

Mapping the Margins: Navigating the Ecologies of Domestic Violence Service Provision

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ABSTRACT

Work addressing the negative impacts of domestic violence on victim-survivors and service providers has slowly been contributing to the HCI discourse. However, work discussing the necessary, pre-emptive steps for researchers to enter these spaces sensitively and considerately, largely remains opaque. Heavily-politicised specialisms that are imbued with conflicting values and practices, such as domestic violence service delivery can be especially difficult to navigate. In this paper, we report on a mixed methods study consisting of interviews, a design dialogue and an ideation workshop with domestic violence service providers to explore the potential of an online service directory to support their work. Through this three-stage research process, we were able to characterise this unique service delivery landscape and identify tensions in services' access, understandings of technologies and working practices. Drawing from our findings, we discuss opportunities for researchers to work with and sustain complex information ecologies in sensitive settings.

CCS CONCEPTS

• **Human-centered computing** → **Human computer interaction (HCI); HCI theory, concepts and models.**

KEYWORDS

Domestic Violence; Public Service Mapping; Civic Technology; Design Approaches

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1 INTRODUCTION

According to research by the Office for National Statistics, an estimated 1.9 million adults (1.2 million women, 713,000 men) aged 16 to 59 experienced domestic violence in the United Kingdom (UK) in 2017 [4]. The long-term effects of such violence are far-reaching and frequently devastating for victim-survivors and their families, requiring lengthy and complicated multi-partner responses across crime, housing, health and social care agencies. In the aftermath of the 2008 financial crisis, the 'scaling back' or withdrawal of State funding has been experienced as a devastating assault on the provision of care and protection to vulnerable people affected by such violence. Local Governments are now under greater pressure to find funding for, display, maintain and coordinate the access to, and delivery for social service provision for local people.

HCI has begun to address the complexity of this problem and current research has implored the inclusion of multi-partner stakeholders in the design of digital support for service delivery [28, 29]. Despite the emergence of these recommendations, most technology-based designs in this space, although well-intentioned, have predominantly framed the issue as 'harm reduction' and have been met with unintended consequences. These include isolating victim-survivors from wider communities of support and placing further responsibility on victim-survivors to better protect themselves, their families, and their devices from a potential threat [54]. As such, there is a real need for a cohesive strategy that encourages professional services to work collaboratively in minimizing repetition by sharing specialist knowledge more efficiently. Following calls for researchers to "*engage directly in both state ... and personal politics*", we have sought to consider technologies beyond an individual's capacities and cognitive needs [23]. Specifically, we underline an explicit requirement for technical design to be responsive to the frequently fragile, socio-political settings in which such resources will be used.

Using a mixed methods approach to capture the diversity of domestic violence service provision, we worked closely with providers in the design of an online service directory to assist them in their work. We present our analysis of an engagement process that was comprised of informal meetings, interviews, a design dialogue, and an ideation workshop with service providers. Through this work, we developed three key considerations for researchers and community members to inform their: choice of research methods, approach to sensitisation, and orientation towards the practicalities of working and supporting domestic violence service delivery and design. We contribute to the ongoing discourse in HCI surrounding civic technologies for domestic violence in three ways: (1) a novel application of a design sprint ('Design Dialogue') for sensitisation to design practices; (2) we present our findings of a key set of tensions between stakeholders by use of service mapping; (3) by reflecting on these tensions, we contribute to a growing knowledge base in how to conduct sensitive design in response to domestic violence.

2 RELATED WORK

Domestic Violence and HCI

The intersection of technology and domestic violence has been described as generating a "*new breed of abuse*" [8] through GPS location tracking, physical control of digital devices and public humiliation by threatening messages or enacting image-based sexual abuse ('revenge porn') [29]. Other work within HCI has sought to place the victim-survivor at the heart of the discussion, describing the security and personal safety practices taken by an individual in an attempt to lessen or avoid further abuse [19, 37, 42]. In attempting to look beyond the impact of abuse, Clarke et al. describe the use of re-purposing familiar HCI methods, such as cultural probes, into bespoke, *digital portraits* dedicated to examining identity reconstruction for victim-survivors after leaving abusive relationships [14]. It is notable that the field of HCI has continuously made a substantial effort to engage victim-survivors in the discourse of technology design in order to deconstruct dominant, and frequently damaging stereotypes of their personhood.

HCI and computer security researchers have recently addressed the complexity and scale of domestic violence through the inclusion of domestic violence service providers in the conversation [28, 29]. Yet the inclusion of professional and specialist stakeholders has still generally resulted in a focus on recommendations for protections for an individual service user's privacy and safety. Whilst HCI showcases an impressive range of protection strategies against physical and virtual entry to personal information [10, 28], the framing of resistance as a primary strategy against domestic violence is extremely problematic, and may in fact escalate

the abuse through antagonising the abuser [29]. These actions place additional responsibilities on the individual, take little or no accountability for the technology access barriers of many people affected by domestic violence, and perpetuate the victimization of victim-survivors - by transferring responsibility from frequently systematically abusive groups to those most impacted by violence. Crucially, this fails to utilize coordinated and collective responses from service providers.

This way of thinking not only rules out including so-called 'harder to reach' service users but ignores the providers' rich knowledge-base of civic processes [33]. If we continue to frame and understand technology in this complex space as a simple, individualized solution, we are missing 'the bigger picture'. We argue that one must include not only multi-stakeholder ecosystems as Freed et al. argue in [29], but the very socio-political and economic landscape which these ecosystems are operating within (or struggling to).

Domestic Violence in the UK

In the UK domestic violence and abuse is defined as any incident or pattern of incidents of controlling, coercive, threatening behaviour, violence or abuse between those aged 16 or over who are, or have been, intimate partners or family members regardless of gender or sexuality [17]. The abuse can encompass but is not limited to, psychological, physical, sexual, financial and/or emotional. Establishing domestic violence services in the UK has been a "*long, hard and sometimes bitter*" task, arising from the 1970s movement of women's liberation [22, 32]. Within this period included the establishment of a nationwide chain of refuges and support services, and successful campaigns for the recognition of domestic violence by the government, police and the criminal justice system.

Despite most common misconceptions about domestic violence, the criminal justice system frequently has minimal, if any role in most resolutions of incidents. In the context of the UK, advocates and practitioners of restorative justice argue that state punishment, and society's customary response to crime, neither meets the needs of victim-survivors nor prevents re-offending [36]. In its place, community-driven efforts in which families and communities of offenders encourage perpetrators to take responsibility for the consequences of their actions, express repentance and repair the harm that has been inflicted. A significant number of incidents of violence and the handling of vital protections vulnerable people are now being managed through resource-stretched, social care services [50].

Public Service Commissioning in the UK

In the aftermath of the 2008 Financial Crisis, the UK Coalition government proposed to cut over £30bn worth of public

services over four years. Local government has faced a disproportionately high share of these cuts, with a 51% cut in local communities' budgets, which were originally allocated to address local issues and improve local areas. It is at this local level, where most of the social and welfare issues that arise from these devastating cuts were reported to be experienced [41]. While it is important to stress the focus of our study is on the UK, Almqvist et al. [9] note that the international conditions of austerity have placed pressures on public service budgets, with implications for accountability and governance far beyond the UK.

As an attempt to mitigate the impacts of austerity measures through the promise of new freedoms for local government, the Localism Act (2011) was introduced, which boasted to assist in “*empowering communities to take over state-run services*” [15]. However this Bill was accompanied by a distinct lack of provision of new laws of general competence in extending the legal power of Local Authorities, and 75% of Local Government funding remained under centralized control [56]. Left without the adequate finances for public services, Local Authorities placed a heavy reliance on the procurement of contracts through the compulsory competitive tendering system, subjecting service delivery to the forces of the neoliberal market. By the principles of this market, Davoudi et al. [18] argue that an individual is conceptualized as a “*resilient, self-managing and enterprising individual*”, and less like “*citizens and members of the society*” to which they are part of.

As public services are commissioned at a regional level that aim to be responsive to spatial social needs, our geographical focus for this study is important for several reasons. The wider Northbrook region has three moderately-sized cities, its largest with a population of around 280,000 people, is sparsely populated in the North and East, and possesses an urban and arable landscape in the South and West. It is one of only two English regions (out of a total nine) where the Black Asian Minority Ethnic (BAME) population is under five percent (4.7%) [2]. As the area experiences higher than average levels of deprivation, the North's social and political fall-out from a restricting of the economy in the 1970s, and subsequent higher dependency on public services has thus left it more vulnerable to welfare cutbacks [49].

Local Government and the Third Sector

Following the introduction of New Public Management and outsourcing in the 1990s, the third-sector has played a close role in the provision of public services within the UK. As a result of contracting out, privatisation and narrow performance measurements, Evers and Laville have stated that many third sector organisations have adopted more characteristics of state and market organisations to the point of losing distinctiveness from the former [26]. In a gradual

shift, Local Authorities have placed further reliance on the third-sector to fill the void of once state, now local service provision. As service provision is now commissioned at a regional level, third-sector organisations have organically undergone operational restructuring to reflect these changes in funding to attain service contracts.

However, against the backdrop of cuts to public services, the third-sector has been increasingly encouraged to ‘deliver more for less’. Haugbølle et al. [5] report that across the last decade the average maximum public contract length has been gradually decreasing, with a current average of 24 months. In order to obtain successful funding for services and salaries, a significant amount of staff time has to be dedicated to the re-application and evaluation of existing services [44]. The combination of a high-staff turnover from increased workload stress, the rapidity of re-/de-/commissioned services and measurement of success through narrow concrete and measurable outcomes form a public service landscape that is in a “*state of flux*” [38]. Local activist groups have deemed that this state of crisis is felt especially strongly at the intersection of the North of England public service delivery, and domestic violence in the UK [52]. Regional research has emphasised that currently, public service provision through the third sector has entered a state of survival, with many organisations forced to consolidate or collapse [48]. In requiring multi-stakeholder involvement, and cooperation between various government agencies and voluntary organisations, we argue that the domestic violence sector is a critical space for a further investigation [35].

3 PROJECT DESCRIPTION

We report on our participation in an innovation activity that aimed to design and develop a digital service directory in the North of England. Within this, we describe in detail our fieldwork of informal meetings, interviews, observations, a design dialogue, and an ideation workshop. Our involvement in this work stemmed from an invitation to take part in the design and development of the directory after the lead researcher met with a senior coordinator of domestic violence service commissioning within the local authority. The senior coordinator, a project lead, subsequently introduced the team to other members of the steering committee responsible for the creation of the directory. The research team identified two key benefits of this project; firstly, it could aid in the lead researcher's sensitization to such a risk-averse space, and secondly, to support community groups in generating effective multi-agency collaborations.

Safe Northbrook

A Local Authority in the UK is an organisation of local government that is officially responsible for a range of vital public services for people and business in a designated area.

While the pattern of this local government may vary depending on the area (i.e. single tier, upper tier, or lower tier authorities), the most common type is a local council, made up of councillors who are elected by the public in local elections [1]. For this project, we worked closely with a local government authority that oversaw service delivery for over 20 neighbourhoods, serving a total of more than 250,000 constituents. A survey prior to the Police and Crime Commissioner (PCC) elections showed anti-social behaviour to be a top concern for communities, and the main measure by which the impact of the position would be judged.

The Safe Northbrook project was formed in partnership with Northbrook City Council; Emergency, Rehabilitation and Probation Services; and the Clinical Commissioning Group for Northbrook and Guildham. The group's purpose since its conception in 2013 has been to achieve a reduction in criminal activity, increase preventative approaches, support victims and improve community confidence. Following a strategic assessment of community safety issues, the partnership identified three key issues that needed prioritising: violence (including violence against women and girls, domestic violence), community tensions (including hate crime, anti-social behaviour, radicalism) and modern-day slavery (including human trafficking, wage theft). Despite the “*unprecedented year on year cuts to public services*”, the group have highlighted the importance of the partnership in “*working and pulling together*” to ensure the best use of reducing resources across all agencies and sectors [39].

Research Approach and Study Overview

Our study engaged multi-agency workers in the ideation phase of the design of a public service directory, against the backdrop of austerity localism in the North of England. We aspired that this would produce a rich characterization of the service landscape of the North, and understand the effectiveness of a process for designing with multiple stakeholders in the space of domestic violence. We configured an Action Research (AR) approach in partnership with the project board, using Reason & Bradbury's 'second-person' AR to “*issues of mutual concern*”, such as the accessibility of domestic violence services [48]. The approach's focus on researcher values (ie. gender, political alignment) and their requirement for 'political acumen' to manage organizational politics was also a key motivational factor in its adoption [55]. We performed three complete AR cycles of planning-acting-observing-reflecting with the interviews, the design dialogue and the design workshop representing the topic of a new cycle (Figure 1). Participation of board members was negotiated subject to their skills, domain knowledge and availability.

The fieldwork conducted in this investigation was a five-month study with 10 steering committee members (seven

females, SC1 - 7 and three males, SC8 - SC10), and 18 members of domestic violence service providers (sixteen female and two male). We used a qualitative, mixed method approach to progressively probe the complex context of this sector through using a three-stage approach (Figure 1): 1) investigative, semi-structured interviews (performed over the phone, and face-to-face); 2) a design activity structured to promote dialogue and design literacy; 3) a speculative design workshop. As such our study comprises of three distinct, yet intersecting stages where the conclusion of one stage, would act as a basis for the engagement of participants in a deeper discussion within the following stage.

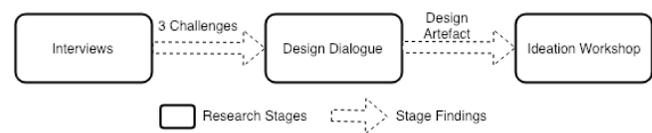


Figure 1: Stages of Research Study

In the first stage of our process, we engaged ten service providers of domestic violence in the North in semi-structured interviews to establish a preliminary understanding of existing services. In our second stage, we discuss how the key challenges identified through a content analysis of our interviews provided the substance to a design sprint to produce designs for the database. Finally, we conclude our study with a design workshop where service commissioners provided their critique and own suggestions on the designs produced by the design sprint. For the remainder of the paper, we will provide a more detailed account of each stage and related findings, in order to demonstrate how each stage's outcome informed and fed in the following stage. Then we will discuss findings and insights generated from the whole process.

4 STAGE ONE: INTERVIEWS

We conducted 10 semi-structured interviews with primary members (P1 - P10) of organisations that delivered domestic violence services in the North. Through the use of a mailing list run by the project lead, a call for participation email was sent to a list of providers within the region. This list consisted of front-line staff (care workers, carers), local councillors (public officials), academics (students, lecturers), service commissioners and coordinators who were all working within the North area on domestic violence. Individuals who were interested contacted the lead researcher to organize a convenient time for an interview.

Each interview that took place lasted between 40 to 85 minutes (with an average of 70 minutes), where participants were first asked to characterize their daily practices within their job role and their working relationships with other

Participant Number (P1-P10)	Job Role	Gender Ratio (F:M)	Experience in Role (Years)	Sector
3 (P1, P2, P3)	Front-Line Careworker	(3:0)	4-12	Third Sector
2 (P4, P5)	Service Commissioner	(1:1)	2-5	Public
1 (P6)	Women's Services Officer	(1:0)	7	Third Sector
1 (P7)	Technology Coordinator	(0:1)	16	Private
2 (P8, P9)	Senior Project Manager	(2:0)	8-12	Public
1 (P10)	Academic Board Member	(1:0)	10	Public

Table 1: Participant Characteristics: Number, Job Role, Experience in Role and Sector of Work.

organisations. Participants were also questioned on the types of services they provided, the level of digital integration within these services, and their attitude towards technology in the sector. Respondents covered a range of public, private and third sector service provision, each with a variety of experience in their role (Table 1). Based on a lawful provision of single-sex services (according to the UK Equality Act 2010 [3]), non-female workers were difficult to locate for this study. As 75% of qualified social workers and 65% of third sector workers in England identified as female [6, 30], we believed that our sample was reflective of the sector. All 10 interviews were performed, collated and transcribed by the lead researcher.

Findings

We conducted an inductive content analysis [34] in line with Elo & Kyngäs's three stages of open coding, creating categories and abstraction [25] on the collated interview data, and identified three dominant themes.

'Everyday' Technology. Interviewees had few, if any, examples of how technologies had been integrated into existing services. Most participants (eight out of ten) who were interviewed stated that the organisation had a website to: advertise service opening hours; display contact information; and allow service users to locate legal, financial and emotional support. Two participants cited the use of outreach services over the phone, such as a nationally ran helpline with a regional hub, or a number to call for immediate assistance to an incident of violence. Only one organisation stated they were involved in efforts to explore alternative modes of service delivery that did not require heavy dependence on front-line staff. This was achieved through hosting a safeguarded, anonymized forum, and a closed social messaging group, where service users (victim-survivors) could offer support and advice to others using the service. The participant did stress that the work required in moderating service-user-produced content was likely a reason that both these services had not been replicated by smaller organisations. As she summarised *"it's frequently staff you can't spare, and you can't run a sensitive forum half-heartedly"*(P8).

Within care sessions, most interviewees (six out of ten) discussed their desktop at work as a data entry point, where notes following a service user engagement were typed up and stored in encrypted folders. One service provider stated that despite their organisation's goal of optimising performance by entering this data via tablets within the sessions themselves, workers opted to return to paper notes. The interviewee cited the importance of paying attention to service users in sensitive disclosures *"instead of staring up and down from a [tablet] screen"*(P6).

Despite confidence in their existing technology-facilitated services, in line with Freed et al.'s findings [29], interviewees expressed frustration at being unable to *"recommend the right [technical] tools"* (P2) to a service user when asked. All interviewees, when queried further, cited the reason for this was in their familiarity with 'every-day' technologies such as accessing websites and sending emails, but a lack of confidence in using other types of technology such as smartphone applications or tablets. Understandably, if an interviewee lacked experience with a novel technology, they were unlikely to recommend it for fear of *"something going wrong somewhere"* (P9).

Deep-Seated Tensions. Many front-line staff cited problems with a lack of motivation to become involved in multi-agency projects. Many had experiences where conflict arose in a group meeting, one care worker reported her experience with on the creation of a novel steering group, *"with so many voices in the room, people just end up arguing with each other over who lost a tender five years ago"* (P10). Participants identified three reasons why sources of conflict could occur between service providers. Firstly, several participants - particularly public sector workers - stated that many individuals within voluntary organisations had *"decade's worth of history in this area"* (P4), and frequently stayed within the same sector and region. This meant, that as one participant summarized *"it's the same faces"*, with the implication being stressed later in the interview *"that everyone knew everybody else"* (P4). Secondly, the introduction of competitive tendering generated tension between organisations caused by successful and unsuccessful attempts to secure contracts. One public sector worker explained that contracts in this

space directly impacted on overhead and salaries, and their loss could generate animosity: *“in all this rivalry, people almost forget that everyone has the same goal - keeping people safe”* (P5). Finally, some interviewees cited different worker approaches to domestic violence as generating some of the disagreement. Theories on gender and psychology were attributed to having a large impact on the approach organisations would take to designing preventative or reactive approaches to handling violence; *“If you see domestic violence as men’s attack on women, you argue ‘like a feminist’ ... if you think it’s psychological, you might argue for using a gender-symmetrical approach ... if someone challenges your whole belief system, you’re not going to sit there quietly”*(P10).

Working in Silos. All interviewees cited the complexity in handling a domestic violence case, which required multi-agency collaborations between the local authorities, police, social care workers, health practitioners and housing authorities. Frequently, given the scale of the impact of abuse within families meant that many service users required different levels of care for each family members. This coordination required a lot of *“chasing people up”* (P1) for updates on service users via email, and reportedly required excellent communication skills between organizational staff so that *“nothing was missed [in a person’s care]”* (P3). When this system of coordination broke down, *“everything grounds to a halt”* (P6). These events, as many interviewees described encouraged a form of ‘silo mentality’, both within organisations and between organisations. In some instances, participants gave examples of cases where if care could be provided ‘in-house’ for service users this could be preferable than depending on another more specialist organisation.

Despite this emphasis on coordination between different organisations, most third-sector participants expressed slight embarrassment of *“behaving protectively”* (P5) with respect to service users. However, this was frequently justified through explanations of the careful vetting processes required in referrals to services by community members. In addition to this justification, interviewees underlined the amount of staff time invested in a service user, to gain that person’s trust; *“Say someone’s fallen off the radar for years, but then they decide to re-engage with another organisation ... that can sting a little and we can’t chase them”* (P6). Regardless of any discomfort when questioned, interviewees argued this ‘protectiveness’ was *“only natural when spending so much time [during sessions] with someone”* (P3).

5 STAGE TWO: DESIGN DIALOGUE

Following the inductive analysis performed on the interview data to produce three distinctive challenges (*‘Everyday’ Technologies, Deep-Seated Tensions, Working in Silos*), the lead researcher presented these findings back to the local authority

project lead. So as to not fall victim to concerns of simplification or producing an individual solution (as discussed in Domestic Violence & HCI), the research team suggested using a design sprint specifically within this sensitisation stage of the research. This was a way of observing stakeholder collaboration but also familiarising the steering group as to the nature of design activities. As a tangible outcome, the artefact that would emerge at the end of the sensitisation sprint would be purposed to tighten considerations around and deepen discussions for the design of the directory as opposed to concrete design requirements.

Step	Step Description
Target	The group was encouraged to engage with and ‘target’ a key challenge from the lead researcher’s interview findings.
Sketch	Once deciding on a sprint aim, the group were encouraged to represent their suggestions by sketching potential solutions.
Decide	By contrasting each of the individual sketches against each other, the group identified appropriate common features to be combined into a single, final sketch.
Prototype	Students and public sector workers were encouraged to create a design that would provoke further discussion into how the directory could be designed.
Test	In the final stage, five other members of the steering group were positioned as service users of the design, providing their thoughts and suggestions to the final artefact.

Table 2: Design Sprint Stages

Out of concern of influencing the emergence of organic tensions between stakeholders, the lead researcher took a ‘step back’ from this creative project to observe how participants could interpret the brief provided. In her place, two technologically-skilled students who were familiar with design processes but external to the project joined in for the sprint to guide members of the steering board through activities which were observed and audio recorded. Each step of the sprint fitted across five working days, based on Knapp’s 5-step Design Sprint process [40] and was designed to capture a different quality of verbal negotiation and insight into the service providers’ understanding of the directory.

Findings

Over the five full days of a working week, we worked with three public sector members of the steering group (SC2, SC6 and SC10) and two external user-experience students (S1

and S2) from a visiting university in the US. The sprint was hosted at the lead researcher’s workplace which could provide study space, access to the Internet and craft materials for quick sketching. The Design Dialogue commenced with the presentation of the three challenges that were identified through the analysis of interviews in *Stage One* of our process. As the first stage required the targeting of a specific problem, participants of the sprint were first assigned with finding a common factor across the three challenges (*‘Everyday’ Technologies, Deep-Seated Tensions, and Working in Silos*). The group pinpointed the three following assumptions based on these challenges which were purposed into their design;

- (1) The team would design for an ‘everyday’ technology to minimise the service providers’ lack of confidence in using and recommending novel technologies.
- (2) Respectful and careful collaboration would be encouraged on a group task as a way to attempt to subdue tensions running between services.
- (3) A variety of different services within the area would be displayed to improve understanding of other existing organisations, and to discourage silo mentality.

The team concluded the *Design Dialogue* with a presentation of their final design in the form of a geographic map (Figure 3), where people could have the option to browse through the different spatial locations of public services across the city. Once identifying a compatible service for themselves or a family member, the person was then provided with the organisation’s contact information and address.

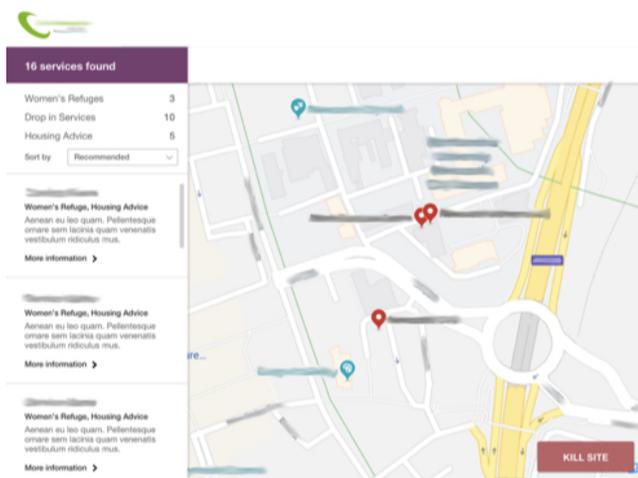


Figure 2: Geographical Mapping Design for Digital Service Directory

The removal of the lead researcher from the design task proved to be successful in permitting the steering board members to articulate the purpose of the project to the external

students. Through her observatory role of experiencing how providers interacted with each other ‘in-situ’, she made the following observations. Members of the Steering Committee were initially hesitant to know how to start in “*getting the ball rolling*” (S2) in the early design activities due to a heavy focus on the end product of the sprint, rather than on the process of the sprint itself. In this regard, the students played an initially supportive and encouraging role which was then returned later in the process by providers, when students struggled to sketch out an idea out of concerns for not responding appropriately to the design brief. With the exception of using the Internet to perform a quick market scan of existing service directories, both groups preferred to use paper materials for the first three days of the sprint. There was a significant shift in dynamic on the introduction of design tools from the end of the third day of the sprint that required familiarity with digital mock-up tools. Despite their previous demonstration of expertise in the lived experience of service users, the public sector workers for the Prototype stage preferred to “*take a back seat*” (SG1) by watching the design students at work during the design of the mock-ups. The students were able to discover a compromise by requesting continuous reflection by providers of the designs being constructed on their computers.

6 STAGE THREE: IDEATION WORKSHOP

Building on the observations of the previous activity, an ideation workshop consisting of two stages was designed to explore further into stakeholder responses to the design of the directory. The workshop consisted of a sensitisation stage for participants to prepare themselves for working in a group, and a secondary design ideation and dialogue capture for designs of the directory. The first activity asked participants to share their aspirations for their job role, before they were then split into small groups that asked them to list one positive and negative of working with different service identities in this space. Different groups were then encouraged to identify thematic similarities in the difficulties of working in this space. In the secondary design ideation, the design (Figure 3) produced by the Design Dialogue was presented to evoke and surface conversation on the design of the directory. Participants were then encouraged to ideate an alternative directory to the artefact presented using paper materials. In striving to acquire a diversity of different stakeholders, ten participants in varying job roles were invited to attend the ideation workshop hosted by the project lead.

Findings

All ten participants who had been invited attended the ideation workshop. One additional health care professional also attended, who had been recruited through word-of-mouth within the local authority, totaling in 6 service providers [SP1

- SP6], 2 service commissioners [SC1 - SC2], 4 steering group members [SG1 - SG4] and 1 health care professional [HC1]. The ideation session, scheduled to last 90 minutes, lasted for 135 minutes to accommodate for nuanced discussions of the directory's design. Following the audio transcription of the workshop, data was collated and the research team used Braun & Clarke's thematic analysis [13] to identify four themes.

Loss of Connection. In the second part of the ideation workshop, participants engaged in discussion around the sprint's design and produced their own dialogical response in the form of their own directory design. This mock-up was drawn using paper materials and replaced the Design Dialogue's geographical map with a conceptual directory consisting of hyperlinks that were connected via different colours depending on the type of the service. Participants emphasised the importance of visibly showing the interconnectivity and coordination of different agencies to deliver effective social care services. When questioned on their divergence in design, participants stressed it was essential to reflect the inner complexity of working practices in service delivery. Interestingly, this group did not only state this visibility was solely for service users to be better equipped for the complexity, but for service deliverers and commissioners themselves to aid in understanding the hidden care processes that were frequently obscured or dismissed within referrals.

Although most participants of the design workshop appreciated the customisability of selecting which services might be best applicable to individual circumstances in the sprint's designs, all participants stressed the complexity in assessing risks within existing relationships. Risk assessments for service user well-being and capability were explained to be carried out face-to-face over a series of social care sessions. Many participants highlighted how victim-survivors were often unaware of the unique risks posed by domestic violence to children and other family members that may require specialist care. These points were both embodied when providers emphasised that their design should be used rather as a *"navigator than a set of signposts"* (SP5) together with providers and trusted community members, to represent the rarely smooth journey that service users would have to take through social care. Institutions, when mapped geographically, could be misinterpreted to be isolated and independent. Services that could not be geographically located for security reasons, such as refuges, were left at a serious disadvantage. Although there was an importance in letting service users know they had options; *"people don't waltz into a service in the same way they might do for finding a supermarket, that's not how it works"* (SG1)

Anxiety of Being Mapped. Due to the fast pace of the commissioning and decommissioning of services, both interviewees

and focus group attendees expressed a lack of space for reflection as to what roles their organisations performed, and what it stood for. Within the map-making exercise in interviews and the focus group, the physical representation of relationships forced organisations to actively reflect on their own values as an entity; who could receive their services, how they could be reached and for what purpose. Each organisation disclosed a regret in not being able to reach people who may need their services, due to a restriction of staff time or finance. As one participant stated; *"...we don't exist in isolation, we exist because there is a public need for the services we can provide"*. (SP5)

All respondents expressed a desire to help all affected individuals, but there was concern over how accessible their services *could* be in response to this need, and also *whose* need they would work with. This appeared to go beyond responding to the lack of resources against the previously described backdrop of austerity localism, and onto whom they deemed was deserving of assistance. Several participants expressed concern in making services for support *"so easily accessible to perpetrators"* (HC1) for fear of trivialising the role of violence to victim-survivors and their families. Although most participants identified that perpetrators needed care and support to encourage a change in behaviour, they paradoxically stated they would be unwilling to handle this through their own services. This balancing of ensuring appropriate access for service users against the relation of accessibility to condoning of violence was discussed at length with the group. We found this concern very interesting as this threw a valid obstacle in the path of the project's primary driving force; increasing accessibility for service providers and users.

Within this visibility was also a worry of exposure, and even for the directory to *"make us [organisation] for what we're not doing"* (SP4) and bypass trusted community member referral processes (*Working in Silos*). The seemingly trivial request of asking participants to describe and represent what it was their organisation did surprisingly incite a fear of judgement of inaction (*'what we're not doing'*). Participants were aware of how this concern appeared inescapable if the organisation had to continue to respond to a 'public need' as SP5 described previously. SP6 described this dilemma in more detail:

"...we're mandated to do awareness raising about the services we provide, but when we do that the number of referrals go up, and so does our waiting list so we have to close it ... If we help everyone, then we can't help anyone". (SP6)

Technology 'Under Control'. Across interviews, the Design Dialogue and focus group, all participants expressed different interpretations of what role they expected technology to

play in the future of their service delivery. Yet at each stage of our research project, participants expressed scepticism that technology could replace the face-to-face delivery of their front-line staff. Instead, digital devices were described as being in support of, or theorised as, an “*extension of what we already do*” (SP3). This could be evidenced through participants suggestions of new technologies for the support of existing service delivery. For example, one participant suggested the use of an application that could permit care workers and medical professionals to discreetly communicate with non-English speaking BME women during sessions. Yet she stressed that the technology could only be purposed effectively if training was in place to detect the warning signs a person may display of being in distress. Many participants agreed that it was service providers who were needed in making the initial contact with the person in need of their services. They could then help to start distributing responsibility and stress away from that individual.

Yet, there appeared to be a balance as to how scalable the form of such a digital solution could be, as one participant stated: “*make a solution too big and companies will inevitably want to profit off it*” (SC2). This sentiment seemingly reflected the concerns for regarding financial restrictions on open data-sharing within this space. As a result, each participant, although stressing their interest in designing larger solutions or approaches to violence prevention was doubtful that such a technology could “*stay in their control for long*” (SC1).

Researcher (Non-)Reciprocity. Participants were initially reluctant to provide insight into their service, their relationships with other organisations and their own job role. When questioned, several participants cited this was down to their justified concern for the motivations of the purpose of the research. As SP2 stated;

“... *we're tied down to designing our services based on evidence, this doesn't mean that we've always had the best relationship with the researchers who've collected it. Sometimes, people enter, take what they need, publish in places we can't reach and then ... leave us to clear up. We've had to start limiting whom we work with from what we call 'researcher fatigue'*”.

We found this to be an interesting revelation, as participants were less focused on the produced research, whether or not mis-representative in nature, and more on the process of doing research itself. Yet this characterisation of the researcher was not universally negative in all cases, with many participants placing the researcher in a harmonious role that could bring typically “*fragmented partners into a collaborative, coordinated approach*” (SP1). Despite outlining stretched work schedules, service providers frequently expressed gratitude in participating in the research that provided a change from their normal routine; “*With researchers, well it can be*

quite nice because it means you feel good about something and you take that back to your clients [service users] whilst thinking 'well I really enjoyed that interlude'”. (HC1)

7 DISCUSSION

Our application of an AR approach to the design of a service directory for domestic violence service providers brings both opportunities and challenges for collaborative work within service delivery.

Mapping as Surfacing Issues

Ready access to services for victim-survivors, perpetrators, families and those affected by violence is a core concern for providers [42]. Our work complements Freed et al.'s previous findings that professionals viewed an important aspect of their job as “*providing clients with information and options*” [28]. Yet, providers also have significant anxieties about being scrutinized (for ‘*what we're not doing*’) and overwhelmed with referrals. This is clearly not a problem that can be simply solved through the provision of a service map. As our participants have expressed at every stage of our process, despite their desire to reach people who may need assistance, they are mindful of not jeopardising existing services. Through our study, we identified that the act of making a directory, in and of itself was perceived as posing a risk to existing services, that could negatively impact their already strained provision.

When we pose domestic violence as a problem to address service ‘access’ alone it is inevitable that the response is to provide an aid to navigation of these services by way of a map. Yet, the methods we used in our interviews, design dialogues and the ideation session, brought the very idea of creating a service map into contention. Nardi and O'Day's information ecologies [46] provide a useful framing to recognise the interconnectivity between providers we encountered and described in our project; as well as the fragile balancing act that delivering these services entail. Understanding this is critical to heighten our awareness of the potential negative impact that a digital service navigation system could introduce to these services.

In mapping and contextualizing this environment, designers and technologists should ask themselves who may benefit from a technological response (such as a map in our case), and who is at risk of being disadvantaged. Indeed, the process of turning a service directory into a digital artefact like a map, is in and of itself is a political process tied to complex and fragile information ecologies; but also to the socio-political and economic realities that we must engage with if we wish to intervene and design in these spaces [57]. What our process surfaced is that a directory map was perceived as being a potential cause of demand that would overload already strained services (“*If we help everyone, then we can't help anyone*”).

Our study, and previous work [20, 21], demonstrates the value of using technological artefacts as means to provoke dialogical discussions and support the collective (yet sensitive) exploration and articulation of issues and consequences that may not be otherwise uncovered in such nuanced ways. HCI researchers and community groups could consider how the use of scoping interviews may be carefully designed to characterise and penetrate the socio-political complexity of these issues.

Working Within the Hyperlocal

Our participants were acutely aware of the difficulties of 'working towards the same goal' (P5) in such politically-sensitive settings. We have seen how, even with genuine enthusiasm for the prospect of developing digital collaborative multi-agency systems, there are still notable limiting factors. These included factors such as the way service providers wished to retain control and oversight over service users, and over the 'scaling up' of technology. Given the context of the UK Localism Act, a 51% reduction in local authority budgets in the past four years, and a space where collaboration is fundamental - we as researchers must understand that these organisations are operating within a culture that configures them to compete against each other for contracts and control [15]. A socio-political context that frames service providers as competitors, undoubtedly complicates collective approaches to violence prevention. As such, our efforts to facilitate interagency collaboration initially was met with suspicion. This is understandable, as designing for the public-sector/third-sector interface, one is not simply designing for domestic violence services, but also designing for organisations that operate within their specific local political landscape, in our specific case within austerity localism, as Featherstone et al. [27].

Public and third sector organisations are already highly skilled in using pro-social processes to leverage social and technical resources within their organisations, and the community at large [17, 45]. When we design for this space, it is not only the local context that we must take into consideration but the unique local character of a service organisation itself. Especially as researchers in the design for civic spaces [16, 47], we are inevitably confronted with very complex realities and false dichotomies. For example, when our participants were concerned at being 'too accessible' (*Anxiety of Being Mapped*), we believe that this should not be interpreted as a choice between good service for some or a bad service for all. We suggest that the introduction of a map may inadvertently undermine the trusted, careful work of people offering hidden services. These are frequently members of a community (such as a general practitioner, a teacher and so on), that are entrusted by a service to refer and support service users through a gradual, considered referral process. As we

contribute to Dow et al.'s [24] observation that there exists capacity for informal social care services, such as cinemas and cafes, we acknowledge the informal personal practices by community members to ensure that appropriate referrals take place.

This, in fact, raises concerns whether the single point of access or 'front door' to services that a service directory provider is preferable to the current mechanisms. When we attempt to externalise a service, such as making a service visible through a single point of access, we fail to recognise the true scope of their provision and can undermine these careful practices of tacit knowledge of a locale. Exploring how technologies can create new connections and support at the hyperlocal level and among disparate communities, beyond domestic violence service providers could provide a fruitful research avenue for HCI [11, 31]. Researchers should look to community members whom possess a rich, historical understanding of the area and the politics behind competitive service delivery to appreciate the benefits or drawbacks a novel technology might bring to the space.

Mutually Sensitising to 'The Bigger Picture'

Sensitisation has been the historical process of developing a researcher's understanding of a participant's point of view, practical activities and circumstances that occur in their daily lives [12, 53]. Yet, only a few pieces of research have looked at the sensitisation process with concerns for the researchers themselves. As Akama et al. [7] ask, '*how do we, as researchers, prepare ourselves for the uncertain process of designing with others?*'. The three-stage process we designed in our study, allowed us to gradually reveal the deeper and nuanced complexities and tensions that can exist in the relationships between service providers, and between collaborators and the researcher. This process didn't make the uncertainty go away but simply helped us embrace that we could be certain of further uncertainty, especially against the backdrop of a service landscape in a "*state of flux*" [38].

There is a great variety of different research contexts HCI researchers already operate within, further concern for the inclusion of more marginalised voices in research endeavours [14]. What was valuable about the process we presented is that it allowed us to be responsive to our specific context and surrounding, while ensuring marginal voices could find a space to be heard at each stage. Paying attention to how we pay attention, honours the uncertainty of these encounters while offering the best chance of a meaningful outcome [7].

Within our project, in addition to the sensitisation of the research, we explicitly address the collaborators' sensitisation to the design methods and practices (the Design Dialogue in particular). While sensitisation is already an important element of Participatory Design and Action Research [12, 43],

the sensitisation of participants to the research methods employed is rarely described. In line with Slovák et al. [51] suggestion that sensitisation to reflection needs to be “*carefully scaffolded*”, we believe our three-stage process contributes to the body of work with regard to sensitive design, by slowing down the sensitisation process and allowing more space for reflection. Beyond this, our work suggests that sensitization should be practiced by researchers and community groups as an on-going, unfolding process, such as the one we have described in our study, that can be iterated and continually improved as complexities are gradually revealed.

8 CONCLUSION

In this study, we have presented a three-stage process designed to provoke dialogue between domestic violence service providers in the ideation stages of a public service directory. In reporting our study, we have focused on the methods we used to capture different forms of dialogue that were elicited at each stage, that gradually unfolded deeper tensions and nuances that were inherent within this sensitive landscape. We highlighted service providers’ varying levels of technical competence, strained relationships with other organisations, and their anxiety at being potentially exposed to either criticism or oversubscribed through the use of a digital directory. Taken together, our findings contribute a nuanced reality of designing a collaborative digital system with service providers of domestic violence against the backdrop of UK austerity localism. We suggest a number of considerations for HCI researchers and designers in moving towards in a collective response to the devastating impact of domestic violence.

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