Disentangling participatory ICT design in socioeconomic development

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ABSTRACT

Participatory design in socioeconomic development is an invariably political activity fraught with both political as well as ethical entanglements. ICT for development (ICTD) - often involved in contexts of great inequality and heteogeneity - places these in especially sharp relief. This paper draws attention to these entanglements as well as what they mean for the role and practice of designer-researchers practicing PD. We then draw upon our experiences in an active PD project to highlight approaches that serve as a partial response to these entanglements. These presents both limitations as well as orientations for our role as designer-researchers in engaging with and organising PD work in ICTD - providing a starting point for answering the question "who participates with whom in what and why?"

CCS CONCEPTS

- **Human-centered computing** → **Participatory design**;

KEYWORDS

Participatory Design, ICT for development, mutual learning, politics, ethics, power, values

Participatory design (PD) in development is an inherently political activity. It is political because it involves the engagement with and potential redistribution of power within social contexts. If the process of design is inherently political, it follows that the designer becomes an inherently political actor.

The designer needs, not only to abide by broadly shared institutional ethical standards, but should also work from the standpoint of their own political positions. The implication of the combination of institutional ethics and personal politics is that PD practice involves a series of political commitments. These commitments not only guide ethical research and design practice in context but also determine the participatory designer's engagement with and relationship to the development context. This holds regardless of whether the PD is explicitly conducted as research or not, so henceforth we will take designer to include the role of researcher.

Identifying the designer as a political actor means recognising that they are provided with specific power formed through the intersection of their role in the process of change and their personal positionality. It implies limits on how the designer should act and with whom they can ethically engage. These limits are formed by general rules of ethical conduct, funder and institutional expectations, personal political stances as well as the positionality of the designer in relation to other actors.

In this paper, we explore these questions in the context of PD of Information and Communications Technologies (ICTs) for development (ICTD). We begin with a slightly modified version of a classic PD question - **who participates with whom in what and why?** We use an ongoing project in West Bengal, India, to illustrate how key ethical and political principles in PD can inform choices in response to this question in the context of socio-economic development interventions. This case study (like much work in ICTD) throws issues of inequality and difference into very sharp relief, to reveal useful insights about how PD practitioners might negotiate this question when we engage in human development initiatives, whether those are framed as (international) ICTD, or as social innovation with communities in our home countries.

1 ENTANGLING PD IN PARTICIPATORY DEVELOPMENT

Given the overlap of values, concerns and approaches between PD and participatory approaches in development, it is no surprise that PD is an often-chosen approach for ICTD projects [28]. However, adopting participatory approaches to development or design requires not only configuring a successful design process but also taking ethical and political stands [13].

Design in general and PD in particular is inherently interventionist. It is a form of action research which at the very

least influences the designer and the participants [39]. Intervening in the lives of vulnerable populations means engaging with questions of what direct benefit the project can bring, reciprocity for time provided and differences in expectations between designers and users [1, 13]. Furthermore, compared to more traditional applications of PD in workplace settings, and PD in social innovation in the Global North, PD in socioeconomic development conducted in the Global South often involves even greater heterogeneity in terms of technical capacity, cultural backgrounds, individual motivations and, of course, power.

Important choices include who participates, in what they participate, how they are invited to participate and why they are asked to participate [7, 14]. Answering these questions involves negotiating distribution of power between different actors in the processes [7, 10]. Hence, in answering these questions the ethical and political standpoints of stakeholders become translated into practice.

In this section we explore some of the general and specific challenges that the domain of socioeconomic development brings to PD. We identify some of the limitations that these negotiations imply and discuss some established approaches to addressing these limitations.

1.1 Who participates...

The question of who participates is central to PD, but has become an increasingly complex issue as "the user" is no longer a well-defined entity and multiple diverse stakeholders with drastically different needs and interests must be considered [23]. For PD in development this translates into a range of concerns.

Practical concerns include intended users having limited pre-existing experience with technology or access to local technical infrastructure [28, 32, 36]. Engaging with unfamiliar technologies or traveling far to an unfamiliar setting can limit the ability to make one's voice heard and take part in decision making [11]. Limited experience of participation in general can require periods of gradual introduction to the forms and benefits of participatory processes [36]. Even the very notion of democratic participation may fit poorly in cultures with strongly hierarchical forms of social organisation, requiring appropriate accommodations and adjustments [65]. Resource-constrained stakeholders may have limited time to acquire needed levels of experience or understanding, which in turn can result in extractive or instrumental forms of participation [26]. It also raises ethical questions with regards to use of vulnerable volunteers' time and potential financial reimbursement [53].

Informed consent to participate in PD activities in development comes with unique challenges [55]. There may be difficulties communicating both the meaning, goals and implications of the activity [15] - especially as it is dynamically evolving. Adequate assessment of potential risk or harm can be difficult or impossible [13]. Strong community orientations or patriarchal norms may mean that consent needs to involve the family or community [55].

In response, it may be possible to choose participating communities carefully based on their pre-existing knowledge, situation and geographic location [1, 13]. This, however, could mean further exclusion of already marginalised groups - strengthening the position and access to resources of those who are already privileged. Notions of designing for and with a specific "community" may overlook the complexities of inclusion within those communities [22]. A typical example of this is the exclusion of women's voices.

Aiming to challenge disrupt, circumvent or destabilise power structures may be considered a goal of some PD activities, but could risk detrimental impacts for the design process and /or for the community itself [50, 51]. Even where participants act with an informed intention to change power structures, mis-matched expectations may lead to a design process that places participants at unacceptable risk. For example, a participant might take risks to participate in a project they assume will provide long-term support or benefits, while the designer acts under financial and time constraints that make long-term engagement difficult or impossible.

1.2 ... with whom ...

In the initial framing of "who participates with whom in what?", Muller and Kuhn [45] highlight whether it is the designer who participates in the world of the user or vice-versa. Inquiring into "with whom" in development contexts requires interrogating the power relations involved in the meeting of the designers' and users' social worlds.

A common pattern for this type of work involves a designer based in the Global North conducting work in the Global South [16]. This often means that the project starts from the perspective of the designer seeking to enter the social world of the user. However, there are limits to what degree a designer can and is willing to enter the social world of - for example - a rural farmer in India. Symmetrically there are ethical and practical limits to the degree to which we can ask users to enter the social world of the designer. That the designer often brings or controls funding for the project further influences this - if nothing else through determinations of who travels to meet whom.

The intersecting privileges that shape power relations between designer and other stakeholders involve - but are not limited to - disposable income, gender, education, class, race, caste and national origin. Many would argue that these differences in power can serve as an impediment for the entire project of participation in both design and development [26, 35]. It is unavoidable that researchers originating from or based in universities in the Global North will be associated with international development programmes that bring material resources - participants may thus seek to live up to perceived expectations of engagement or conduct [26, 29].

Researchers operating in their own country or region of origin are not excluded from these differences in power - especially considering the greater socioeconomic inequalities of many countries in the South. A university-based researcher

will, through disposable income, education, class, caste and other factors, possess a great deal of power in relation to economically disadvantaged participants.

An unfortunate effect of geographical and socioeconomic divides is "bungee" research - where researchers spends short, intensive periods in the user's context after which they return to a university in a different location or even a different country [16]. This can result in limited understanding, ensuing design-reality gaps and lack of any sustainable benefits for the participants [18, 27, 42].

1.3   . . . in what . . .

Common framings for what it is we engage with when conducting ICTD consider it as being a process by which technology is either created for or adapted to the needs of or conditions faced by marginalised users. This can include adapting technology to low literacy [12, 31], limited network and electricity access [47] or to make up for gaps in government services [21]. Products and services have been designed to cater to specific development outcomes such as improved health or increased incomes as well as to provide for general information access (e.g. telecentres). However, by and large these initiatives have either not managed to achieve uptake and use, reach their intended development goals or move beyond initial pilot phases [18]. Where the initiative is successful, lack of local technical skills and/or resources may mean that the community becomes dependent on outside resources to maintain it. The introduction and subsequent withdrawal of technical resources and new ways of interacting can cause considerable pain for already vulnerable communities [62]. Other source of failure includes aforementioned bungee-research and ensuing design-reality gaps [16, 27, 42]; adoption of technology-focused positions [59]; ignoring the community's ability to absorb and make use of technology; or insufficient attention to political, social and economic dynamics which may stand in the way of intended impacts [18].

One response is to emphasise the way technologies in development are socially embedded [3]. Accordingly, ICTD should seek to build on and expand infrastructures and capacities to embed ICTs in local practice [3, 58]. This aligns with the departure from design practice as "creation of discrete devices" toward "viewing systems development as entry into the networks of working relations. . . that make technical systems possible" [56]. Accordingly, it places ICTD work as a form of infrastructuring [33], especially with concerns to how to sustain activities and communities beyond design interventions [38]. Following this approach, the design process is a continuous project of making current relations and mediating infrastructures visible and amenable to change [40], as well developing and establishing networks of relationships and interactions between participants to affect such change [17]. Thus, the goal becomes to create "artful integrations" that structure future social relations built on top of pre-existing sociotechnical assemblies [56].

Adopting this view of design as a relational, sociotechnical activity means recognising that it is embedded in power relations on both micro and macro scales. Considering the historical antecedents of development, there is a need to adopt a critical understanding of the enterprise of design [60]. If not, disempowering power structures may be re-enacted, embedded in both project and outcomes, or even strengthened.

On a micro scale this includes recognition of positionality of stakeholders discussed in the preceding sections. It also involves, critically reviewing orientations, methods and tools used. Sociocultural preferences of communication, such as those emphasising orality, may require re-evaluation of both design and data gathering methods [4, 65]. Beyond method, epistemological and ontological assumptions of researchers or designers must be questioned and alternate modes of organising knowledge should be examined [61, 66, 67].

On a macro scale this means placing the design project in relation to the political and economic conditions within which it takes place [2, 5, 24]. Recognising that much PD in development is based in the Global South, projects are embedded within a history of colonialism as well as contemporary economic movements such as globalization and neoliberalism [9, 20, 41, 48]. Postcolonial computing as well as recent calls for a design for/by the Global South provide a starting point for engagement with these larger scale issues [19, 20, 29, 48].

1.4   . . . and why?

Buskens [8] argues that *intent* is an important, but often neglected, aspect of system design and research practice. Without explicit recognition of intent, underlying motivations and rationales behind an intervention may be obscured, subverted or left unquestioned.

The more explicit intent in PD for socioeconomic development is typically to achieve some form of positive change for participants. This can be limited to ensuring that they have a say in decisions about technology which affects them, but often further aims to alleviate problems or provide for the needs of people otherwise deprived. In development, this raises the difficult question of what we consider "development" to be. Increasingly the Capability Approach has become an important development theory within ICTD [37, 46, 63, 68]. It is a normative approach which argues that the goal of development should be to increase the freedoms (or capabilities) individuals have to achieve ways of doing or being that they have reason to value [54]. Freedom or *choice* then becomes the most important end goal of any development activity [52]. Sen [54] argues that it should be a process of social negotiation that identifies which capabilities individuals and communities want to acquire. It foregrounds the necessity for agency and autonomy of participants in deciding which capabilities to develop as well as which of these capabilities are realised [52]. Adopting this approach requires an engagement with the values of participants, as well as an active project of incorporating them in the intervention. It asks of the designer to interrogate outside assumptions of what values or benefits should be promoted, as well as

challenging ways in which technology may aid in promoting contradictory values [24, 25].

It is equally necessary to inquire into the intent of the designer. The designer will - often strongly - influence the direction of the project through their values and political standpoints [6, 7]. They will also seek to create benefits for themselves as well as other external stakeholders - including contributions to wider society, responsibilities towards funders and personal professional aims. Open declaration of these interests will help to make explicit potential conflicts between the priorities, intentions and values of different stakeholders. This implies moving beyond considering the PD practitioner as a facilitator [17, 39]. It means actively resisting the urge to make the designer and their political standpoints and positions invisible in the design process [39, 56]. Thus, a more appropriate way to view the designer's role might be as a form of activism. This foregrounds their own political position and choices such as who they work with, what contexts they engage with and what impact they seek.

2 CASE STUDY

To illustrate some of the negotiations and choices discussed in the previous section, we relate their unfolding within an active participatory design project. The project is being undertaken in collaboration with an organisation based in West Bengal, India and aims to explore the design of ICTs to support sustainable agricultural development.

The organisation has been active across the region for the past three decades. Their focus lies on "improving food and livelihood security of the rural poor through scientific management of natural resources and community based initiatives on the basis of principles and actions, that are environment friendly, economically appropriate, socially just and developed by mutual cooperation". Their emphasis on ecologically sustainable agriculture means that they primarily support organic and agroecological farming practice. They support small, marginal and resource poor farmers, through different forms of intervention including seed sharing, skills development and land shaping activities.

The data underlying the discussion of the case is primarily based on field journals, pictures and recordings collected throughout the engagement with the organisation. The field journals were kept not only to document design activities and outcomes, but importantly also as a way of reflecting on the choices made throughout the research and design project. These reflections were regularly debated between the two authors and notes from and recordings of such discussions were also used to inform this paper. In presenting the case, our focus is on the way that participation has unfolded thus far, rather than on design outcomes or interventions. In this, we follow authors such as Light and Akama [39] who have sought to shed light on PD as a practice by focusing on the actions of the PD practitioner.

Because of our intention to make visible the researcher in these negotiations, we have henceforth adopted the first-person singular for the remainder of the description of the case, referring to the first author who conducted the work in West Bengal. This serves as a way to foreground the researcher for readers of this paper, and as an attempt to avoid the tendency to make the researcher invisible in accounts of research process and results.

2.1 Background

The project in this case originates from a long-term engagement with the organisation, which among other things included my master thesis research project. In that project which was undertaken in 2014, the organisation and I began experimenting with design and use of technology to support their beneficiaries. In 2015, I applied for and secured a scholarship from a European university to continue research with the organisation as part of my PhD.

I originate from Sweden and I am of European descent. I have, however, been living and working across India for many years, primarily in the region were the organisation is based (West Bengal). Through living there for a longer period time, as well as establishing family in the region, I have acquired both language skills as well as a level of local cultural competence. I came to work with the organisation through their development work - rather than through technology or design - but my background in computer science and software development led me and the organisation to conduct technology design activities. Even though that project was the organisation's first, limited, experience of participatory design, they have a participatory orientation towards their development work - primarily through approaches such as Participatory Action Research (PAR).

Before the PhD project began, the terms of access as well as basic framing of the research project had been negotiated with the organisation, and they had provided endorsement for me undertaking it. This discussion took place even before I had applied to the PhD programme. This framing was developed and proposed to the organisation by me based on our previous work. It was deliberately broad in terms of what kind of technology based engagement would be undertaken but placed the work as participatory design oriented action research. Involved in framing the research were primarily the general secretary of the organisation and one of the team leaders, whom I had previously worked with. While the executive committee of the organisation had to agree to support the project, initial framings did not include any other members of the organisation.

It is important to recognise that the history of association between myself and the organisation stems from a very specific personal intent to contribute to sustainability. My personal standpoint of what that means served as the motivation for the partnership as well as a source of agreement and mutual understanding between myself and the organisation. Additionally, their commitment to participatory development was important in the initial decision to begin working with them.

The work with the organisation began in earnest in late 2015, early 2016. At this point initial semi-structured interviews were held with senior members of the organisation to develop an understanding of the present organisational context and challenges within which to place the work. Interviews were undertaken with the founder of the organisation, its general secretary, two of the team leaders and one of the team members. The topics included an in-depth orientation of the history of the organisation, its goals and current challenges. The purpose was for me to build a shared understanding of the organisation in its present form. It also served to deepen their familiarity with me, my interests and concerns - which were discussed as part of these interviews.

One of the goals which I had set up was that the project should, in as large degree as possible, be owned, managed and eventually maintained by the organisation itself. In case any additional capacities in the organisation were required this would need to be developed through the project. To further this objective, an action learning set was formed which included both senior officers as well as team leaders and members from different parts of the organisation. The secretary chose who would participate in this action set with my input. Included was a cross section of the organisation - one senior team member, one senior team leader, one junior team leader, one younger team member and the secretary herself.

The initial meetings of the action learning set sought to map out the activities and stakeholders of the organisation as well as challenges and current practices surrounding communication, knowledge and information management within the organisation. Considerable differences quickly emerged, both in what different members considered the most important activities of the organisation as well as what were the challenges. This partially reflected different priorities for people in different job roles but also hinted at deeper divisions. At one point, one of the members of the action learning set stated that fundraising was the most important activity, to which a senior member replied that raising external funding was in fact what was causing the problems they faced. I observed that there was a difference between senior members who had been part of the organisation since its early days and junior members who had joined to work on specific projects. Tensions such as these provided an initial departure point for the first phase of the work with the organisation.

Working with an organisation that, as well as individuals who, have little experience with participatory design and design research meant that considerable work was needed to identify and develop shared understandings of what the project was about as well as what appropriate approaches were. As a result, throughout the project methods employed (e.g. rich pictures, workshops, qualitative interviews, participant observation) and the forms of inquiry conducted, have been an important topic of discussion. Some of these discussions were difficult, for example: between myself and most members of the organisation there was limited shared understanding of how qualitative methods could be applied and what knowledge they might produce. If the goal was to

primarily produce knowledge for an outside audience, these methodological and epistemological discussions might not have been crucial. However, considering my goals for the project, initially these discussions were perhaps even more important than the results generated.

2.2   First phase: Ethnographic study

At the start of the project, an action learning set within the organisation was formed around the project. This group consisted of two team leaders, three team members from different teams, the secretary and the head of the organisation. I had proposed, and the action learning set agreed with, an initial phase of ethnographically oriented study whereby I would spend time both at the head office of the organisation as well as at one of the field offices. This initial study was undertaken during the summer of 2016. I employed participant observation with field officers as well as head office staff members, along with semi-structured and informal interviews (some of which were recorded, others which included note taking) as well as smaller group discussions and collaborative Rich Pictures [44]. While all activities undertaken involved working with staff members from the organisation, this period also involved regular interactions with farmers' groups and beneficiaries of their programs. To be a less intrusive presence, I opted to work with a field office where I already had worked previously. In this way, as I knew several of the members of the field office and farmers' groups, greater familiarity and trust could be built in the time frame of the project.

An important goal of this work was to produce framings, articulations and translations which could be embedded in the organisation's own understanding of itself, rather than extracted as recommendations for design. Reports and outputs of this period were thus primarily meant to be reported back to and discussed within the action learning set. The idea was to use the fact that I had both the time and funding to conduct this kind of work as a way to support the organisation to gain better insight into their own work. This also allowed the action learning set as well as other members of the organisation to become more familiar with methods employed by me as well as what kind of outputs such methods could generate.

Relationship-building was another important aim of this phase. Rather than engaging in any design oriented activities in the first year, I emphasised being present in the field office as well as the head office throughout their everyday activities. In this way, I could become a more familiar presence, as well as someone who understod their work and challenges. As a result, I no longer remained in the space of an outsider to the organisation - I also became a part of tensions and conflicts and to some degree expected to take sides.

The initial framing of this phase emphasised communication practices and technology use. However, it quickly became clear to me that to understand their technology use as well as potential impacts of technology on their work, an inquiry into values was necessary. This was partially informed by a pre-existing view of development that I held (drawn from the

capability approach), as well as concerns for the potential for technology to promote values that might run contrary to those held by the organisation and its members. Together with the action learning set I drew on data gathered in this phase to identify values linked to how sustainable development and sustainable agriculture were perceived by members of the organisation at both head office and field office level. For example, close social relations, resilience, self-sufficiency, holistic and long-term engagement were all values reflected in both how work was organised as well as the way in which agricultural sustainability was framed by leading members of the organisation. We (the authors of this paper) have reported elsewhere [34] how these values were articulated by the organisation and how they might influence design activities.

These values were, however, by no means uncontested and consistently held throughout the organisation. For example, both head office as well as field office staff members shared with me how the organisation's work was changing because of a move from a single funder funding ongoing work towards multiple funders funding projects seeking specific outcomes. To some of the members of the organisation this was unsustainable, directly contradicting values such as self-sufficiency and long-term engagement. For others, this reorientation was necessary to ensure sustainability in the face of changing funding climates. One impact of this change was an increasing "professionalisation" of their work practices [25]- something that some considered beneficial and others harmful. Similar changes could be seen in staff members' relationships to the organisation. For some - primarily senior staff - their interest lay in promoting the values and mission of the organisation and they came from backgrounds in politics, biology, chemistry and agriculture. Increasingly, however, newly recruited staff would come from educational backgrounds such as rural development or social work, and were more concerned with development work as a profession than the specific activities and mission of the organisation.

Members of the action learning set as well as the organisation at large were split as to whether to defend & promote traditionally held values and commitments, or to align themselves with mainstream development practice - even if it meant that greater "efficiency" was achieved at the cost of other values. Having become a partial insider to the organisation, as well as seeking to engage the organisation in a design project, I found myself needing to locate myself in relation to this tension. Guided by my own standpoints, values and research interests, I made it clear to the action learning set that while I was willing to - for example - develop project management tools, my interests were better aligned with understanding how design might help maintain long held values in face of external change. This, unsurprisingly, served to push the research project towards the direction it took. It was through my familiarity with the organisation, and extensive engagement, that I felt comfortable in taking an explicit stance in this way. I could be comfortable in knowing that while it did not resonate with all the members of the action learning set or everyone within the organisation, it

was important to a large group of long-term staff members. While, in the narrow sense of the organisation, this meant deviating from the PD commitment to those with least power (newer staff members vs senior ones), when viewed from the broader sociopolitical context the traditional values of the organisation are increasingly marginalised.

Throughout this phase I, together with the action learning set, clarified the goal of the research project as well as what its impact might be. When it comes to impact, a common practice for ICTD projects is to seek to directly alleviate issues faced by vulnerable populations, incorporating a project-specific notion of how these issues may be addressed. The framing of this project, however, centred around the goals of the organisation and asked how ICTs might better be able to support them. The idea was to contribute to organisational capacity which may then, in turn, contribute to addressing socioeconomic development. In addition to building on my own personal politics, this approach to impact followed from the configuration of the project around an action learning set. Unlike a scenario in which I would have gathered data to inform implications for a design project framed elsewhere, when working with the action learning set focus remained on activities, goals and projects of the organisation itself.

2.3 Second phase: Participatory design activities

In 2017 I began a more design-oriented engagement, building upon the activities that was undertaken in the previous year. Two outcomes from the ethnographic activities became important for shaping the design work.

The first was the tension related to the way that the values underpinning the organisation's work clashed with realities of donor-funded, project-oriented work. In transitioning from the first to the second phase, my own declared interests as well as those of the action learning set were discussed. It was decided that rather than framing the project around the realities of project oriented work efficiency, it would be focused on promoting the set of organisational values identified through the first phase. This choice reflected my own standpoint and that of several members in the action learning set. Other groupings within the organisation would undoubtedly have made a different prioritisation.

The second outcome was the clarification that the project was to contribute to the capacity of the organisation, thereby indirectly having a development impact. While it was always a goal for me that the project and its outcomes would be owned by the organisation, I had not initially ruled out working directly with their beneficiaries. However, drawing on the initial study and with considerations for my background and position in relation to the research context, I considered that mutual learning was more likely between the organisation and myself. Equally important, in discussion with the action learning set it seemed unlikely that technology could address the most pressing challenges their beneficiaries were facing. Finally, even if a participatory process would have identified and designed technology interventions to address these challenges, the scope for beneficiaries to sustainably

maintain it would have been limited - creating either additional dependence on me or someone else, or resulting in a pilot project that quickly disappeared when I left. Thus, the project became directed towards organisational development.

Drawing on technology stewardship and ethnographic action research [57, 64], a small working group was convened with the goal of adopting a process of identifying, experimenting with and evaluating ways to introduce technology into the organisation. Together with the working group five workshops were held to first plan an intervention, then implement it and finally evaluate it and set-up further iterations. Engaging with this working group - rather than with the action learning set - for the implementation of the design project had two reasons. First it reflected a desire to broaden the scope of who was involved in the design activities. Second, it recognised that the relatively senior members of the action learning set did not have the time nor close interaction with field staff, needed to fully participate. The action learning set took, in this phase, the role of a supervising body to which reports were made and learnings discussed.

As a first step, the working group discussed a challenge in their work that I and the working group might want to identify technology options to support. The broad challenges identified through the ethnographic study were also reviewed. From this 'monitoring & reporting' was identified as a key focus area. Not only was this an area where the working group felt new ways of employing technology might be helpful, but it was also one where the contentions between different value systems had become most clear. Monitoring and evaluation (M&E) is a central part of development praxis, and it is one where increasingly atomistic, quantified and measurement-oriented practices have become dominant [24]. Mainstream M&E practice thus contrasted starkly with the holistic, social and relational values that the action learning set had identified.

I proposed that we would begin by using a technology I had observed being used for many different purposes in the organisation - WhatsApp™. Suggesting this was informed by an intention of building upon practices and technologies already present in the organisation, rather than introducing completely new technical artifacts or systems. The field officers and head office staff were already using WhatsApp extensively for a wide variety of purposes. Several people noted that they preferred it to tools they considered more structured or formal, such as e-mail. As a social communication tool, it fitted better with the social and informal way in which the organisation - especially in the field offices - operated. While thus far it had mostly been used for one to one communication and for "faltu" [1] groups, I hoped this project could serve as a way of finding broader uses of the technology. It was not an entirely uncontroversial choice. In one of the interviews conducted a field officer confided how she had been strictly instructed by their team leader to limit sharing in informal groups. The reasoning, she surmised, was

that what was shared might contradict official reporting both within and externally to the organisation.

Another consideration that played into the technology choice was that I had from the start established with the action learning set that beyond the funding for myself, no additional, external funding should be used for design activities. Not introducing external technology or funding aligned with the goal of self-sufficiency identified previously. While a more complex technological intervention might have led to greater initial impact, I considered focusing on developing practices around existing technology more likely to be able to be sustained after I left. It also meant that I did not need to place myself in the role of a funder or funding decision maker.

The working group identified regular voice, video clips and picture sharing through WhatsApp as one of the ways they could engage in monitoring and reporting which better aligned with their values. This developed into a WhatsApp group where field officers and head office members interacted through video and voice sharing. Choosing voice and video was an idea sourced from the first working group meeting, which I promoted having in mind that it might positively serve to illustrate new ways of interacting. This 'experiment' continued for several months and was well-received by both field officers and head office staff. It served as the basis for both identification and discussion of organisational tensions, as well as a learning tool for understanding how to appropriate and design technology use. For example, field officers and head office staff highlighted how the intervention had, in contrast to other written reports, allowed them to see what activities were happing in other offices, mitigating a long-standing problem of disconnection between teams in the office. Several field officers noted how they felt an increased sense of commitment to plans and outcomes, having shared in a broader group both plans as well as videos of activities undertaken. At the same time, some of the members of the working group felt that the intervention did not provide them with the text reports they needed to follow-up and "ensure accountability". I got to understand that "accountability" related to pressures and needs from team leaders and, further upstream, funders. While the intervention did illustrate a different way of working, it had not changed the power structures that had created the challenge in the first place. The experiment was later replicated by other teams in the organisation. Following up on this, the design group has identified potential developments and future experiments to conduct in later parts of 2017 and 2018.

3 DISENTANGLING PD IN PARTICIPATORY DEVELOPMENT

Having described the unfolding of an ongoing PD project, we now examine how the choices made relate to our initial question - **who participates with whom in what and why?** Specifically, we use examples of choices made in the case study to illustrate how PD might be framed and practiced in participatory development.

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[1] Idle or 'useless' chatter.

3.1 Who participates and with whom: Locating the researcher within the research context

As we have attempted to do in this case, making the researcher and their position explicitly visible through the design process is a critical practice and commitment. This is especially important considering the great differences in power encountered - not only cultural differences but also histories of exploitation and dominance [29].

A way of practicing this is by reflecting on what work can realistically be conducted and with whom a mutual learning process is possible. For example, the choice not to undertake a design intervention that focused around the organisation's beneficiaries was made considering both practical aspects such linguistic ability, geographic location, time that can be dedicated to the research site as well as the positionality of the researcher involved. Attempting to stimulate the type of emancipatory design activities envisioned in PD with the beneficiaries for a researcher from a vastly different class, culture and country of origin, with a limited number of years of field experience, a restricted time frame and less than fluent language skills, would be naïve at best.

Early in the project one of the organisation's beneficiaries asked: "How much is [the plane ticket] for you to come here?" When he heard the cost, he said: "Well, why don't you just give this money to [the local chapter of the organisation] instead?". The money it cost to fly the researcher to the site was approximately the same as the annual profit for a smallholder's farm in the area. The farmer is likely correct in his implied assessment that the greatest direct benefit at the field site would have been through contribution to their fund. One response to this challenge would be to attempt to hide or not disclose such vast differences in affluence as they may serve as impediments to mutual engagement in PD activities. A perhaps more honest approach is recognising that engaging as equals across such divides requires levels of relationship building and long-term engagement outside of the scope of, for instance, a PhD project. It did not preclude the researcher from meeting with, and spending time at the field sites, but it did influence the framing of the project - with whom we did what kind of work.

Compared to locating the project at the level of the staff and field workers, working with the organisation's beneficiaries would likely have generated a weak form of participation. Even if specific individuals could be identified who would have been willing and able to participate fully, a framing of the project which included the beneficiaries would be beset with problems of representation. This limited subset of beneficiaries would have been expected to be representative of others - however, the very fact of their willingness or ability to fully participate would have already set them apart. As mentioned in the initial part of this paper, this can serve to strengthen pre-existing inequalities and exclusions.

Considering the limited forms of participation possible with the farmers' groups, it is also reasonable to expect that they would have limited potential gains to draw from participation. With the farmers' vulnerability in mind, we adopted a precautionary approach rather than assume or overstate expected benefits to offset the "cost" of their participation. Considering the low likelihood (for practical reasons e.g. funding) of a continuous, long-term relationship between researcher and beneficiaries also raises questions about potential sustainability of the intervention, thereby limiting any longer-term user gains. In conclusion, this negotiation around who participates with whom allowed for an honest assessment of how much time, input and engagement we could seek from the farmers in any activities of the project.

Framing the project to emphasise field workers and other staff meant that anybody from within that group could have participated on a similar basis and draw benefits from participating. We want to emphasis, however, that this does **not** mean running a design project where the organisation's staff become representatives for their beneficiaries' voices. Such an approach would have meant further marginalising the beneficiaries' voices by allowing other stakeholders to articulate and translate for them. Rather it means taking an active decision to limit the scope of what work we engage with in a design project.

As should be clear from this discussion, it is insufficient to merely account for and report one's positionality when discussing research outputs or results. Rather it needs to be a continuous part of the interaction between different stakeholders in the research process [49]. This means disclosing personal positions and, at times, taking sides between different groups within the research context. We would argue that regardless of whether it is made explicit such negotiations and positioning of the work will take place. In this case study, when we identified a contention between different value systems, it was opened for discussion within the action learning set during which the researcher's own orientations were made explicit.

Finally, we would argue that locating the researcher within the research context can be given a very practical, direct definition. As Dearden and Tucker [16] argues, short-term bungee research is an all too common but inherently flawed form of research practice. In our project we responded by configuring the research work so that the researcher would spend six months at a time living and working in West Bengal. Even such comparatively long engagements still meant that there were long periods when the researcher was out of the country, during which activities were hard to sustain or support. Basing the researcher full-time in the location of the research might provide space to develop relationships over time and engage in a programme of activities that was low-intensity but continuous, but the PD practitioner would likely remain an outsider by virtue of the specific role. When PD practitioners engage with social innovation efforts, decisions about which groups to engage with and focus upon should consider how differences and distances between visiting PD practitioners and various stakeholders in the setting will impact on the potential for effective mutual learning.

3.2 A "what" of PD in socioeconomic development: Building sustainable relationships and networks of learning

When considering "what" this project would do, we focused on organisational development in the context of a development NGO, as opposed to contributing directly to the needs of the organisation's beneficiaries. While this might make for a less exciting proposition in a ICTD context, we argue that this is precisely one of the contributions of our approach. For many researchers and designers - especially those operating out of the North - it would be far preferable to recognise the limitations that their position places and accordingly frame their work. This does not preclude engagement with vulnerable populations but we would argue it requires a less direct approach. Rather than attempting to create the conditions for participatory engagement with such communities, it may be preferable to align oneself with actors already present and active in the context, enabling them to adopt and appropriate PD practices in their work. Concerns for sustainability are central to this reasoning. As we noted, our assessment was that it was less likely that relationships or interventions could be sustained with the farmers' groups. Under any conditions sustaining PD activities is a challenge [30], particularly when conducted in community settings with limited resources [43]. Considering the "cost" of PD activities in socioeconomic development, primarily in the form of effort and time required to enter each other's social world, we see the potential for sustainable, long-term benefits as a necessary precondition.

An important concern for the PD practitioner or researcher thus becomes how to enable and encourage participants to exert a great deal of influence over the research process as well as maintain it without the researcher's presence. This means ensuring participation in framing the project, setting goals and evaluating outcomes. It also means embedding PD practices in existing practices whether work, social, technology-related or organisational. Accordingly, we framed our work as a relational practice, whereby the design process serves to identify, make visible and continuously develop dynamic networks of relationships between different stakeholders [17, 40]. Such networks become both the site for the design process as well as a sustainable outcome of it.

Following this framing, the starting point for this project was a pre-existing relationship with the partner organisation. We considered this a more suitable starting point than formulating a project and area of interest, and then seeking a relevant partner. Early engagements with the organisation, undertaken during the first author's master studies, were only in a limited way participatory. It was only when a relationship of trust was already established that a more strongly participatory project could be framed in partnership.

Relationship building that took place through ethnographic engagement, as well as the regular work with the action learning set, contributed to cultivate a form of insider-outsider relationship between the researcher and the organisation. It helped to establish the researcher as a familiar presence, and as someone who understood issues facing the organisation.

Being a familiar presence was especially important in the field offices considering that the researcher was clearly identifiable as a foreigner. In those locations, linguistic abilities and cultural competence served as an essential starting point whereas long-term, regular presence built familiarity and partial insider status.

However, even taking this into account, we considered the scope of this project to be insufficient for the researcher to gain sufficient depth of understanding and relationships to focus on mutual learning at the field sites. Even in the contexts where the researcher could become sufficiently an insider there were limitations. For example, the fact that he was externally funded and not subject to the financial constraints and priorities of the organisation was both an enabler to undertake this type of work but also a distinction so that he would always remain an outside partner. This outsider, insider distinction is likely to be common to many PD efforts in social innovation wherever it takes place.

3.3 The interrelated whats and whys: Centring values in process, tools and outcomes

An important goal and contribution of the researcher in our case was supporting the organisation to make the link between values and technology use. The intention was to embed the process of articulation and translation of values into technology, into the research context [6, 29].

In our case this was achieved through formation of, discussion within and activities conducted by the action learning set, the technology working group and by individuals throughout the organisation. Continuously reporting back and collaboratively analysing findings was a way to ensure that articulations of values reflected mutual interpretations [6]. In the translation process of moving from identified values to designs the priority has been to a) highlight positive ways in which values could be enabled through technology and b) illustrate negative ways in which technology might serve to inhibit, supplant or introduce conflicting values [24].

Working with WhatsApp$^{\text{TM}}$ became an entry point for discovering how to 'design a new way of interacting' within the organisation, using technology, without necessitating any software development. It also resulted in ongoing discussions about design limitations and potential ways that either integrations or customisations could be designed to address them. It aligned well with pre-existing preferences and norms of workplace communication, by emphasising social, informal interactions as opposed to structured, formal tools. However, at the same time, this also promoted the use of a closed, commercial technological platform over which the organisation has limited control or ownership. This was in part a contradictory choice as it both supported and worked against values of self-reliance. It avoided the intervention having to rely on the researcher's technical capacities, but on the other hand created a reliance on a commercial technology. Choosing to use such a platform in preference to, for example, an open source alternative was a pragmatic compromise considering all the goals of the project.

Even though the project focus was on the values of the organisation, the values and interests of the researcher were continuously present throughout the process. Open articulation of the researcher's values was possible because of the relationship developed with the organisation. It is not in question whether the researcher acted to influence the research process but rather whether alignment was found between the values and commitments of the researcher and those of members of the organisation.

It is worth noting here for whom and for what purpose the researcher conducted this work. It is, of course, the case and reality of research practice that the researcher will seek to package and present their work to outside audiences. However, the primary commitment and instance to which reporting was done were to those involved in the research process itself. In practice this meant approaching findings from the perspective of how they could be actionable and useful for the action learning set, rather than what might have been most theoretically interesting. It meant spending considerable time making the researcher's methods and approaches intelligible and meaningful. It also meant approaching technology choice pragmatically from the perspective of what could be sustained and incorporated in practice rather than what might have been interesting for an external academic or technical audience. This does not prevent us obtaining results that are relevant to external audiences, but it did emphasise certain priorities in directing the allocation of the researcher's time and effort.

4 CONCLUSION: A NECESSARY RESTRUCTURING OF PD IN SOCIOECONOMIC DEVELOPMENT?

In the previous section we identified some of the orientations that informed the choices made in the case study, to address the challenges that we identified for PD in the context of ICTD in the Global South, and by extension for PD in social innovations closer to practitioners' homes.

For example, the respective cultural and socioeconomic backgrounds of researcher and other stakeholders, influenced with whom we considered that an emancipatory participatory process could be created. Concerns include the time it takes for the researcher to gain a sufficiently deep understanding of the chosen context, and the time required for participants to gain both understanding and experience of technological opportunities and PD practices. Furthermore, when deciding who to engage with, the possibilities for commitment by the researcher to the continuation of any intervention had to be considered. While we would not exclude potential alliances between relatively affluent, northern researchers and marginalised rural people in the Global South, we do consider that any efforts at participation and mutual learning require time and engagement beyond the scope of short research projects such as those that happen within PhD studies.

Considering development through the lens of capability enhancement, we sought to promote articulation of values held by the organisation through participating staff members, and

translation of the same into a design intervention. Respecting the agency of the organisation and participating staff in framing the intervention was considered more important than our preconceived notions of what might be valuable or useful. This resulted in, for example, that social relations and social forms of communication became the starting point for the design.

Sustainability was a shared value of the researcher and the organisation. Interestingly, notions of sustainable agricultural development resonated well with the way we thought about sustainable ICTD. The organisation considered "self-sufficiency" an important aspect of their work, and this was mirrored in the way we approached the ICT intervention. In practice, in both cases, this meant limiting reliance on external funding and building local capacity rather than providing externally sourced material or financial resources. This meant that we adopted tools that were already in place and relied on processes already present or which the organisation could manage and replicate on their own.

We consider that the primary role of a PD practitioner or researcher should start from developing sustainable relationships and networks of learning. The goal of these relationships and networks should first and foremost be supporting communities to identify and articulate values and how they might relate to both positive and negative technology choices. The autonomy and agency of the communities involved should be an important concern, when considering what, how and why activities are conducted. This may inform, for example, the way that projects are framed or funding is sought and applied.

Recognition of differences in power and socioeconomic position serve as a necessary, but not sufficient, condition for this type of engagement. When operating within a space of great inequality, these differences can act as a guide to when and to what degree mutual learning and democratic participation can be expected. However, while these provide orientations on the micro or project scale, they do not adequately address the need to examine the macro-scale organisation of PD in socioeconomic development. On this scale, we must engage with the way that our PD practices are still enmeshed in the large-scale inequalities caused by colonialisation and neoliberal economic organisation. If the long-term project of PD in socioeconomic development is to live up to its emancipatory potential we believe that a more extensive shift of PD practice is needed.

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