perception or neutral meaning of a given value, will establish whether we consider those values to be shared or not. In the case of *truth* as a value, it is nearly universally agreed that it is important to communicate truthful information. However, in practice, different groups rely on different sources of information and can have contradictory beliefs about what is true, and what makes a source trustworthy or valid. In this case, therefore, it is not productive that we share the value of truth *in name* alone, as *in practice* it is not a constructively held common belief. The reality of the situation between two groups such as this is that broaching the topic of truth and sources of truthful information would likely lead to conflict. Therefore, we would only be able to speak about the value of truth in broad terms, rather than to the full extent to which we would need to discuss it for it to be incorporated into a design.

An important characteristic of this framework, drawing from Value Dams and Flows [57], is the exclusion of all values that either group opposes. The exclusion, therefore, of one group's value does not result in the inclusion of that of the opposing side. Instead that particular value dimension will be absent from the design. This assists in ensuring that this framework does not become a means of prioritizing researchers' personal values. Instead, it supports goals of equality of voice between participants and researchers in the research engagement, characteristic of Participatory Design.

5.2 Case Study Demonstrating DSV

After a class we led on computer skills development, some participants stayed and started probing some of our political beliefs. We were not coy about our differences with their opinions and the conversation turned to public/private healthcare. We expressed our opinions in support of public healthcare, not in connection with any political ideology, but our own life experience. The participants who opened this conversation responded to share their own, conflicting beliefs and their own rationale. We came to some level of agreement about some core values, such as the accessibility of healthcare, while also understanding our differences, such as approaching how healthcare should be funded. This conversation would not have been as constructive to have if it had not come up in a natural fashion.

Considering our described approach through this example, we began with an understanding and consideration of participant and researcher values. In this case, values expressed were related to healthcare. Putting things simply, researcher values were in support of public healthcare while

participant values were in support of private healthcare. At this point, we consider how indirect stakeholders might be impacted by the inclusion of either side's values in the system. In this case, in the personal, apolitical way this topic was discussed, there is a low chance of harmful impacts on indirect stakeholders. Commonality in our values is in our shared belief that no one should come to harm because they cannot access medical treatment. In the context of this discussion, these values were relatively shallow. We do not feel so deeply invested in our support of public healthcare that we would find it personally offensive if someone were to disagree. We were also at a point in our relationship with our participants that some gentle disagreement was possible without creating a rift in our relationship. Therefore, in this case, we find that our shared value of accessible healthcare is acceptable to include in our research and design as is relevant.

Over the course of our research engagement, we have found that some participants' perceptions of us have changed and we have had open discussions on our different beliefs and experiences. This has helped to establish that, despite our differences, we can still collaborate. While we do not pretend that anyone changed their opinion or belief system, we do not think that this same conversation would have been possible at the start of the engagement. Depth of values have a temporal dimension to them - as relationships deepen, things that were once off limits become accessible because disagreement on increasingly entrenched beliefs is no longer a defining quality of one's opinion of another. This is an example of the type of value we are able to productively approach with our participants now. In the future, as our relationship continues to deepen, we hope and expect that the values we address will deepen as well. However, we also expect that there are some values which are so closely held by participants or researchers that they will never be able to be productively debated. This is also acceptable and, as these topics arise, they will be excluded fully from designs.

6 DISCUSSION

The approach we have discussed is one way of including values in design research when those values are significantly different, and even directly oppositional, between researchers and participants. We feel that this area is both under-discussed and increasingly important. Our development of this approach arose from our desire to conduct research with a group who, due to our common identity, was accessible to us, and whom we care for, but with whom we have conflicting values.

We believe there is benefit in conducting research with this group because the critical lens afforded through our differences, precludes us from designing in an echo chamber. In addition to preventing values which we oppose from being incorporated into a design, by encouraging our participants to reject any of our values to which they are opposed, we can critically reflect on our differences and which aspects of our values system other cultures may find problematic. Through this approach that we have found a way to maintain the trust that our similarities afford us, without forcing anyone to support values that are anathema to them.

Our approach also emerged from our belief in Friedman's original justification for the introduction of Value Sensitive Design: ethical values belong in technology design [33]. As Friedman says, we live with these technologies, so we should create things that we can believe in. In research, we have the opportunity to develop a personal connection to our designs. Our collaborators are not just our research teams, but our participants and indirect stakeholders who all must have voice or consideration in the technologies with which they live. Designing for Shared Values is our attempt at ensuring all voices are given weight. Our hope is that designing technologies in a way that we can all support, will assist in highlighting our similarities to promote greater understanding in the long term. By taking a positive approach to values negotiation, that is, focusing on designing for values about which all stakeholders are in agreement, we hope to foster a productive relationship with beneficial outcomes for all involved. At a time when political polarization in the United States

feels greater than it has been in recent memory, finding common ground can seem unattainable. Indeed, avoidance of difference is not our end goal, but we do believe it is a necessary step if we want to collaborate with those with whom we disagree. Once our similarities are deeply understood and believed by everyone involved, we may have fostered a more productive starting point from which our differences can be addressed and negotiated.

7 CONCLUSION

To conclude, we wish to echo calls of prior work for our community to reflect on how our work relates to, upholds, and dismantles existing systems of power and oppression [27]. We wish to build upon this imperative by reiterating the need for researchers to critically interrogate the impacts of their work on vulnerable indirect stakeholders. We also encourage researchers not to shy away from working with those who experience disenfranchisement, regardless of a potential mismatch in ideological alignment. We have discussed one possible approach, in the form of Designing for Shared Values, which can facilitate the enactment of these goals in ongoing and future work.

We also hope this paper acts as a public display of vulnerability and uncertainty in the face of ethically complex research which suggests a direction for more open, honest deliberation of increasingly complex social considerations in the field of CSCW. Researchers consistently make judgment calls in ethically gray research scenarios. We posit that, while it may be uncomfortable to publicly disclose those decisions, benefits to the field outweigh personal drawbacks. We recognize that there may not be a correct call to make regarding moral ethics of community research, but we feel this makes these issues all the more worthy of scrutiny. We hope we can inspire further discussion of the provocations we have set forth in pursuit of deeper and more nuanced understandings of how to handle personal, moral, and ethical conflict in CSCW research.

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