

Technologies and Social Justice Outcomes in Sex Work Charities: Fighting Stigma, Saving Lives

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ABSTRACT

Sex workers' rights are human rights, and as such are an issue inherently based in social, criminal, and political justice debates. As HCI continues to move towards feminist and social justice oriented research and design approaches, we argue that we need to take into consideration the difficulties faced by sex workers; and explore how technology can and does mediate social justice outcomes for them. We contribute directly to this challenge by providing an empirical account of a charity whose work is built on the underlying move towards social and criminal justice for sex workers in the UK. Through ethnographic fieldwork, meetings, interviews, surveys, and creative workshops we describe the different points of view associated with the charity from a variety of stakeholders. We discuss their service provision and the ways in which HCI is uniquely positioned to be able respond to the needs of and to support sex work support services.

Author Keywords

Social justice; activism; sex work; ethnography; charities; feminist HCI.

ACM Classification Keywords

K.4.1 Public Policy Issues (Human safety)

INTRODUCTION

"If you care about gender equality or poverty or migration or public health, then sex worker rights matter to you" – Toni Mac, member of the Sex Worker Open University, the English Collective of Prostitutes, and a sex worker [36].

Within HCI there has been a shift towards more socially complex topics [14,17,51,52,59] and a subsequent adoption of methodologies [8,21,29,58] that begin to take this complexity into consideration. This move has been shown through innovations in building technologies that address social justice issues, but also in thinking more theoretically around topics such as postcolonial computing [28,29],

feminist HCI [7,47], social justice-oriented interaction design [21], the move towards seeing participants as citizens and agents within the research [43] and the importance of including various stakeholders in studies [18]. With this paper we extend this work and address marginalisation and social injustice as they relate to sex workers, and how institutional and individual use of digital technology can enable collaborative and cumulative social justice outcomes. We explore the technological reality and needs of a national charity working to reduce stigma attached to, and violence experienced by sex workers called National Ugly Mugs (NUM). Through the involvement of various stakeholders (charity staff, charity board, their members and their social media followings) we introduce an argument for HCI, and particularly social justice-oriented HCI [21], to engage and work with a variety of sex workers and sex work related groups, organisations, and charities.

Our contributions to HCI are threefold: (1) we bring to the forefront the importance of addressing sex work and sex worker rights as part of HCI's move towards social justice, feminist, activist and digital civics approaches; (2) we provide an empirical study of the ways in which a support service utilises mundane technologies in innovative ways; and (3) we discuss the digital mediation of social justice outcomes. With this paper we argue for the continuation of the socially-oriented trend in HCI by extending conversations in civic engagement to the realm of sex worker rights and the underlying social and criminal justice advocacy within this, particularly understanding how technology mediates directed and diffuse social justice outcomes and where tensions arise among the material forms of social justice. We embrace the complex interplay of these approaches when working in a politically, socially and culturally complex space. In doing so, we explore the unique and important challenges faced in this space and elaborate on opportunities that these challenges present for future research.

BACKGROUND AND RELATED WORK

We situate our work predominantly as it relates to sex work in the UK. We provide an overview of the current legal, political and policing standing of sex work in the UK, before demonstrating HCI's existing work on social justice, sex work and related industries.

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Sex Work in the UK

Sex work is typically understood to be the exchange of a sexual service for pay. This might include services which involve bodily contact (for example, penetrative or oral sex), massage or other types of body work or the provision of particular intimate encounters (e.g. the girlfriend experience, wherein the hours paid for by the client may involve activities other than sex or bodily contact). Non-contact sexual services (e.g. virtual services like web-cam sex, phone sex, or sex chat) can be considered sex work, although this is sometimes contested – for example, some exotic dancers reject the term sex worker.

People of all genders buy and sell sex; legal frameworks relating to sex work in England and Wales (prostitution law in Scotland and Northern Ireland is devolved) are gender neutral, following a regulationist system where it is legal for individual consenting adults to engage in sex for pay in a private space [27]. Having said this, there is a range of provisions in place to make the industry invisible: soliciting for the purposes of prostitution, loitering and working off-street with others all violate the law. Evidence suggests that this regulatory system is harmful to sex workers, forcing them to choose between arguably safer modalities of work (inside, together) and breaking the law [45].

In January 2015 the Home Affairs Select Committee (HASC) launched an inquiry in England and Wales on prostitution law. The interim report published in July 2016 recommend that individuals should be able to work together off-street for safety, that soliciting should be decriminalised and that previous cautions and convictions should be deleted from the records of sex workers [31]. The report has been welcomed by sex workers and allies; calls for the full decriminalisation of the sex industry (as recommended by Amnesty International [5]) have been made. Radical feminist groups, who argue that sex work is intrinsically exploitative and that the sex industry should be abolished, have responded that the committee should reconsider a prohibitionist mode of regulation wherein the purchase of sex is criminalised (otherwise known as the ‘Swedish Model’).

In terms of on-the-ground regulation, the relationship between sex workers and police is geographically varied. However, historically relationships have been strained; the quasi-criminalised status of sex work, the stigma experienced by sex workers, previous poor experience, police services positioning them as ‘undeserving victims’ and concerns about being ‘outed’ as a sex worker are all barriers to reporting crimes [57]. Both individually and collectively, however, sex workers have developed methods of working to enhance safety and wellbeing: for example through peer-to-peer reporting systems, screening processes and sharing information about potentially dangerous clients. Specialist services have also worked hard to develop relationships with local agencies to provide case management and integrated care for this “*marginalised and*

dynamic” [24] group, despite recent funding cuts, changes in policing, and a political shift towards ‘exiting’ (or supporting sex workers to stop sex working) rather than support for evidence based public health approaches [24].

Sex, Sex Work, and HCI

The sex industry, and practices of buying and selling sex have evolved alongside societal developments, perhaps most importantly technology. Cunningham [16] raises important legal and regulatory questions in ‘Prostitution 2.0’ where online activity incentivises reputation-building and screening of the sex worker to reduce risks and social stigma of sex work, although this was only found to be the case in some age groups. According to Cunningham, sex workers who solicit online engage in less risky behaviour, although street based workers who are displaced to this space carry on their existing, risky, behaviours. Peppet [44] builds on these by outlining his imagined ‘Prostitution 3.0’ where a third-party internet provider mediates an exchange between client and sex worker that determines whether the client or sex worker has a history of violence or crime, their health status at their last sexual health testing, and cross-references any reported misbehavior from other sex workers and shares this information anonymously. Upon meeting both parties undergo an iris scan to ensure they are the “*safe, healthy, and uncoerced counterpart*” they were expecting. Through this, Peppet believes the intermediary is legally obligated to maintain confidentiality of both identities, but also that intelligence will be shared with law enforcement if the interaction results in violence, fraud, or disease transmission. While he addresses the need for laws and policy to change, he does not take into consideration in the imagined scenario the societal change that would need to occur to make this kind of transaction safer for both parties; it also removes any possibility of independent sex working.

In HCI there is little work that addresses the sex industry directly; some studies aim to demystify porn [53], and explore how users interact with the popular ‘porn 2.0’ site: YouPorn, others describe user taxonomies of free internet pornography on Reddit [50], or classify pornographic image detection as a one-class classification task [35]. While all of these papers address an element of sex work (pornography), they all conducted their work with pornography that is freely available on the internet rather than addressing it as a sex working issue.

Furthermore, HCI has begun to discuss sex from a sex-positive feminist perspective through workshops and publications (eg. workshops such as “Why we should talk about sex” [11] and papers on pleasure [6] and sex toys for sexual wellbeing [22]). Playful and creative interactions are being used to develop discourses around sex and sexuality [60], and women’s sexual health [3,4]. Contrastingly, when exploring the world of (*voluntary* [2]) sex work and (*forced* [2]) sex labour, HCI seems to have focused on more traditional views and methodologies, looking at the role of

data sources in human trafficking [49,56] and sex tourism [19].

Although sex workers are often seen as being marginalised in society and hard-to-reach, in regards to technology they “*represent a unique demographic for high technology penetration, multiple devices per person, and intensive usage in their everyday practices.*” [48] Sambasivan et al., for example, have designed a phone broadcasting system for urban sex workers in India [48] in collaboration with a charity and have improved reach and informed sex workers about health issues. Wall et al. [55] have taken a health-focus on sex work in Zambia, where it was found that fingerprint-linked patient tracking and data collection was a feasible option in resource restrained areas (although the sex workers often refused to give their fingerprints due to a perceived lack of privacy).

The contrast between feminist HCI literature, [7,8] with its link to pleasure in sex [6,22], and sex work within HCI [19,48,55] is striking. While the feminist side explores the positives of sex, putting the woman and her pleasure at the centre, the sex work and labour literature sees sex workers as women who need to be tracked and informed about health issues in a top-down model. This opens up a space that takes into consideration the self-efficacy of sex workers, political concerns of the sex worker rights movement, relational models and approaches and the potential to open up space for sex workers of all genders.

With this paper we hope to move the conversation of social justice-oriented HCI towards a space that has traditionally not been explored: sex work. We do this through a case study of a charity working with digital technologies as facilitators for their work. They do this with sex workers, other organisations, police and policy development to fulfil their aim of ‘fighting stigma, saving lives’. Through our case study we make light of the views stakeholders have of the charity and the work they do.

CASE STUDY: NATIONAL UGLY MUGS

The role of NUM is to reduce and tackle violence against sex workers, fight stigma, campaign for the rights of sex workers and to fight for criminal and social justice outcomes. Their approach to this is underlined by principles of social justice, as the CEO points out, recognising their political role: “*The work we do makes us an authority on the issue and with that comes a responsibility to advocate for change. If our mission is to improve the safety of sex workers how can we remain silent when policies are introduced that will harm them?*” [23]

They are a membership charity, meaning that their services are only available to those who have signed up through their website. It is only after a background check that people will be accepted as members; only sex workers, escort sites, establishments and organisations who directly support sex workers are able to join. Once a member, all the direct services provided by NUM are available: the ability

to file a report, receiving alerts and the possibility to cross-check whether a client’s phone number has previously been reported through the number checker. In addition to these direct services to members, NUM play an advocacy role alongside other sex worker rights advocates on social media, in blogs and other online publications. They also provide training for police and front-line service providers, function as a point of contact for good practice guidance and signpost to other support services that cater to sex workers.

Much of the work NUM do is conducted by or through the use of traditional technologies in innovative ways. NUM has taken the bottom-up approach of ‘ugly mugs’ schemes (the process of sharing information about dangerous clients and situations among sex workers to warn others of potential harms) and utilise digital technologies to share information on a national scale. The technology enables them to be more efficient in how they share the information and gives them the unique possibility of recording acts of violence committed against sex workers. The front-line services and advocacy work NUM do creates a space where they are utilising bottom-up approaches to support top-down dissemination of the information they collect.

METHODOLOGY

This study is based in a socially, politically, culturally and technologically complex design space. We take a feminist research approach that incorporates the importance of complexity [10,18,54], relationships [20] and values of culture, locality and language as part of the context we are working within [9,28–30,37]. As part of this, we see our collaboration with NUM as a mutually beneficial partnership where the work we do supports their service provision while also leading towards the design, development, and evaluation of novel technologies. As such, we respond to Law’s wish to see researchers work “*as happily, creatively and generously as possible*” [33].

Researcher Self-Disclosure

The first author is an ally to the sex worker rights movement, favouring the decriminalization of the industry. The authors have collaborated with NUM for a year on this project; one author is on the board of the charity, and another of the authors has supported NUM through social media and at events. Each author relates differently to sex work and the sex worker rights movement, but are all in favour of the decriminalization of the industry, and are in support of putting including sex worker voices in research and policy development.

METHODS AND PARTICIPANTS

As described above, this paper addresses an inherently political topic with varying viewpoints. Following our feminist methodology, we engaged in multiple methods to address concerns from different groups, individuals and perspectives. While we strove for inclusivity, recruiting participants who are sex workers is difficult. Because of this, we engaged in recruitment through the large NUM

membership base, as well as their social media following, and engaged with one other charity who is a member of NUM that works directly with sex workers working primarily on the streets. This recruitment strategy brought about a tension between the attempt at diversity and recruiting through channels that already engage with NUM. Because of this, most respondents were NUM members at the time of the study, which means that the views represented in this paper are only the views of those who know about NUM and have felt the charity has enough value to go through the membership sign-up process.

To reach as many different voices as possible, and to utilise existing research and service delivery practices of NUM and our other partners, we employed five data collection methods: two surveys, interviews, workshops, and ethnographic fieldwork. In order to give the entire membership of NUM (sex workers, organisations, charities, and projects working with sex workers or in spaces where service users are likely to be sex working, as well as establishments where sex workers work) a chance to take part, we developed a survey for sex workers, and a survey for members of staff working in organisations, charities or projects that are members. From these surveys we recruited individuals to take part in (phone) interviews or have meetings with us. This approach allowed us to reach rural and mobile workers. In order to engage sex workers working from the street (who were underrepresented in our surveys and interviews) we developed workshops for participants during regular drop-in sessions at a specific health and wellbeing charity. In order to obtain a more in-depth understanding of NUM staff opinions we conducted ethnographic fieldwork that was supported by formal and informal interviews with staff and an analysis of NUM's social media networks and online presence through their website and publications.

In total, 78 participants directly responded to the surveys (50 sex workers and 28 project staff), 10 took part in interviews (4 staff and 6 sex workers – 3 cis women, 1 cis man, 2 trans women) and 12 in design workshops (although more women were present during the drop-in times). In total, NUM employs seven staff, who comprised the immediate network of participants in the ethnographic fieldwork.

FINDINGS: UNDERSTANDING NUM

Here we collate and intersperse the findings from surveys, interviews, workshops and personal field notes to provide details around the expectations NUM members have of the organisation, the reporting and alerting process and the different understandings of what NUM is from different stakeholders by providing vignettes alongside other sources of data we collected.

Members' expectations of NUM

When asked why members signed up to the NUM scheme, 72.6% of respondents replied that they had wanted to receive alerts of dangerous people and situations. The

majority of these people (41.8%) wanted to receive these alerts via e-mail, 17.6% wanted to receive them via SMS and 13.2% wanted to look up alerts by logging in to the NUM website and going through the archive of alerts. 18.7% of respondents said they wanted to join the scheme to use the number checker. The number checker is a piece of software where members can enter any phone number to check whether a report has been made including that phone number. If a report had been made, this is flagged up by the system and the sex worker is then able to make a more informed decision as to whether or not to see the client. Despite the large number of people wanting to receive alerts, only 6.6% of members initially signed up to make a report themselves.

Both sex workers and staff from other charities reported a high level of satisfaction with the NUM scheme: 87% of sex workers and 95.7% of staff from other charities said their expectations had been met. One participant said: *"I receive relevant updates, they give me all the information I need to know and I can keep track for future reference"*. Many of the responses however were pragmatic, but also very emotional: *"This is the first time since working in the business that I've ever been warned properly about potential abusers."* While statements like this draw immediate attention to the positive outcomes of engaging with NUM, they also allude to the political nature of sex work and the charity sector within this space: despite a large number of charities across the UK supporting and offering services for sex workers, not all services are supportive in the ways in which sex workers want to be supported. Despite local ugly mugs schemes created by charities, some respondents did not feel informed well enough about the dangers of their work. One respondent made this clear in their statement: *"It gives me an extra peace of mind about the client"*.

Social Justice Outcomes

Some of the complexities of the social justice outcomes associated with sex workers and NUM can be found in a rap written collaboratively by sex workers, volunteers, centre staff, NUM staff and the first author at the centre the creative workshops were held at:

*There once was a ugly mug
Who behaved just like a thug
He thought he was clever and would be free forever
Alas he was wrong, for the women were strong and all stuck together
Reporting his dong
The women rejoiced at the time
For he was punished for his crime*

The collaboration brought out conversations around the purpose of reporting as well as more nuanced conversations on how the women would react to an 'ugly mug' being sentenced for the crime they committed. In light of the particular experiences of one sex worker (who had been assaulted, reported that crime through NUM, shared information with police and whose perpetrator was sentenced to over 15 years in prison for his crimes) the

ending was changed to reflect the following: the women were pleased that the perpetrator had been punished, but since the feelings associated with such a crime, from the survivors' perspective, would not disappear with the verdict, they would still not feel safe in their work. While achieving a desired criminal justice outcome, the rap highlights some of the varied social justice outcomes that are related to crime, such as continued feeling of vulnerability, injustice and emotional distress.

Volunteers and sex workers alike took the workshop to stand in solidarity with sex workers who had experienced violent crimes, and as a chance to spread positive messages around staying safe, the positive emotions that come out of reporting a crime and the support that is available if someone were to report a crime committed against them. The outcomes are now hung up in the drop-in space to continue to allow for the women to share their stories, to showcase the work they have done and to open conversations around violence committed against sex workers, and to reduce the stigma.

Reports and Alerts

One of the main foci of the pilot evaluation [32] that was carried out as part of the initial NUM scheme and one of the main reasons for sex workers to join the scheme (72.6%) is the alerting process. Since *"the system only works if people make reports"*, however, we will also address the reporting aspect of the charity as these two services are inherently intertwined. As mentioned before, sex workers are able to report crimes committed against them to NUM who will then turn this report into alerts for other sex workers.

There are several ways in which sex workers can report crimes committed against them to NUM:

- (1) They can become members themselves and access services including alerts, the number checker, and completing an online report form directly.
- (2) They can engage with an organisation that is a member: be able to access the front-line services provided by them as well as those provided by NUM. Organisational members are guided to share all alerts relevant to their area, and according to good practice guidance of NUM, should be supporting the reporting process.

In order to explore the reporting practices in more detail, we used website analytics, surveys, interviews and the ethnographic fieldwork. Once logged in on the website 12% of the members head directly to the 'Report' tab from the homepage. On average they spend only 13 seconds deciding which kind of report they would like to make: (1) a full report, (2) a mini report, or (3) download the form. 52% of the people on this page then decide to make a full report. Each full report form is auto-filled with basic information provided by the members' profile and is given a unique number. On average they spend 13:42 minutes writing this report. Once on the 'Full Report' page there is a

0% bounce rate, meaning that a member who clicks this page interacts with the page in some way before leaving it; it does not, however, mean that everyone who accesses the page fills out and makes a report. 27% of members exit the website from this page and 13% go back to the homepage.

Despite most people interacting with the form in some way, not everyone who starts to fill out the form finishes it. Some sex workers have said that filling out the form is *"cathartic"*, but for many the form is too long and complex to fill out for incidents that are not seen as 'violent enough'. This idea is also supported by missing identifying unique numbers of report forms that reach the organisation: each time a report form is opened on the website it is given a unique number, so when NUM staff receive report 122 and 124, it becomes clear that whoever opened the form to start a report between those two (123) did not finish the report.

Depending on the level of consent given by the person filing the report, NUM process the information to be shared with police either anonymously or with contact information from the reportee. If the reporting member chooses to take the next step and report to the police, NUM will support them in doing so with the view of achieving a criminal justice outcome where possible. So far NUM have assisted in the conviction of 22 serial offenders [40]. Below, we provide an example of one way in which sex workers report to NUM and how this process affects them.

Those who have reported an incident did this mainly to *"warn other sex workers in the area"* but also to feel strong or safe: *"There is a sense of emotional security knowing that there is an organisation that is on the side of sex workers and our lives, safety, physical and emotional welfare is of importance"* and another respondent said that *"NUM emails help to remind me not to be complacent"*.

Even those who have not reported an incident, or those who do not engage in *"vanilla"* sex work (work that is culturally seen as standard or conventional sex work – the respondent who used this term was a dominatrix) and as such feel like they have very different experiences of the work they are doing, see the scheme as a chance to fight back against social and criminal injustices against sex workers: *"it's a great idea as for years working girls have been abused and said nothing now they can"*. In a way, the act of reporting (and even simply receiving alerts) becomes a type of activism that empowers sex workers to speak up for their human and labour rights. On top of this, monitoring data that has been collected by NUM over the years has been used in campaigns and reports organised and written by, with and for sex worker rights activists.

Having said all of this, it became increasingly clear through the survey, but particularly when talking to sex workers about the scheme in interviews and informal chats, that a certain threshold needs to be crossed for a sex worker to report to NUM: *"It wasn't a big incident, just a jerk so gave an informal heads up"*. This informal 'heads up' was

given on a specific alerting thread on an online forum for sex workers not associated with NUM. Despite NUM making it clear in their training and on their website that any incident can be reported through their systems, the length of the form, and the time and effort it takes to communicate the incident makes some people think twice about putting in a report if *“It was not a violent offence, simply harassment or persistent time wasting”*. Many members use other informal alerting forums, sites and networks for incidents that they feel are not significant enough to write a NUM report for. Consequently, the organisation comes to represent specific forms of violence and abuse (ones meriting criminal prosecution), and the modes of reporting and interaction support this focus. More informal and peer-to-peer modes of sharing reports, and therefore possibly achieving preventative (i.e. avoidance) outcomes, end up not being fully integrated into the service or the collectivising work NUM undertakes.

Reporting Practices

According to the sex workers we communicated with, the entirety of NUM can only function if *“reports are being made”*, but what role does NUM reporting play in the fabric that is an age old practice of ugly mugs reports among sex workers? Historically, this is a peer-to-peer practice that has been adapted and changed by several local projects developing paper-based area specific ugly mugs schemes, and later a national technology-supported ugly mugs scheme to widen reach, increase efficiency and increase social and criminal justice outcomes for the sex worker rights movement as a whole. Digital technology has mediated the possible expansion of such schemes to the national (and potentially global) scale. The social justice outcomes reported by sex workers in this study demonstrate social, affective and political complexities at the individual scale, though the broader picture is a positive one – NUM moves support workers closer to positive outcomes and supports continued restorative work beyond victimisation. As such, the reporting and alerting practices no longer (only) serve to increase safety among sex workers, but also to record these incidents and as such be able to argue for policy change.

We have shown that different people have different expectations of and feelings towards the social and criminal justice process and outcomes of a report, as well as the writing of the report in itself. Simply, reporting mechanisms need to allow people with diverse backgrounds, needs, experience of use and access to technologies to be able to make reports. Although underreporting of crimes committed against sex workers has improved by NUM practice [40], there are still certain crimes committed against sex workers that are not necessarily seen as crimes, but rather as ‘hazards of the job’ (e.g. verbal abuse). These crimes need to be reported, and should be reported, so any future developments of the reporting mechanisms at NUM should take this into consideration – perhaps this could be done by creating a part of the form or even a new form for

those incidents where punters are *“just a jerk”* that do not necessarily require criminal justice action but are useful intelligence for monitoring social justice improvements among sex workers in longitudinal studies. Sex workers are already engaging in these practices in peer-to-peer alerting forums and providing mechanisms which record such acts can make visible the multiple forms of violence against sex workers and the social (as well as criminal) injustice associated with it.

Alerting Practices

NUM members file reports as an act of solidarity among sex workers and to warn others, which in turn makes all those involved in the alerting (the person writing the report to form the alert, and the person reading the alert) feel safer.

When talking to women who engage with NUM through a third party it has become evident that there is no clear distinction between that organisation and NUM when it comes to reporting and alerting practices. Taking into account that members who engage with NUM through third parties tend to be sex workers with more chaotic lives than those who directly engage with the NUM form, the overwhelming majority of people who interact directly with NUM did this to receive alerts. Regardless of how sex workers receive alerts they help to give them a sense of emotional and perceived security as well as a direct change in practice (it has been calculated that 1,600 crimes have been prevented and due to a NUM alert [40]). Having said this, depending on the different groups of people that receive alerts, NUM’s brand identity and trustworthiness fluctuates in importance. If, for example, we take a woman who engaged with a charity, NUM’s name is arguably not too important: they trust that the support service is providing them with reliable information. For a sex worker going directly to NUM, however, the trust that the charity has built up over the years, and the emotional security they provide as described above, become a driving force in whether they are going to report (and as such create an alert of) a crime committed against them. As such, the alerts (regardless of whether they received this from an online forum, a booklet or wall in a third party office space, or directly from NUM via e-mail, SMS, or their website) are invaluable to sex workers and are an example of information and communication practices and experiences [21] and a means of addressing social justice concerns.

DISCUSSION: A DIFFERENT SIDE OF NUM

The seemingly straightforward reporting and alerting processes to feel safer and more knowledgeably about ‘ugly mugs’ becomes more complicated when also addressing the ways in which NUM staff see the work they do. For the staff the reason for this entire process is to improve the underpinning criminal and social justice outcomes for sex workers: *“If we didn’t speak out to change these laws or challenge unacceptable policing wouldn’t we be neglecting our duty?”* [23]. Their duty is to have a political standpoint on sex work, policy and laws, to not only provide this work

as an act of charity but to genuinely care about the outcomes of the work they do, and to find ways in which the charity can advocate for these political and socio-cultural outcomes while simultaneously being allies to sex workers. As such, they were also involved in the designing of this study, particularly the surveys. This shows the investment of NUM staff in the project as a whole. Since the design of the survey was a collaboration between all of these stakeholders, the outcomes were also possible to utilise in a number of ways: for training purposes (some of the findings from the surveys were used in police training for a specific local force), for annual reports, grant applications (some of the quantitative and qualitative data we collected will be used to support their claims), publications and implications for future design work that may be carried out with the organisation.

NUM as a charity and NUM as individual members of staff are continuously involved in different aspects related to sex work rights activism. They engage with sex workers, policy changes, academics, journalists and others about their thoughts on topics and discuss these in the office. They often incorporate arguments that come out of research they have read, and engage in conversation with sex workers around these topics. They are politically active on social media, particularly Twitter, and regularly engage in activist activities to assist their members' causes.

NUM are engaged in politics; they provide charity, advocacy, and allyship while also thoroughly caring for sex worker wellbeing. This is exemplified in their involvement to remove a map that was released in May 2016 and contained sex workers' names, addresses and phone numbers; in some cases these were personal and non-public pieces of information that also included sex workers' non-working names. The map was allegedly crowdsourced and shared by an anti-sex work campaign group in Germany, and media outlets and sex workers have called the creation of it 'The German Whore Hunt 2.0'. After being informed about this by sex workers on Twitter, NUM staff joined in the activism that took part overnight to file as many reports against this map as possible, to force Google to remove it. While this wouldn't stop the information being on the internet, as anyone could have downloaded or saved all the information while it was online, it was a deed of activism to attempt to protect the identities of sex workers. Although sex work is legalised in Germany, there is still a lot of stigma attached to the profession, and many workers keep their job secret from friends, relatives or other employers.

This is an example of the work that is carried out by NUM members of staff that is often hidden. While they utilise social media to mobilise their members, this kind of work is seen as separate from the 'actual' work, both geographically and practically, that NUM does: the national reporting and alerting system. As was shown above, members of the organisation see NUM as an organisation

that alerts sex workers of ugly mugs; they do not see them as political leaders in sex work debates despite seeing them on social media and at events. In this sense, NUM's digital activities are themselves fragmented, though not to their detriment. Rather, the ability to act in multiple arenas and across spaces allows NUM to actively create social justice outcomes for sex workers.

Mobilisation Practices

NUM's mission statement is itself a call for mobilisation: it is possible to end violence against sex workers only by addressing the problem through multiple channels. NUM sees the alerting and reporting practices as means to an end in social and criminal justice, rather than the end in themselves. NUM chooses to do this through safeguarding, protecting and advocating for and with sex workers. Here we outline three ways in which NUM mobilises their members. Through this they challenge existing power structures [39] (moving power towards sex workers and away from police and charities) to create the type of participatory structure that can lead to empowerment.

For many of the NUM members, the reporting and alerting processes are the main purpose of the charity. At the same time, however, NUM utilises social media, policy documents [41,42] and publications [12,23] to mobilise their members. As such, social media in itself becomes a mobilisation tool through which NUM is able to find, disseminate and interact with overtly and covertly political campaigns (for example their involvement in the 'German Whore Hunt 2.0'). More research is needed to fully understand their use of social media as a tool for political mobilisation in the sex worker rights movement, but staying within the scope of this paper, social media is one means in which they mobilise.

Another means of mobilising members is the reporting process in itself. By providing members with the possibility of sharing information with police, NUM is creating a mobilisation platform that gives those using it full autonomy in how to (or even whether) to use it. By telling their story and alerting others, they are creating a movement to remove the taboo of addressing crimes committed against sex workers (which can be seen as a social justice outcome of NUM). At the same time, the chance to share intelligence with police also allows direct empowerment through the criminal justice process. On a collective level the accumulation of this data is creating a space for NUM to advocate for policy change [41,42], as they have done successfully in the most recent Home Affairs Select Committee that urges a change in law to decriminalise sex workers operating together [26].

A third way in which NUM services are a means of mobilising activists in the sex worker rights movement for social justice outcomes is through research. Over the years NUM have conducted their own research projects [32] and have been involved in numerous projects with universities [12,15]. As was shown through their involvement with this

study, results from the various research methods were used in a number of different scenarios. The outcomes of the creative workshop were used to empower other women who come to the drop-in centre to make reports, quotes from the survey were used in trainings provided by NUM, statistics are being used in grant applications, and the findings overall are being used to continue to develop and improve services. As such, NUM involvement in research helps further their social and criminal justice outcomes by disseminating results through a number of channels.

IMPLICATIONS FOR DESIGN

Taking the lead from Dombrowski et al.'s [21] definition of social justice as a *"constantly evolving mechanism for thinking through power, privilege, and access"* and how these affect social structures, our paper is an attempt to portray such a process. We have provided an example of a study where both the researcher's and partner organisation's intentions as well as the underlying premise of the methodology employed within the study are based in ideas of social justice. On the one hand, we demonstrate the nuance of how social justice outcomes can be orchestrated and designed in digitally mediated interactions. On the other hand, however, the study has pragmatic and direct links to improving existing practice and services within the partner organisation, ensuring not only a theoretical (or methodological) dedication to social justice, but also a tangible, generative [7] one.

A Note on Ethical Considerations

Throughout the paper we have provided findings from surveys, interviews and creative workshops. We now discuss these in more detail, focusing on (1) technologies for harm reduction, (2) the value of mundane technologies, and (3) technologies to fight the stigma attached to sex work. Despite providing implications for future work in technology development and methodology for HCI, we believe that as researchers working in this space we have a requirement that, particularly when engaging in feminist or social justice-oriented research, we must dedicate our research to be political and (in one way or another) further social justice outcomes for our participants and research partners. Particularly when working with sex workers and their mechanisms for furthering social and criminal justice outcomes, we need to keep this inherent need in mind. We question whether it is necessary for academia to fully understand practices of sex workers and whether a technology developed by non-sex working researchers or designers, although potentially increasing reach and efficiency, would be an ethical contribution or only an interesting space of study based in technological solutionism and cultural appropriation. Below, we highlight implications for working and designing with and for sex workers, but ask of researchers to keep these ethical questions in mind when developing technologies in this space.

Generalizability and Impact

NUM is a unique charity that provides an 'ugly mugs' scheme on a national level, but across the world there are many different types of sex work support projects that provide this type of scheme on a local or regional level. As such, the findings presented in this paper are unique to NUM. The impact the work has had thus far (findings have been used in trainings for a British police force and a categorical change has been made to the alert titles which influences the way they are shared) is specific to NUM. Having said this, the strategies for technology development below can be used by similar sex work support projects that deliver similar services worldwide, for example through membership of the Global Network of Sex Work Projects (NSWP). Furthermore, they will be utilized in projects that are part of an interconnected web of collaborations with sex work support services at local, national, and international levels.

Technologies for Harm Reduction

When designing technologies for sex workers and sex worker support charities we need to ensure that they are designed in such a way that they give agency to sex workers and must ensure they are in accordance with evidence-based public health approaches [24]. Rekart [46], for example, argues that through this kind of approach risky environments, harm, diminished quality of life, and vulnerability are turned into supportive environments with reduced harm, to lead to improved life quality and subsequently empowerment for sex workers. In their model this leads to a space where sex workers are enabled and they argue sex workers are able to leave prostitution. 11 years later, and taking a sex positive feminist and social justice approach that incorporates ideals portrayed by the sex worker rights movement [13,38], we would argue that by developing technologies that enable the types of changes in harm reduction as outlined by Rekart would enable sex workers to continue doing the work they do in a safer and more supportive environment.

At the beginning of this paper we described what prostitution 2.0 [16] and 3.0 [44] (would) look like. While Peppet's description of prostitution 3.0 would allow for more security for both the sex worker and their client, it does little to promote independent working; in his fiction, there will always be a third party intermediary to scaffold the interaction, resulting in a loss of agency which can be seen as a form of increased harm; they must be trusted by both sides, and as such would provide reliable information. Taking into consideration Grenfell et al.'s [24] argument for the collaboration and combination of policy environment, community interventions and tailored individual responses, as well as the reputation and trust that NUM have developed, it is unclear who the third party intermediary would most likely be. Arguably, even without being at the technological or political level of prostitution 3.0, technology already plays the role of a third party: sex workers advertise online, and it is often the first point of

contact between sex worker and client. Those soliciting online generally engage in less risky behaviour [16]. As was shown in our paper sex workers share information about clients online either through peer-networks, online forums or more formally through NUM.

With the kind of work we described above it becomes less important to have an intermediary between sex worker and client, as independence and peer-sharing are encouraged. As such, the ideas of prostitution 3.0 are, at least in some ways, at odds with the work that is being carried out by NUM and other sex worker rights activists as a technological intermediary may create different forms of ‘harm’. Perhaps the most obvious form of harm may be associated with violence or health, but other forms of harm also need to be considered. For example, the significant challenge of the ‘German Whore Hunt 2.0’ resonates further with the issues of centralised and ‘trusted’ intermediaries. While HCI has begun to address pornography [50,53], they have not addressed it as a sex working issue. As HCI researchers, we should publically address the topics we are talking about head on through our methodologies and the dissemination of our work [1,18,54], but also as a strategy with which we design and develop technologies [7], leading towards social justice outcomes [21]. We continue the discussion on harm-reduction by exploring the types of technologies that could be useful for this development by looking back at the data we have provided and arguing for the power in the mundane, before tackling an issue that technologies associated with Rekart’s model of harm reduction would not necessarily address: stigma.

Mundane Technologies

Many sex workers use NUM services because they want to receive alerts via SMS, e-mail or from the website. They use the intelligence they receive from these sources to keep track of potentially life-saving information for future reference. In turn, this makes them feel safer by improving both their physical and emotional welfare; one respondent even went as far as saying that the e-mails help them remember not to be complacent and to take care of themselves. This personal and felt security and safety itself is a social justice outcome since it is part of how marginalisation (sex workers are stigmatised by society [38]) and oppression (sex workers have been systematically left out of LGBT rights history [13], as well as debates on the legality of their work [34], or even feminist debates on the ‘morality’ of the work they do [2]) impact “*experiences of and practices with technology*” [21]. In this case, sex workers are utilising these mundane technologies to reduce their marginalisation and oppression by working together with NUM to create spaces where they are ‘enabled’ [46] to do the work they do in a supportive, harm reduced, improved quality of life and empowered way. For many, the reporting/alerting process is the first time that sex workers who have been abused can say something about this abuse in an anonymous, respected and non-judgmental way.

At the same time the alerts are in themselves agents of social justice that empower sex workers to experience supportive environments and reduced harm [46]. For those who have experienced (violent) crimes committed against them, the filling out of the report form has been found to be “*cathartic*” and a way of addressing the issue for themselves. People who themselves have never had to use the report form however may also be empowered by its existence. The women in the drop-in centre in particular had very positive messages to share about the reporting process; they encouraged others to share their stories and several of them took the opportunity of decorating a puzzle piece to share this message. Coming back to our argument for designing technologies for harm reduction, simply the provision of the reporting and alerting process gives people a felt emotional security in knowing that there is a well-respected, wide-reaching charity that is on the side of sex workers. It is this respectability that is important, and perhaps it is a step towards prostitution 3.0 [44], without the more intrusive information sharing (such as the sharing of health records).

Although it may seem like something incredibly simple, making changes to the report form to make it shorter or more user friendly could have a huge effect on increasing reporting, as many do not finish the current form. As was shown above the reporting process in itself, as well as the alert created from the report are important elements of fighting for the rights of sex workers, of allowing sex workers to share their stories in a non-judgmental environment, and to be part of a larger movement. At the same time, it is also an incredibly personal act which could result in feelings of empowerment. In turn the combination of these personal (by reporting), community-wide (by sharing alerts) and national conversations (for example through sharing intelligence with police or data with the HASC [41]) would allow the conversation of violence committed against sex workers on a number of levels. As such, small changes to the materiality of mundane technologies (such as the alerts shared through e-mail, SMS or the website or the report form in itself) would be supported by recorded evidence and in some cases could lead not only to social justice, but also criminal justice (a perpetrator being tried for their crimes) and policy [26] outcomes. In instances such as these examples, it becomes the role of the HCI research to be a ‘critical friend’ in the process of the interpretation of the data, commenting on current technology use, and developing implications of both of these to further social and criminal justice goals of sex workers and NUM in an introspective and ethical manner. For instance, through the work undertaken in this project this has been tangibly manifested, for example in changes to the format of alert-titles that are sent out.

Fighting Stigma, Saving Lives

While mundane technologies and technologies for harm reduction have the potential to have direct social justice impacts, one area of sex working and service provision of

charities that have not yet been addressed is the topic of stigma. NUM's aim is to end violence against sex workers, and they argue they do this, at least in part, through the reduction of stigma. Looking more specifically at the ways in which they approach their activism, it becomes clear that they engage in both fragmented and centralised practices.

Stigma is a socially constructed phenomenon that cannot be attributed to individuals. Those who are affected by it, however, are part of a network of agents in the stigma-reduction process [25]. Heijnders and Van Der Meij [25] have conducted a literature review of stigma-reduction strategies in HIV/AIDS, mental illness, leprosy, TB and epilepsy, and have identified five levels at which interventions should take place: intrapersonal, interpersonal, organisational and institutional, community level, and governmental and structural. We utilise their findings as a framework for exploring the ways in which technologies could be utilised (and have been utilised by NUM) to reduce stigma attached to crimes committed against sex workers, but since interventions should cater to changes at a number of these levels, we choose to discuss and explore the means in which technologies are used to affect change [21] to stigma through political, socio-cultural and individual means.

On a political level NUM utilises mundane technologies to communicate with other organisations, police and policy makers to develop good practice guidance for service provision [24], and for effects in policy development (such as the HASC inquiry into prostitution [26,41,42]). NUM utilises mundane technologies such as social media to mobilise not only their members but also the wider community, as well as online articles written by the CEO (eg. [23]). Through the alerting process (either through fragmented online forums, partially centralised through charities who are members of NUM, or in a completely centralised process through NUM directly) and the reporting process (where the act of reporting, but also the possibility of creating a report in itself) NUM utilise mundane technologies to affect immediate change in individuals' perceptions.

Above, we have described the ways in which NUM utilise technologies, and we argue that these are a *just* sustainability, or a sustainable change to an ecosystem that improves the quality of life within it [21], that demands ways of "*accounting for difference and inequality*" at not only a societal [21] but also individual scale. Heijnders and Van Der Meij [25] make it explicitly clear that interventions must work across all of their five levels to be able to reduce stigma rather than working only on a societal scale as a cornerstone to sustainability [21]. As such any technologies we develop for harm reduction, or indeed any mundane technologies we improve, should be adaptable and effective in several of these levels; in the long run these technologies would hopefully work towards saving lives (as is shown in the number of potential violent crimes that have

been prevented through NUM service provision [40]). We imagine these technologies to be simple to use, single-purpose and highly adaptable applications of the existing processes, and encourage designers to develop technologies for mundane, unconventional and potentially deviant activities [51]. As such, the technologies should aim to fight stigma while also aiding the movement towards a more socially just world; creating a space designers should strive to innovate within.

CONCLUSIONS

While the alerting and reporting practices of ugly mug schemes can be (and to some degree are) facilitated through bottom-up approaches through forums, there is value in institutionalising these through trusted charities to address underlying social and criminal justice goals. Implying the fight for social and criminal justice requires more than simply alerting others as it requires the passing-on of information to police; we argue it also needs public education through activism, advocacy and training.

Every opportunity that is afforded by technology is a double-edged sword. We must engage in conversations and reflections surrounding the risks and affordances of technology development, and should result in designs that follow '*just* sustainabilities' [21] for wholesome improvements in the ecology that sex workers, sex work support charities, activists and researchers work within. In turn this leads us to problematise how we approach social justice as a representation of technologies, in technologies and through technologies, meaning that social justice is not an outcome of design in itself, but also that there isn't a single '*orientation*' of social justice that all design and research processes will adhere to. In a way, the issues of centralisation and fragmentation become an issue, or mechanism, to move towards (and ultimately reach) a space of social justice of a multi-dimensional nature, where multiple, contiguous accounts and stakeholders are contextualised in aspects of justice [21]. This means that when various stakeholders work together to make systematic changes the outcomes can lead towards a more socially just environment.

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