

---

# Crime and/or Punishment: Joining the Dots between Crime, Legality and HCI.

**Rosanna Bellini**

Open Lab  
Newcastle University  
Newcastle upon Tyne, UK  
[r.f.bellini@newcastle.ac.uk](mailto:r.f.bellini@newcastle.ac.uk)

**Nicola Dell**

Jacobs Institute  
Cornell Tech  
New York, NY  
[nixdell@cornell.edu](mailto:nixdell@cornell.edu)

**Monica Whitty**

Human Factors in Cyber  
Security  
Melbourne University  
Melbourne, Australia  
[monica.whitty@unimelb.edu.au](mailto:monica.whitty@unimelb.edu.au)

**Debasis Bhattacharya**

CCER  
University of Hawai'i Maui College  
Hawaii, HI  
[debasisb@hawaii.edu](mailto:debasisb@hawaii.edu)

**David Wall**

Centre for Criminal Justice Studies  
University of Leeds  
Leeds, UK  
[d.s.wall@leeds.ac.uk](mailto:d.s.wall@leeds.ac.uk)

**Pamela Briggs**

PaCT Lab  
Northumbria University  
Newcastle upon Tyne, UK  
[p.briggs@northumbria.ac.uk](mailto:p.briggs@northumbria.ac.uk)

**Abstract**

We aim to bring together a number of designers, researchers, and practitioners to share their experience of the influence of crime and legality on their work. Through these discussions, we aspire to highlight the existing knowledge base for discussions of crime within HCI, provide a space for sharing researcher's personal experiences in their work with and against crime, and highlight best practice going forward. We will do this by using three considerations to inform our critical focus on crime: (1) mapping out the existing ways that HCI has addressed crime; (2) considering what part crime plays in approaches to social justice; (3) questioning who is thus morally responsible for the criminal activity of others, and what does this entail for ensuring fair approaches within technical design.

**Author Keywords**

Social Justice; Theories of Justice; Criminal Justice System; Law Enforcement; Legality;

**CSS Concepts**

Human-centred computing: human computer interaction (HCI); Applied computing: Law, social and behavioural sciences; Security and privacy: human and Societal aspects of security and privacy

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the Owner/Author.

*CHI'20 Extended Abstracts*, April 25–30, 2020, Honolulu, HI, USA

© 2020 Copyright is held by the owner/author(s).

ACM ISBN 978-1-4503-6819-3/20/04.

<https://doi.org/10.1145/3334480.3375176>

## Introduction

Crime is rarely cited as an explicit focus for research in CHI papers, although it is often discussed implicitly. A search of the entire CHI conference series using the search term ‘crime’ produced 83 results, with only 47 full archival papers, and of these, only nine dealt with crime outside of cybersecurity and privacy protection. This is surprising, as recent years have seen a rise in the number of papers addressing issues of domestic violence, sex work, incarceration, hate crimes and so on. Yet such papers rarely frame the work explicitly in criminological theory and this omission is, in itself, interesting. In this workshop, we seek to make the topic of crime more visible and to attract a disciplinary diverse set of participants to understand how an HCI community can improve our understanding of crime but also to explore the grey areas of crime: considering the HCI position on the legality of action and the more contested areas of criminal justice.

### *Cyber Crime*

The presence of a privacy and security subcommittee at CHI is a signal that papers addressing individual and organizational security and those dealing with attacks upon individual privacy rights have a home in the CHI community. Rather surprisingly, though, the crime focus is often missing. The overwhelming majority of papers tend to address cybercrime protection (improved passwords, interventions to improve organizational cybersecurity, etc) and/or privacy protection (interventions to limit the unintended release of data, improvements to online consent). Some papers may use a victimology approach, profiling those who are particularly vulnerable, but few discuss perpetrators. In other words, we see little in terms of online or offline criminal communities nor is there much

discussion around the operation of a digital criminal marketplace.

### *Crime vs Justice*

While the concept of crime has been somewhat underplayed within the CHI community, social justice has been a strong focus for recent work (as a point of contrast, a search on ‘social justice’ within the CHI proceedings returned 5,417 results). Here we see a new recognition of the importance of Social Justice Orientated Design [7], where a key issue is the recognition of ‘unjustness’ in existing systems. Sometimes this work aligns with prevailing legal structures, as when Dombrowski and colleagues discuss the precarity of low wage workers and their experience of wage theft [6]. At other times, ‘unjustness’ can relate to work that is undertaken outside of the law. Sex workers, for example, are often criminalized and therefore cannot resort to traditional routes for reporting violence and so must seek their means of support [10,11]. Activism in its various forms also relies upon digital innovation, including various means of ‘guerilla infrastructuring’ [19] typically using social networking applications that can’t always be policed [13].

How digital systems can be used for reparation or reconciliation are also interesting. As an example, HCI work can improve access to justice for those involved in legal disputes and wish to challenge the courts, through the introduction of online case resolution system [12]. HCI also speaks to the difficult issues associated with intimate partner abuse. Some of this work highlights the way that new technologies can exacerbate the abuse through digital forms of gaslighting, stalking and intimidation [10], whereas other work highlights digital

innovation in support of survivors of abuse [3]. Work in this space is very complex and the methodological problems encountered by researchers are also discussed within CHI [2].

Work has even stretched to explicitly acknowledging times where researchers must work with individuals that are outside of the protections of the law. These topics can range from research that examine: illegal job professions such as sex work [15], hobbies including shoplifting [8] or being undocumented in the country [11]. Indeed, many works ask that when working with such groups, what does it mean to 'do' justice when a country's legal frameworks may penalize or exclude such identities? How can researchers navigate within such spaces, particularly when the existence of these very contexts may be illegal – such as examining the presence of trading drugs on the darknet [5]?

#### *Policing and Enforcement*

Technology is described by many branches of law enforcement as the new frontier to both tackle and defend from criminal behaviour. This portfolio of tools has grown from geographic profiling where crime hotspots and buffer zones are identified and predicted [14], to the jigsaw-like creation of criminal profiles from collating social media posts and reports [4]. Technology, in many ways, is positioned as an unquestioning, obedient tool, used to both prevent the occurrence of future crimes, and for strengthening the existing legal frameworks in place. Certain challenges of adoption of such tools have also been explored, such as Verma and Dombrowski's study into how incorporating data-driven big data techniques into policing can generate novel problems for both state and citizen [17]. Indeed, the apparent space between the

reflexivity of the police officer in his moral questioning is a just response to a crime and a street-level algorithm for determining bail has been very carefully laid out as a problem that researchers must engage with through design [1]. This inexplicit focus on crime has not come without a cost, leaving marginalized groups both excluded from design and unfairly targeted by increasingly complex systems that impose law and order.

It appears that as a CHI community we are willing to categorise criminals and identify environments where crimes may be committed, but are more reluctant in critically examining how this knowledge is derived. When such spaces go unchallenged, this entails that the social control inherent within enforcing legality is hidden, potentially allowing unjust mechanisms to go unquestioned [18]. As such, it is critical that we examine and make explicit the impact of crime (and in doing so the politics of legality itself) to inform safer, intelligent and just digital and non-digital spaces for all.

#### **Links to Prior Workshops**

There have been some notable prior workshops to engage with specific aspects of the concept of crime, including Verbaan et al.'s designing for prisons and incarcerated individuals [16], and Fox et al.'s exploration into social justice and HCI [9]. As we have evidenced through our background literature section, these accompany the large collection of work that demonstrates an implicit acknowledgement of the legal frameworks in which they were conducted. However, this is the first workshop to be *explicit* in that engagement through attempting to identify broader conceptualizations of crime within the field. As this topic can vary greatly based on a country's geographic

location, language, socio-economic status and culture it is vital to critically examine how our current understandings are shaping the design of digital (and non-digital) tools, systems and processes.

### Workshop Themes

This workshop provides an opportunity for researchers and practitioners at the intersection of crime, morality, law, law enforcement and HCI to come together to share perspectives, theoretical framings, and insights to move the field forward. We provide a set of guiding considerations and questions for this community to consider in working with and against crime: (1) what approaches already exist; (2) conceptual considerations of crime and justice; and (3) our role as researchers and people:

**(1) Mapping the Territory.** We consider what work implicitly or explicitly addresses crime within and tangentially connected to the field of Human-Computer Interaction. Generating this knowledge base will permit us to get a better impression of the landscape of current understandings, and spaces where further research is needed. As such we ask: What theories of crime and deviance are most prominent within HCI? Are technical interventions for crime prevention focused more heavily on deterrence, punishment, rehabilitation or retribution? To what extent is a critical focus on gender, sex, ethnicity, and race present in HCI work addressing crime? How might we foster a more critical, productive dialogue with researchers across related disciplines?

**(2) The Role of Crime in Approaches to Social Justice.** Identifying unjust and criminal practices, as well as those most negatively impacted by such

phenomena, is a core staple of social justice approaches to design [7]. We are interested in how crime plays a role in shaping existing and future approaches to efforts to achieve more socially just practices within HCI. What we discover may, in turn, prompt a separate interesting consideration as to where it might be or might not be appropriate to perform HCI work with existing legal systems and processes. As such, this theme asks: What is the relationship between HCI, justice, and crime? What approaches best span the gulf between legal frameworks and just design in technology? What challenges might surface in attempting to consolidate these two? To what extent might we wish to be paternal or encroach on privacy in order to prevent crime?

**(3) Answering for Crime.** There is an emerging critical conscious surrounding the role and place for criminally irresponsible behaviour within technical use, development and design [10]. We are interested in exploring what we, as scholars, designers and practitioners, should have to answer for and to whom within criminal and moral frameworks. These considerations will also inform how we position those who have committed illegal acts to what extent we might design for restorative and responsible practices within our work. As such, we ask: How do we ensure that we do not prioritise unjust, legal practices over just, yet potentially illegal practices? What are the current barriers between HCI work and the law, and how might we overcome them? How can we, as a community take collective responsibility for wicked problems that generate crimes?

**Figure. 1: Schedule**

**09:00** Welcome, organizer introductions and overview.  
**09:15** Participant introductions (round-table) using position paper as ice breaker  
**09:45** Group discussions on sim/dif across works to create conceptual maps of work  
**10:15** Presentation of conceptual maps to the group  
**10:30** *Coffee Break*  
**10:50** Workshop organizer presentation. Question and answers session  
**11:30** Exploration of relationship between crime and social justice through how HCI addresses key 'unjust' problems e.g. algorithmic discrimination, wage theft  
**12:30** Lunch Break  
**14:00** Activity on drawing a road map of crime in HCI including considering the role of institutions of criminal justice and enforcement  
**15:30** *Coffee Break*  
**15:45** Navigating our maps through good practice guidance and peer-support/knowledge exchange networks  
**16:45** Discussion of future work and wrap up  
**17:00** Organised dinner

We believe these considerations should result in providing a comprehensive overview of the former, current and future directions for crime and HCI.

**Workshop Goals**

This workshop will offer a space for attendees to:

- Share their disciplinary perspectives of crime. In this regard we would encourage attendance from those underrepresented in the CHI community, such as criminologists, lawyers, and philosophers.
- Present their research experience to peers and engage in discussion of their work, contributing to both methodological and practical debates with others.
- Contribute towards a critical framework for explicitly examining what impact criminal and legal frameworks have on their work within HCI.
- To build and develop an interested community of researchers and practitioners that engages with criminality to support/strengthen existing efforts in better understanding and designing for this space.

**Organisers**

**Rosanna Bellini** is a PhD candidate for Digital Civics at Newcastle University, UK. Her research focuses on designing systems that encourage perspective-taking, empathy building and reflection for perpetrators of domestic violence to choose futures without violence. She is a steering group member of the Centre for Research into Violence and Abuse (CRiVA), Durham University, UK.

**Nicola Dell** is an Assistant Professor at Cornell University based at Cornell Tech in New York City. Her work focuses on designing, building, and evaluating

novel computing systems that positively impact underserved communities in the US and around the world. At Cornell, Nicki is part of the Center for Health Equity, the Digital Life Initiative, the Atkinson Center for a Sustainable Future, and she co-leads a team studying computer security and privacy issues in the context of intimate partner violence.

**Monica Whitty** holds a Chair in Human Factors in Cyber Security at the University of Melbourne and is a member of the Global Futures Committee for Cyber Security for the World Economic Forum. She conducts research on digital identity, deception, cyberstalking, and inside and external threats

**Debasis Bhattacharya** is a faculty member at the University of Hawai'i Maui College. A resident of Hawaii since 2002, he has been actively researching the information security needs of small businesses since 2008. Dr. Bhattacharya holds degrees from MIT, Columbia University, University of Phoenix and NW California University School of Law. His research interests include computer science education, cybersecurity, cryptocurrencies, blockchains and machine learning.

**David Wall** holds a Chair in Criminology at the Centre for Criminal Justice Studies in the School of Law, Leeds University. He conducts research in cybercrime, identity crime, organised crime, policing and intellectual property crime and a member of Governmental working groups including the UK Home Office Cybercrime and the HMIC Digital Crime and Policing groups.

**Pam Briggs** is a member of both the Research Institute in the Science of Cybersecurity and the

## Figure 2: Key Dates

**16 Feb** Submission of Position Papers Deadline

**1 Mar** Acceptance Notification and Request to Upload Position Papers to <https://crimehci.wordpress.com/> from Workshop Organisers

**15 Mar** Presentation of Position Papers to Attendees

**18 Mar** Request for Attendees to select a paper addressing crime and consideration of perpetrating or being victimized by a crime

**27 Mar** Requesting dietary requirements for post-dinner meal and ensuring accessibility needs are met for the workshop

**25–26 Apr** Workshop at CHI2020

**4 May** Distribution of workshop findings to attendees and invitation to participate in 'next steps' for building a community around crime and HCI.

*Northern Cloud Crime Centre, UK. She recently led (as interim PI) the UK Network+ on Social Justice in the Digital Economy. She holds a chair in Applied Psychology and conducts research on digital identity, trust privacy and cybersecurity. She is particularly interested in the challenges faced by marginalized citizens.*

### Pre-Workshop Plans and Website

Workshop details will be hosted and advertised at: <https://crimehci.wordpress.com/>. The website will include detailed information on the workshop; proposed activities (*Figure 1*); the workshop proposal; as well as lists of attendants and their contributions to the workshop after a selection process has been performed. We intend for this website to document the days' activities and disseminate discoveries from attendees' discussions. In doing so, we aspire that the website acts as a focused hub for peer-support, knowledge exchange, arranging post-workshop activities such as mailing lists, as well as further planning and facilitating workshop collaborations.

The workshop call will be sent out to interdisciplinary mailing lists to ensure the reach of a wider audience than that of HCI-focused mailing lists alone. This will include reaching non-academic spaces including blogs, social media and in-person invitations through other research engagements by the organisers.

### Workshop Structure

Before the workshop, alongside writing a position paper, we will ask participants to do two things: (1) to nominate a paper that captures their own interest in crime as prior reading and (2) to consider their own experiences of EITHER perpetrating low-level crime OR

being affected by a crime; personally or by association (*Figure 3*). As an ice-breaker, we will invite participants to plan the perfect crime for the digital world. We will use participants' nominated papers to divide the room into table discussions aligned to the workshops' three themes. This is built on through a debate that explores how these maps relate to or contradict approaches to matters of social justice (eg. identifying crime hot spots [14], working with marginalised communities [11]). In the afternoon, we will develop a roadmap for crime within HCI, where we recognize the different lenses on crime provided by the community and assess how this roadmap can be used to promote useful future work. This will contribute towards a framework for future interdisciplinary researchers through the crafting of good practice guidance through structured critique and debate. We will also discuss ways to sustain this new community beyond the time frame of this workshop.

### Post-Workshop Plans

We plan to take the ideas generated from this workshop and invite attendees to collaborate with us in writing a public-facing blog post (e.g. a Medium article) on our findings. We will also take any insights contributed within this session from the concluding activities to determine what could benefit attendees further in their line of work. This might include further non-academic workshops, a directory for sharing exemplary work or a mailing list for keeping the community of researchers engaged.

### Call for Participation

This one-day workshop invites inter-/cross- disciplinary perspectives and contributions to working with and against crime on non-/digital projects. We seek position

papers from design practitioners, criminologists, researchers, educators, artists, activists and persons interested in critiquing technologies that are shaped by the influence of crime and morality. This is the first workshop that explicitly focuses on the concept of crime and will develop a roadmap of existing interactions between crime and HCI to inform future work. We welcome applicants to submit in both creative formats and short 2-4 pages (excluding references) position papers written in the SIGSCHI Extended Abstract on either: a) the findings of their own academic work or b) individual anecdotes of an experience relevant to crime and HCI. Submissions should address one or more of the workshop themes and should be sent to [r.f.bellini@newcastle.ac.uk](mailto:r.f.bellini@newcastle.ac.uk) no later than by 16<sup>th</sup> February. Acceptance will be on the basis of workshop relevance, and the potential of contributing to discussions, as reviewed by workshop organisers. While applicants can be part of a group of authors submitting, we do require at least one author of the position paper to attend the workshop and be registered for at least one day of the conference. For more information on the workshop, please visit: <https://crimehci.wordpress.com/>

### References

- [1] Ali Alkhatib and Michael Bernstein. 2019. Street-Level Algorithms: A Theory at the Gaps Between Policy and Decisions. *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems - CHI '19*, ACM Press, 1–13.
- [2] Rosanna Bellini, Angelika Strohmayer, Patrick Olivier, and Clara Crivellaro. 2019. Mapping the Margins: Navigating the Ecologies of Domestic Violence Service Provision. *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, ACM, 122:1–122:13.
- [3] Rachel Clarke, Peter Wright, Madeline Balaam, and John McCarthy. 2013. Digital Portraits: Photo-sharing After Domestic Violence. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, ACM, 2517–2526.
- [4] Tirthankar Dasgupta, Abir Naskar, Rupsa Saha, and Lipika Dey. 2017. CrimeProfiler: Crime Information Extraction and Visualization from News Media. *Proceedings of the International Conference on Web Intelligence*, ACM, 541–549.
- [5] Martin Dittus, Joss Wright, and Mark Graham. 2018. Platform Criminalism: The “Last-Mile” Geography of the Darknet Market Supply Chain. *Proceedings of the 2018 World Wide Web Conference*, International World Wide Web Conferences Steering Committee, 277–286.
- [6] Lynn Dombrowski, Adriana Alvarado Garcia, and Jessica Despard. 2017. Low-Wage Precarious Workers’ Sociotechnical Practices Working Towards Addressing Wage Theft. *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*, ACM, 4585–4598.
- [7] Lynn Dombrowski, Ellie Harmon, and Sarah Fox. 2016. Social Justice-Oriented Interaction Design: Outlining Key Design Strategies and Commitments. *Proceedings of the 2016 ACM Conference on Designing Interactive Systems*, ACM, 656–671.
- [8] Enrique Encinas, Mark Blythe, Shaun Lawson, John Vines, Jayne Wallace, and Pam Briggs. 2018. Making Problems in Design Research: The Case of Teen Shoplifters on Tumblr. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, ACM, 72:1–72:12.

- [9] Sarah Fox, Mariam Asad, Katherine Lo, Jill P. Dimond, Lynn S. Dombrowski, and Shaowen Bardzell. 2016. Exploring Social Justice, Design, and HCI. *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems*, ACM, 3293–3300.
- [10] Diana Freed, Jackeline Palmer, Diana Minchala, Karen Levy, Thomas Ristenpart, and Nicola Dell. 2018. "A Stalker's Paradise": How Intimate Partner Abusers Exploit Technology. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, ACM, 667:1–667:13.
- [11] Tamy Guberek, Allison McDonald, Sylvia Simioni, Abraham H. Mhaidli, Kentaro Toyama, and Florian Schaub. 2018. Keeping a Low Profile?: Technology, Risk and Privacy Among Undocumented Immigrants. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, ACM, 114:1–114:15.
- [12] Youyang Hou, Cliff Lampe, Maximilian Bulinski, and J.J. Prescott. 2017. Factors in Fairness and Emotion in Online Case Resolution Systems. *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*, ACM, 2511–2522.
- [13] Farnaz Irannejad Bisafar, Lina Itzel Martinez, and Andrea G. Parker. 2018. Social Computing-Driven Activism in Youth Empowerment Organizations: Challenges and Opportunities. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, ACM, 183:1–183:13.
- [14] Ahsan Morshed, Abdur Rahim Mohammad Forkan, Pei-Wei Tsai, et al. 2019. VisCrimePredict: A System for Crime Trajectory Prediction and Visualisation from Heterogeneous Data Sources. *Proceedings of the 34th ACM/SIGAPP Symposium on Applied Computing*, ACM, 1099–1106.
- [15] Angelika Strohmayer, Jenn Clamen, and Mary Laing. 2019. Technologies for Social Justice: Lessons from Sex Workers on the Front Lines. *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, ACM, 652:1–652:14.
- [16] Sanne Verbaan, Clair Aldington, Roisin McNaney, and Jayne Wallace. 2018. Potentials of HCI for Prisons and Incarcerated Individuals. *Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems*, ACM, SIG17:1–SIG17:4.
- [17] Nitya Verma and Lynn Dombrowski. 2018. Confronting Social Criticisms: Challenges when Adopting Data-Driven Policing Strategies. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, ACM, 469:1–469:13.
- [18] Alex Vitale. 2017. *The End of Policing*. Verso, London ; New York.
- [19] Vasillis Vlachokyriakos, Clara Crivellaro, Pete Wright, and Patrick Olivier. 2018. Infrastructuring the Solidarity Economy: Unpacking Strategies and Tactics in Designing Social Innovation. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, ACM, 481:1–481:12.