

2

AT THE CROSSROAD

Cyber, Critical and Cultural Criminologies

Introduction

Criminology has a long tradition of examining both the socio-structural and socio-cultural bases of crime and justice. Emerging in the late 1960s, critical criminologies have sought to illuminate the various ways in which crime, and the institutions of crime control, 'reflect and reproduce patterns of power, inequality, exploitation and exclusion' (Yar, 2012c, p. 52). Cultural criminologies, meanwhile, have grown in breadth and popularity since the mid-1990s, focusing on the intersections of culture and crime: 'to account for the culture and subcultures of crime, the criminalization of cultural and subcultural activities, and the politics of these processes' (Ferrell & Sanders, 1995, pp. 3–4). Throughout this book, we advocate a reinvestigation of criminological research that extends beyond conventional 'cybercrime'. Indeed, as Danish criminologist Katja Franko Aas (2016) observes, 'Criminologists have been, with some exceptions, relatively slow to take on board, or at least to systematically theorize, the technologically-mediated nature of our sociality.' To do so, we suggest, requires inspiration from interdisciplinary theories, concepts and approaches. As such, we position digital criminology not as a new sub-discipline, but as a critical and cultural criminological orientation to crime and justice in a digital society.

Digital criminology represents the intersection of critical, cultural and socio-technical theory and research. The purpose of this chapter, then, is first to provide a brief history of cybercriminologies, and then to summarise the key features of digital society, before moving on to discuss critical and cultural criminologies as they relate to crime and justice in digital society. In doing so, we consider how these conceptual frameworks might be further developed by the addition of socio-technical concepts, before moving on to elaborate some fruitful avenues for digital criminological theory and research in subsequent chapters.

A Brief History of Cybercriminologies

The internet has long-reaching origins: from advances in computing in the 1950s; to the earliest electronic mail (and spam) in the 1970s; to the first messages sent via the US-military-funded

ARPANET in 1969; to online communications within private, closed networks in the 1980s; to the global web in the 1990s (Leiner et al., 2009). Indeed, technological developments and their associated implications for crime and criminology can be charted across three broad periods: the 'pre-web' era of the 1980s to early 1990s, the 'global web' era of the 1990s to early 2000s and the 'social web' era from the mid-2000s to the present day. We do not intend to suggest that the challenges and opportunities for crime and criminological scholarship presented by each era are replaced or discontinued with the next, but that each period brings with it unique advances in technology that have particular impacts for crime and that can be broadly linked with associated shifts in criminological thinking and research.

Pre-web Era: 1980s to 1991

It was not until the 1980s that personal computers¹ were widely adopted in workplaces and public institutions in the developed West (Ceruzzi, 2003). From the 1980s onwards, however, the information and activities of governments, education institutions and corporations were rapidly computerised and associated with greater electronic data storage, as well as increased connectivity within closed internal and private networks (Ceruzzi, 2003; Williams, 1997). Criminology in this pre-web era (1980s to 1991) recognised that such widespread computer availability and electronic data storage, combined with internally networked workstations and dial-in connections, had opened up governments, corporations and educational institutions to new forms of crime through technology misuse. Computer-related economic crimes (including financial data theft and identity fraud), 'eavesdropping' and the interception of confidential communications, and the security and privacy of confidential information systems, as well as software piracy via illegal disk-based copies, were among the predominant concerns of the time (Clough & Mungo, 1992; Sieber, 1986). As computer technology was predominantly adopted in public and corporate organisations, these emerging harms were largely associated with white collar crime (Croall, 1992; Kling, 1980; Montgomery, 1986).

The pre-web period also marked the first legislative steps to address computer-enabled crime. For example, one of the earliest laws that defined computer crime was passed in Florida in the United States in 1978 in response to the fraudulent printing of winning tickets at a dog racing track using a computer (Hollinger & Lanza-Kaduce, 1988). This law was notable because it defined all unauthorised access to a computer as an offence, regardless of whether or not there was malicious intent (Casey, 2011, p. 35). By 1983, another 20 states had introduced computer crime legislation. The US federal *Computer Fraud and Abuse Act* of 1984 criminalised various forms of unauthorised computer access of information. Information relating to defence or foreign relations matters was regarded as a felony offence, whereas intrusions designed to access or alter all other non-classified forms of information were regarded as misdemeanors (Griffith, 1990, p. 460). Similar computer crime laws were subsequently introduced elsewhere. In Australia, for instance, a 1989 amendment to the *Crimes Act* outlined three categories of computer 'hacking' crimes: mere access, without seeking out or altering specific information; access without initial intent but opportunistically seeking or altering information; and access with intent to seek or alter specific information. In England, meanwhile, it was 1990 before the first criminal statute to tackle the misuse of computers was passed (Wasik, 1991). Consistent with many legislative frameworks, the very act of using a computer to breach a network or database was highlighted as an offence, regardless of specific intent (Greenleaf, 1990, p. 21). A tension running throughout the debates that led to these initial legal reforms was the question of whether the act of

computer misuse or unauthorised access itself should be specifically criminalised, in addition to the equivalent terrestrial or analogue crimes that may result.

Global Web Era: 1990s to 2000s

The modern World Wide Web went live to a global public on 6 August 1991 (Leiner et al., 2009). While understanding and legislating computer crime typified criminological research of the 1980s and early 1990s, the 'global web' era (1990s to 2000s) brought an associated shift towards internet and cybercrime research. The increased accessibility of online information sharing and communications that the global web brought for everyday users was widely recognised as creating new and massively expanded opportunities for crime as 'the perpetrators who attacked machines through machines . . . started attacking *real humans* through the machines' (Jaishankar, 2011, p. 26, emphasis added). Thus, while financial fraud, data theft, information privacy and identity crime remained (and remain) persistent themes in criminological research, the attention of cybercrime scholars broadened to include interpersonal harms such as online child sexual exploitation and child pornography (Armagh, 2001; Esposito, 1998; Mitchell et al., 2010), both of which had become the focus of much public and policy concern.

The scope and focus of cybercrime scholarship in the global web era is well captured by David Wall's (2001) original and highly influential typology, which comprises four categories of cybercrime:

- (1) *cybertrespass*, incorporating unauthorised access to a computer system, network or data source, such as through on-site system hacking, online attacks and/or malicious software (malware);
- (2) *cyberdeception and cybertheft*, including financial and data thefts, intellectual property thefts and electronic piracy. Such crimes may be facilitated through fraudulent scams, identity fraud and malware;
- (3) *cyberporn and cyberobscenity*, referring to the online trading of sexually expressive material and including sexually deviant and fetish subcultures, sex work, sex trafficking, sex tourism and child sexual grooming and exploitation material; and
- (4) *cyberviolence*, referring to the various ways that individuals can cause interpersonal harms to others. Such harms include cyberstalking, cyberbullying, cyberharassment and communications that support prospective acts of violence or terror, such as threats of personal violence, bomb talk or circulating instructions for making explosives and other weaponry (Wall, 2001).

These categories can be understood according to a common categorisation in cybercrime research: the first category represents computer-focused acts (i.e. directed at the machine), while the latter three are more readily described as computer-assisted acts (Jewkes & Yar, 2010; Smith et al., 2004). Wall's early work (2001) identified that the internet had influenced crime across these categories in at least three broad ways. First, by providing a platform for communications that may enable and sustain existing harmful and criminal activities, such as drug trafficking, hate speech, stalking and sharing information on how to offend. Second, through enabling participation in a transnational environment that provides new opportunities and expanded reach for criminal activities which would be subject to existing law in sovereign states. Third, the distancing of time and space creates potentially new, unbounded, contestable and private harms, such as the misappropriation of imagery and intellectual property. In particular, he suggested that the shrinking role of the state and the relative ungovernability of cyberspace (discussed further in Chapter 3) present particular challenges both for policing 'virtual communities'

and for the discipline of criminology more broadly (Wall, 1997). Wall argued that, while the new cyberspace offered enormous democratising potential, 'there are also many opportunities for new types of offending' and that the internet posed a 'considerable threat to traditional forms of governance and . . . to traditional understandings of order' (Wall, 1997, p. 208).

Despite this broad potential focus for criminology, in practice much cybercriminology has focused on financial crimes, identity fraud and threats to market and state security: the first three aspects of Wall's (2001) typology. Interpersonal violence has received much less attention by comparison. While there are a plethora of studies on cyberbullying, these are focused almost exclusively on minors (aged 17 years or under) and young adults (up to 24 years), and they are undertaken more often in the contexts of psychology, social work and education than criminology itself. Similarly, the many studies on cyberstalking originate largely from within psychological frameworks. In both instances, these fields of research have come to dominate work on cyberviolence to the relative neglect of a broader range of interpersonal violences and their intersections with digital technologies, including: intimate partner violence, sexual violence, racially and/or sexuality based harassment and/or hate crime, as well as more traditional criminological concerns, such as male-to-male violence.

In addition to restricted *topics* of analysis, much criminological research has focused on cybercrimes, cybercriminality and cyber law enforcement with very few studies seeking to apply or adapt criminological *theory* to such research (see Holt & Bossler, 2014, 2015 for a discussion of these limitations). The works that have undertaken such conceptual development have drawn predominantly on a handful of 'rational choice', deviant lifestyle and subcultural theories of crime (for reviews see Diamond & Bachman, 2015; Holt & Bossler, 2014). In particular, Lawrence Cohen and Marcus Felson's 1979 Routine Activity Theory (RAT) features so often in cybercrime theorising that it might be described as the prevailing orthodoxy in such research (Holt & Bossler, 2008; Hutchings & Hayes, 2008; Pyrooz et al., 2015; Reyns et al., 2011; van Wilmsen, 2011; Yar, 2005). For example, as criminologist Peter Grabosky (2001) explains:

[o]ne of the basic tenets of criminology holds that crime can be explained by three factors: motivation, opportunity, and the absence of a capable guardian . . . derived initially to explain conventional "street" crime, it is equally applicable to crime in cyberspace (p. 248).

While not all criminologists agree on the applicability of the theory to cybercrime (Jaishankar, 2008; Yar, 2005), its dominance is arguably highly influential in framing the focus of much research with regards to identifying the motivations of individual cyber offenders, 'target hardening' and identifying 'risky' online victim behaviours, as well as the challenges of law enforcement (as a form of guardianship), a trend which has continued in computer and cybercriminologies. Indeed, in a recent review of the current state of cybercrime scholarship, Thomas Holt and Adam Bossler (2014, p. 21), describe how the preceding 20 years of criminological research have predominantly focused on the study of the 'impact of technology on the practices of *offenders*, factors affecting the *risk of victimization*, and the applicability of *traditional theories* of crime to *virtual offences*' (emphasis added).

Social Web Era: 2000s to present

With the millennium came Web 2.0 and the 'social web' (2000s to present) as online communications became increasingly collaborative, with expanded capacity for user-generated content development

and sharing, as well as online social networking. Between 2002 and 2010, there was an explosion of social networks and image-sharing platforms, including Friendster, MySpace, Facebook, YouTube, Twitter, Tumblr and Instagram. Research into cyberbullying, cyberstalking and online harassment rapidly expanded over this period as the relative ease, anonymity and reach of online communications was associated with continuing concerns regarding invasive and threatening communications (Pittaro, 2007; Reyns et al., 2011; Spitzberg & Hoobler, 2002), particularly in relation to vulnerable groups such as children and young adults.

As the social web expanded, so too did the ‘deep web’ and ‘dark web’; a shorthand for content on the internet that is not indexed by standard search engines (and is thus not searchable) and/or that is protected by layers of encryption and other security mechanisms (Bergman, 2001). While not *all* content on the dark web is necessarily, or by definition, illicit, the concealment of such underground networks provides the ideal environment for activities such as: illicit content, including child exploitation material; criminal organising, such as by terrorist or organised crime networks; and black markets, trading in items such as malware and illicit drugs (Martin, 2014; Sugiyura, 2018; Yip et al., 2013). A growing focus of cybercrime research has thus been to identify and understand the nature and patterns of such online criminal social networks (Brewer, 2017; Décary-Héту & Dupont, 2012; Holt, 2013; Westlake & Bouchard, 2016).

A further feature of the social web era is the increasingly mobile web, with smartphones and wearable technology becoming ever-more common — almost ubiquitous — and simultaneously collecting expansive ‘big data’ about our selves, our identities and our everyday lives. Criminological research has also sought to engage with these increasingly automated, algorithmic and computational capacities as they relate to crime data analytics, law enforcement and justice system practices (Berk, 2008; Birks et al., 2012; Brantingham, 2011). Though there is, as yet, a comparative dearth of criminological research that has begun to empirically and critically explore the range of challenges and opportunities presented by ‘big data’ analytics. Most recently, Janet Chan and Lyria Bennett Moses (2016, p. 25) note the relatively small engagement from criminologists with big data research, which tends to lie in two main areas: social media data analysis and the uptake of computer modelling/ algorithms as a predictive tool in police and criminal justice decision making. They suggest that criminologists, and social scientists more broadly, must increasingly collaborate with technical experts to further progress this field.

Breaking Through the Binaries of Online/Offline and Real/Virtual

As the preceding discussion shows, we believe that there are notable gaps in the current field of cybercrime research (Aas, 2007a,b; Hayward, 2012; Holt & Bossler, 2014). Despite more than ten years since the rise of the social web, criminological scholarship remains focused on computing and internet technologies as either themselves the *targets* of crime or as mere *tools* in the commission of otherwise familiar and recognisable crimes. The topics and foci of much of the cybercrime research are likewise limited in scope. An overview of both seminal and contemporary works — books, edited collections and journal special issues — over the past 20 years yields recurring topics including: hacking, data theft, online fraud and scams, digital piracy, child exploitation materials (‘pornography’²), online sex work, cyberbullying, cyberstalking, cyberterrorism and online extremism; as well as challenges for cyber legislation and law enforcement (Grabosky & Smith, 1998; Holt, 2011; Jaishankar, 2011; Wall, 2007). There are also cybercrime works on topics including information privacy and data surveillance

(Thomas & Loader, 2000; Yar, 2013), though these are fewer. Little cybercrime scholarship engages with persistent social inequalities, or the digital divide, as it relates to crime (Halford & Savage, 2010); therefore, few studies explore the unequal nature, impacts and responses towards cybercrimes and other digital harms with respect to gender, gender-identity, race and/or sexuality (notable exceptions include Halder & Jaishankar, 2012; Powell & Henry, 2016; Mann et al., 2003; Sutton, 2002). Indeed, in their recent review of cybercrime scholarship, Holt and Bossler (2014) make no mention of technology-enabled and online violence against women (despite discussing studies on harassment, stalking and bullying, which they overtly associate with juvenile victims and offenders), nor internet hate such as racially motivated hate speech or harassment focused on sexuality and/or gender-identity. This does not indicate an oversight of their review but the dearth of cybercrime research that has engaged with violence against marginalised and/or minority communities.

There clearly remains an inherent dualism, in which cybercrimes continue to be framed as a mirror or the online double of their terrestrial counterparts, differing perhaps by medium and reach but not by nature: trespass becomes *cybertrespass*, theft becomes *cybertheft*, bullying becomes *cyberbullying*, terrorism becomes *cyberterrorism*. But the foregrounding of the cyber, itself a direct reference to internet and 'virtual' technologies, obscures the diverse and embedded nature of digital data and communications in contemporary societies (Aas, 2007b). Jaishankar (2007, p. 2), for instance, describes the field of cybercriminology itself as studies of 'cyber crime, cyber criminal behaviour, cyber victims, cyber laws and cyber investigations', as if these categories were all readily or neatly distinguishable from a 'non-cyber' equivalent.

Yet, in a groundbreaking article featured in *Theoretical Criminology*, Sheila Brown challenged such computer criminology and cybercriminology to look outside of its conventional disciplinary frameworks and look instead 'towards theories of the *technosocial*' (2006, p. 227 emphasis added). Analyses of cybercrime, she suggests, are caught up in false distinctions between 'virtual' and 'embodied' crime; seeking to develop and translate 'old' legal and theoretical frameworks to understand the 'new' crimes in cyberspace. Brown argues that, within criminology, 'nowhere is captured the vision of the crucial nature of the world as a human/technical hybrid ...' (Brown 2006, p. 227), in which all crime occurs in networks, which vary only in degrees of virtuality/embodiment. Drawing variously on social and technology theorists such as Bruno Latour (1993), Scott Lash (2002), Donna Haraway (1991) and Manuel Castells (1996, 2001), Brown posited a need for criminologists to understand crime and criminality at the increasingly blurred intersections of biology/technology, nature/society, object/agent and artificial/human. Computing and information theories, she argued, 'will increasingly infuse both domains of Law and Criminology' (Brown 2006, p. 236) as social theory is not in itself sufficient to analyse and understand crime in contemporary societies.

Key Features of Digital Society

In order to further conceptualise contemporary crime and justice, in this section we first consider some of the key features of digital society that come to bear on an emerging *digital criminological* scholarship. Then, we elaborate further on possible intersections with innovative and emerging research and theory within critical and cultural criminologies. Many researchers across politics (Papacharissi, 2010; Ruppert, Law, & Savage, 2013; Wilhelm, 2000), media and communications (Berry, 2012; Miller, 2011), as well as digital sociologies (Lupton, 2014; Marres, 2017), have sought to summarise the distinctive features of the digital age; and, naturally, our discussion in this chapter is not novel in

this respect. Yet, we do find it useful to weave together some of these disparate bodies of literature and concepts to engage the criminological imagination further. In doing so, we identify eight key themes of digital society that inspire reflections on crime and justice, each of which we now describe as a prelude to the discussion and analysis that follows throughout the book as a whole.

'Perpetual Contact', Convergence and Omnipresence

Among the key features of the digital age are the global networking and portability of internet-enabled devices, such that individuals are in 'perpetual contact' (Katz & Akhaus, 2002). Though the first smartphones, with programmable operating systems, internet access, emailing and web-browsing capabilities, were released in the mid-1990s, it was not until 2007, with the launch of the Apple iPhone, that smartphones began their rise as a dominant consumer communications device (Cecere, Corrocher, & Battaglia, 2015). Further integrated features such as wi-fi connectivity, Bluetooth, file storage, GPS, motion sensors, advanced operating systems capable of supporting a wide range of software applications, as well as increasingly powerful still and video cameras (including a secondary front-facing camera for video-calling and 'selfie' mode), have all contributed to the 'full convergence between computing and communications' (Cecere et al., 2015, p. 165). Changes in communications, sociality and behaviours associated with people having this advanced portable computer in their hand everywhere they go have not gone unnoticed by social and political scientists. From the ease of communicating via social media for everything from the banal to the personal and the political (Bonilla & Rosa, 2015; Goggin, 2014; Ibrahim, 2015), to promoting 'selfie' culture (Diefenbach & Christoforakos, 2017; Lim & Lim, 2016; Murray, 2015; Senft & Baym, 2015), to location tracking during disasters (Bruns & Burgess, 2013; Jasmontaite & Dimitrova, 2017), to tracking health and fitness (Goldstein, Thomas, Wing, & Bond, 2017; Kaiser, Harrington, & Turakhia, 2016; Kim et al., 2016), to concerns about the impacts on mental well-being and personal relationships (Bayer, Campbell, & Ling, 2016; Harwood, Dooley, Scott, & Joiner, 2014; Miller, 2012; Misra, Cheng, Genevie, & Yuan, 2016); many scholars have noted that the rapid and extensive uptake of smart-phones will be looked back on as one of the defining technological shifts of our time.

Among the implications of the software applications (apps) available on smartphones is the presence of social media as an integrated form of communication and consumption in everyday life. Distinctions between 'old' and 'new' media as sources of news and information are increasingly blurred. Where once the generation of news and other media content was top-down and hierarchical, with citizens' roles narrowly defined as passive consumers, the new media is typified by its horizontal and 'two-way' networks of interaction and user-content generation (Yar, 2012a; see also Miller, 2011). Journalism, cultural studies and politics scholars alike have discussed, at length, the contradictory implications of such *media convergence* (Hay & Couldry, 2011; Jenkins, 2006). As media scholars Henry Jenkins and Mark Deuze (2008) explain:

shifts in the communication infrastructure bring about contradictory pulls and tugs within our culture. On the one hand, this 'democratization' of media use signals a broadening of opportunities for individuals and grassroots communities to tell stories and access stories others are telling, to present arguments and listen to arguments made elsewhere, to share information and learn more about the world from a multitude of other perspectives. On the other hand, the media companies seek to extend their reach by merging, co-opting, converging

and synergizing their brands and intellectual properties across all of these channels. In some ways, this has concentrated the power of traditional gatekeepers and agenda setters and in other ways, it has disintegrated their tight control over our culture (p. 6).

Of course, it is not only smartphones and social media that keep us 'constantly connected' (Harwood et al., 2014). Today, numerous devices, including 'wearables' (such as fitness trackers, smart watches and other smart jewellery), household goods (such as televisions, refrigerators and home management systems), as well as the more conventional portable computing devices (such as laptops and tablets), are all increasingly networked. Referred to broadly as the Internet of Things (IoTs), this omnipresent internet connectivity is further associated with data-sharing and data-gathering practices that mark an additional key feature of digital society.

Permanence, Digital Footprints and Dataveillance

A further implication of the IoTs and its associated data-sharing and data-gathering practices is an ever increasing 'digital footprint'. Many scholars have noted the prominence of the 'quantified self' formed as individuals engage with numerous apps, trackers and tools (Lupton, 2013; Swan, 2013). Clearly, this mounting social data can be 'collected, analysed and visualized' by social scientists (Housley et al., 2014) and thus presents research and methodological opportunities for digital sociology (Lupton, 2014) and, indeed, digital criminology (Smith, Bennett Moses, & Chan, 2017); however, it also presents very real challenges for privacy and human rights. Indeed, as noted by Gordon Fletcher, Marie Griffiths, and Maria Kutar (2011, p. 1): 'individuals passively volunteer personal information while government and commercial organisations aggressively amass these snippets into correlated data'. Not only do we as individuals contribute to our own potential surveillance in digital society, but increasingly, we engage in mutual surveillance of each other ('lateral surveillance', discussed further in Chapter 3). The 'human data trail now begins ... prior to conception and continues after death' (Fletcher et al., 2011, p. 1) as disparate threads of individuals' data are retained, stored and increasingly linked in ways that were not necessarily intended by the subjects of this extensive networked dataveillance (Degli Esposti, 2014; Van Dijck, 2014).

Yet, beyond concerns with privacy alone, scholars have also noted the negative social effects of this permanence in the 'big data' society. For instance, US scholars Jean-Francois Blanchette and Debra Johnson (2002) advocate for the 'social benefits of forgetfulness', noting that American society has been founded on a culture of 'forgive and forget' that enables people to make a fresh start and change the course of their lives. As they highlight:

In the paper-and-ink world, the sheer cumbersomeness of archiving and later finding information often promoted a form of institutional forgetfulness—a situation with parallels to human memory. The forgetfulness of the paper-and-ink world was implicit in the material being of institutions, the available storage space, the budget for cabinets, etc. Often the institution's memory/forgetfulness was not even recognized as a policy issue but dealt with as a matter of physical facilities. In many cases, as storage technologies have gained in practicality, ease of remote access, and lowered in price, the shift to an electronic medium changed the default position from one of forgetfulness to one of memory.

(Blanchette & Johnson, 2002, p. 34)

Continuing concerns over the permanence of social data and its impacts on individuals' human rights have promoted a global debate over whether people should have a 'right to be forgotten' in the digital age. In 2014, the Court of Justice of the European Union (EU) ruled that individuals do indeed have the right, under certain conditions, to request that search engines remove links to personal information about them. According to subsequent guidance released by the European Commission, 'this applies where the information is inaccurate, inadequate, irrelevant or excessive for the purposes of the data processing', furthermore that 'interference with a person's right to data protection could not be justified merely by the economic interest of the search engine' (European Commission, 2014, n.p.). Though such privacy and data protection rights are thus recognised in the EU, there is far from global agreement on the issue. In the United States in particular, debates regarding the European 'right to be forgotten' have noted the potential conflict with freedom of speech principles (Bennett, 2012; Gajda, 2017; Mantelero, 2013).

Echo Chambers, Filter Bubbles and 'Algorithmic Sociality'

Social commentators and scholars alike have identified the self-affirming nature of individuals' online engagement. For instance, US legal scholar Cass Sunstein (2004, 2009, 2017), has noted that one of the more striking features of digital society is the capacity for users to actively curate and 'filter' what they see. Such filtering he describes as a 'mixed blessing'; simultaneously allowing individuals to filter out 'noise' in an increasingly information-heavy digital life and restricting engagement with a diversity of topics and points of view. 'The implication,' Sunstein suggests, 'is that groups of people, especially if they are like-minded, will end up thinking the same thing they thought before—but in more extreme form, and sometimes in a much more extreme form' (Sunstein, 2004, p. 58). In this way, a 'filter bubble' may contribute to further polarising of public sentiment and political ideology, in ways that are not only damaging for democratic engagement but that amplify cultures of hate (discussed further in Chapter 6). Indeed, several studies have found evidence that individuals tend to actively choose and 'follow' news outlets that are aligned with their own political opinions (Garrett, 2009; Iyengar & Hahn, 2009; Munson & Resnick, 2010).

The role of digital technology in content curation and consumption in digital society is not simply a neutral tool in the hands of users. Rather, digital media and online platforms are explicitly 'designed to introduce bias' (Marres, 2017, pp. 103–104). Increasingly, search engines, online news media and social networks personalise content for their users through machine-learning models (Agichtein, Brill, & Dumais 2006; Chan & Bennett Moses, 2016; Das, Datar, Garg, & Rajaram, 2007; Hannak et al., 2013). This automation effectively creates 'filter bubbles' (Pariser, 2011) through which 'algorithms inadvertently amplify ideological segregation by automatically recommending content an individual is likely to agree with' (Flaxman, Goel, & Rao, 2016, p. 299). British sociologist Daniel Smith (2017) further provides an account of *algorithmic sociality*, noting the ways in which interactive processes of joint human–machine content curation are determining how we experience and enact social relations (see also Skeggs & Yuill, 2016). Meanwhile, in Australia, in an analysis of Facebook 'fight pages', criminologist Mark Wood (2016, 2017) refers to a social media 'technological unconscious'; noting that every time we click 'Like' we are simultaneously responding to and reinforcing a social algorithm that will determine not only which content we continue to be presented with but also the content presented to others

who are 'like us' (the 'like economy', Gerlitz & Helmond, 2013). Thus, echo chambers, filter bubbles and algorithmic sociality all reinforce and potentially amplify individuals' and communities' beliefs, attitudes, sentiment and practices; including potentially deviant and criminal subcultures (Smith et al., 2017).

Spatiality, Temporality and 'Virality'

It has frequently been observed that digital technologies have shifted our experience of time and space. A global network of digital communications has, according to some sociologists and technologists, facilitated a dispersal of social connections that are increasingly characterised by 'loose', 'weak' or 'liquid' social ties (Bauman, 2000; Kavanaugh, Reese, Carroll, & Rosson, 2005; Turkle, 2012). In short, the strength of our social ties can be seen as a combination of the amount of time, emotional intensity, intimacy and reciprocity involved (Granovetter, 1973). Strong ties thus involve greater intimacy, investment and mutuality, as well as frequent interactions across multiple settings and/or contexts; weak ties are characterised by sharing of resources or information rather than affective and mutual confidences (Wellman, 1992). Granovetter (1973) famously argued for the strength of weak ties. If individuals are only connected through strong ties in localised cliques, then their capacity for sharing information and driving innovation and coordinated action is limited (Granovetter, 1973).

The internet has a positive potential for increasing weak ties between individuals and communities across the globe, which might inspire information, innovation, coordination and overall *cohesiveness* in the social network (Kavanaugh, 2003). While such shifts in *spatiality* associated with online communications may have a positive impact on weak ties, other scholars have repeatedly noted the ways in which participation in distributed networks creates a new kind of sociality in which people live 'alone together' (Turtle, 2012). Dispersed spatial networks offer the capacity to develop and maintain strong distal ties, while one's immediate proximal ties may be weak. As some scholars have highlighted, rather than investing in and maintaining strong ties in networks physically close to us, technology enables us to invest more in relationships with individuals far away, perhaps people who we have never met face-to-face. This is not necessarily a negative shift — though many psychologists have warned that the growth of weak ties, *at the expense of* strong ones, may have negative effects on social cohesion (Baek, Bae, & Jang, 2013).

In addition to considerations of spatiality, a new *temporality* further characterises participation in digital society. As suggested by Anthropologists Yarimar Bonilla and Jonathan Rosa (2015) in discussing justice movements on social media:

E-mail, television, radio, and print have long managed to open up windows into the experience of social movements, but the dialogicality and temporality of Twitter create a unique feeling of direct participation. Twitter allows users who are territorially displaced to feel like they are united across both space and time (p. 7).

The sense of immediacy and extended reach of digital society has facilitated a further cultural trend in which content sharing can 'go viral': spreading rapidly through social networks as hundreds of thousands, even millions, of users replicate and distribute the original posts. The viral uptake of

some internet memes provides a vivid example. Memes, more broadly, have been explained by Richard Dawkins (1976) as:

... a unit of cultural transmission, or a unit of imitation ... Imitation, in the broad sense, is how memes can replicate. But just as not all genes that can replicate do so successfully, so some memes are more successful in the meme-pool than others (pp. 203–205).

Dawkins (1976) went on to describe how memes spread and are transmitted, ‘like a virus’, from person to person while constantly undergoing ‘natural selection’ and variation. This propagation of cultural memes — whether a scientific theory, a political idea, a tune, a fashion or a catchphrase — can thus be understood as a series of copies. Each is a variation, adaptation or copy of the last, as a collective whole existing and continuing to self-perpetuate in societies over longer periods of time. What makes one meme persist while another fades, whether in terms of rapid and widescale uptake or becoming embedded in socio-cultural practices over centuries, is ‘how acceptable it is to the population’ (Dawkins, 1976, p. 194).

Like memes generally, internet and digital media memes, which may include ‘viral’ videos, online catchphrases, images, as well as cultural practices (such as ‘happy slapping’, ‘planking’ and ‘neknomination’),³ become sites for community cultural meaning-making and boundary-setting (Gal, Shifman & Kampf, 2016). Some such memes may fade as short-lived fads, but many endure: their variations and adaptations being replicated across societies and over time. Thus, such memes can reflect social norms among peer groups, local communities and societies broadly; constituting a practice of norm creation and/or reproduction (Shifman, 2014). Some commentators and scholars have gone further, observing that ‘viral memes are capable of doing lasting damage’ (Godwin, 1994, n.p; see also Giardina, Denzin, & Kien, 2013), particularly as sites for the transmission of social ills such as racist and sexist extremism (Powell & Henry, 2017). At the same time, though content that elicits a negative emotional response spreads faster than positive content (Guadagno, Rempala, Murphy, & Okdie, 2013), virality and memetic culture are not always inherently negative (see Chapter 4). For instance, feminist scholars and some criminologists have identified the positive potential of ‘survivor selfies’ in the context of domestic and/or sexual violence to drive new practices of informal and ‘viral’ justice (Powell, 2015a, 2015b; discussed further in Chapters 7 and 8).

Visual Communication and Conversations

Images carry particular importance in contemporary digital society. Indeed, such is the influence of the visual in day-to-day modern life that some social theorists have suggested that imagery is becoming a central practice through which we communicate (van House, 2011); others refer to social image-sharing as a form of ‘visual conversation’ (Katz & Crocker, 2015). Where once we wrote or telephoned to share our experiences with loved ones, family and friends, increasingly we share updates via photos and videos on public, quasi-public and private social media networks and other digital applications.

The widespread availability, ease of use and ‘perpetual contact’ (Katz & Aakhus, 2002) of digital camera-enabled devices is associated with similarly widespread image-taking and sharing practices. Now ‘images can be made any time, any place, without prior planning ... what is considered photo-worthy has expanded to include the everyday’ (van House, 2011, p. 127). Indeed, for van

House (2011), self-representation through making, showing, viewing and talking about images forms part of how we *enact our selves* and contributes to the construction of collective social norms. The ways in which image-sharing and visual conversation might be implicated in both perpetration of, and community responses to, crime and justice are further explored in Chapter 5.

Corporatisation and 'Private' Public Space

In digital society, public and private life seem to be fusing in radical new ways. First, individuals are increasingly documenting and sharing images of private life with broader publics, as described above. Second, the *ways* in which such content is shared further blur the traditional public/private divide. While some social media platforms might be considered largely public spaces (such as Twitter), others require a login to access and further enable users to restrict their shared content to select groups and individuals (such as Facebook and Google+). Moreover, as individuals, we frequently shift seamlessly — both deliberately and sometimes unknowingly — between public and restricted content-sharing on our social media networks (Bruns & Highfield, 2015; Papacharissi, 2010).

In all cases, these platforms, whether public, quasi-public, or 'private' (to the extent that content is not visible by those outside of the user's selected group), are developed, administered and regulated by private corporations. Thus, in social institutional terms, social media spaces might all be considered simultaneously both public and private because whatever the user's expectation — open public access or user-determined privacy — in practice, it is ultimately the private companies who regulate these spaces, determining who has access, which content is to be shared, how widely it is viewed (such as through algorithmic content moderation described above) and on what grounds it is removed. In this corporatisation of both public and private life, companies such as Facebook and Google engage in practices of 'networked authoritarianism' and 'corporate censorship' (Mackinnon, 2013), arguably in place of the declining role of the terrestrial state (further discussed in Chapter 3). Indeed, Anthony Wilhelm (2000) has long problematised the privatisation of public online space and the ways in which the political interests of citizens give way to corporate and commercial interests. The majority of citizens' digital participation occurs in privately owned and regulated spaces, rather than in a democratic online agora (Tidwell, 1999).

Digital Social Inequalities

Access to communications technology, the first-level 'digital divide', differs by country, locale, socio-economic factors, education and race, as well as by gender (International Telecommunication Union, 2016). For example, while developed countries have high population-level internet access at 81%, developing countries have roughly half this access at 40.1% (International Telecommunication Union, 2016). Yet developing regions are home to 2.5 billion internet users, compared to one billion users in the developed world (International Telecommunication Union, 2016). Such inequalities are a serious concern, as reduced internet access has flow-on effects, including reduced access to education, economic, social and civic engagement opportunities (Antonio & Tuffley, 2014).

Among those who have internet access, concerning differences in internet use and online experiences emerge (Büchi, Just, & Latzer, 2015; van Deursen & van Dijk, 2014; Halford & Savage, 2010): the second-level 'digital divide'. Studies are increasingly examining purposes and parity of participation across age, socio-economic status, gender, sexuality and race. For example, studies

consistently demonstrate that younger groups use technology at higher rates and more often for entertainment and social purposes than older groups, while lower educated groups tend to use communications technology for entertainment purposes more than those with higher education. In these studies, more highly educated groups were more likely to report transactional or commercial uses of technology than lower educated groups, while men continued to report both more frequent and more entertainment-based internet use than women, whose online engagements are typically more relational (Büchi, Just, & Latzer, 2015). Certainly, it appears that some groups are more likely to have negative experiences of online participation, marked by harassment and abuse, for example. Several studies have identified gender, sexuality and race-based harassment and abuse across various platforms, including social media, online communities and virtual gaming environments (Fox & Tang, 2014; Jane, 2014; Powell & Henry, 2017). Some explanations for this second-level divide include identifying technology itself as a 'classed', 'gendered' and 'raced' space developed by, for the purposes of, and largely used by, white middle-class men (Wajcman, 2004). Conversely, as suggested by Halford & Savage (2010), a key challenge facing contemporary societies is to promote *digital social inclusion*, so that all groups are able to benefit from the education, workforce, economic, civic and social opportunities that online participation opens up.

Democratisation and Participatory Politics

Media and legal scholars, political scientists and sociologists have variously studied changes in the nature of communications with the advent of user-generated content, and in particular social media. Such user-generated and participatory media have variously been described as promoting democratic citizen participation in public life (Loader & Mercea, 2011); exposing state crime, such as cases of police brutality or military misuse of force (Reilly, 2013); facilitating revolutionary action against autocratic government regimes (Christensen, 2011); supporting police investigations and evidence-gathering (Trottier, 2012; Williams et al., 2013); monitoring communications of suspected terrorist networks by the State (Oh, Agrawal & Rao, 2011); and aiding crisis responses during natural disasters (Bruns & Burgess, 2013). These analyses traverse disciplinary boundaries, including politics, law, criminology, sociology, computer sciences, media and cultural studies. Overall, the implication is that social media, in particular, represents a powerful tool for an increasingly *citizen-led* and *participatory* politics. While the traditional news media is routinely subject to critique for having 'weakened public life and civic engagement, alienating citizens' (Haas & Steiner, 2001, p. 24), social media has been heralded as having transformed the capacity for more participatory and democratic modes of citizen engagement in public life (Loader & Mercea, 2011; Yar, 2012a).

In particular, many scholars have noted the potential for citizen participation via social media to enable representation of marginalised and/or disempowered social groups whose voices are often unheard in traditional media and public discourse (Papacharissi, 2010). Rather than representing a singular online forum, social media may be better described as providing multiple opportunities for 'counterpublic' communications (Boyd, 2011; Bruns, Enli, Skogerbo, Larsson, & Christensen, 2016; Powell, 2015a, 2015b; Renninger, 2014; Rentschler, 2014). This conceptualisation of the function of social media as a democratising force builds on the work of feminist theorist Nancy Fraser (1990) who, in critique of Jurgen Habermas' notion of a singular public sphere of communicative action, suggested that subordinated social groups form their own parallel public spheres, which she referred to as 'subaltern counterpublics'. Fraser described the emancipatory potential of such counterpublics

which, she said, are not separatist subcultures but rather ‘aspire to disseminate one’s discourse into ever-widening arenas’ (Fraser, 1990, p. 67). Fraser (1990) further asserted that, in stratified societies in which the democratic ideal of participatory parity is not fully realised for subordinated groups, subaltern counterpublics serve a dual function:

On the one hand, they function as spaces of withdrawal and regroupment; on the other hand, they also function as bases and training grounds for agitational activities directed toward wider publics ... This dialectic enables subaltern counterpublics partially to offset, although not wholly to eradicate, the unjust participatory privileges enjoyed by members of dominant social groups in stratified societies (p. 68).

This positive take on the potential of online participation to act as a ‘virtual town square’ (Kavanaugh, Perez-Quinones, Tedesco, & Sanders, 2010), extending democratic engagement among otherwise marginalised groups, is of course, not without criticism. Perhaps most famously, media scholar Evgeny Morozov (2009, 2011) has urged caution in interpretations of the internet, social media and online activism as fundamentally a force for freedom. Instead, Morozov points to the myriad ways in which democracy is threatened by authoritarianism in the form of consumerism and corporatisation, both of which have only expanded in the digital age. We cannot, he said, tweet our way to freedom (Morozov, 2011).

Internet freedom itself presents particular tensions for criminologists. On the one hand, law enforcement in the context of global and organised cybercrime requires state oversight, regulation and intervention. From a cybercriminological perspective, user anonymity, encryption, location spoofing and other features of deep web and dark web participation are more appropriately viewed through a lens of suspected illicit activity, than as the tools of democracy. Yet, such a view potentially places cybercriminology on the side of increased government control and an expanding ‘securitization of cyberspace’ (Morozov, 2011; discussed further in Chapter 3), rather than engaging critically with concerns over privacy, human rights and internet freedom.

On the other hand, the democratising potential of online participation to open up debates about crime and justice, to challenge the punitive law-and-order politics of contemporary liberal democracies (see Chapter 1) and to promote alternative discourses of inclusion and social justice are exciting prospects for criminology. And they are particularly exciting for *critical criminologies*, whose foundation lies in critiques of power, inequality and the role of the state.

Critical and Cultural Criminologies in Digital Society

Critical criminologies represent a collection of perspectives on crime and institutions of criminal justice including the state apparatus that oversees them (Muncie, 2000; Schwendinger & Schwendinger, 1970; Yar, 2012c). Whether focusing on ‘conflict’, ‘radical’, ‘abolitionist’, ‘decriminalising’ or other lenses, the core of all critical criminologies is a counterpoint to individualist explanations of crime. Instead, critical criminologies seek to uncover and challenge the socially and structurally produced context of inequalities in power that define crime itself, underpin its causes and are profoundly implicated in responses to it. As Majid Yar explained, critical criminology ‘owes much of its organising assumptions to an earlier appropriation of Marxist ideas’ (Yar, 2012c, p. 53). In 1916, Dutch criminologist Willem Bongers, for example, outlined the relationships between capitalism and class

inequalities, on the one hand, and crime and justice, on the other, in *Criminality and Economic Conditions* (Bonger, 1916). Bonger argued that capitalism itself created a culture of individualism, materialism and greed at the same time as ‘the criminal justice system emerged as a social institution that criminalizes the greed of the poor while ignoring the greed of the wealthy’ (Welch, 1996, p. 44).

In keeping with its roots as a criminology that interrogates the role and actions of the state, as well as the exercise of power in societies, contemporary critical criminologies are organised around a core concern with *social harms*, rather than with more narrowly defined *crimes* and *crime control* (Muncie, 2000; Yar, 2012c). As criminologist John Muncie (2000, p. 1) further explained, ‘a vast range of harms — sexism, racism, imperialism, economic exploitation and so on — could and should be included as the focal concern of an area of study called criminology’. Thus, the uniting themes of critical criminology might be broadly understood as a concern with collective harms, human rights and social justice.

The focus on harms rather than crimes, as well as collective harms and human rights concerns, are important inclusions for our purposes here. The digital criminology that we have in mind is also a critical criminological approach, taking as its central focus the intersections of technologies and social harms, as well as a broader concern with justice and injustice beyond the state. Such a focus, we believe, represents a crucial counterpoint to the dominant individualist, rationalist-actor and crime control concerns of conventional cybercriminologies.

At the same time as attempts to control cybercrime seek to enhance law enforcement and extend the global reach of criminal law through international cooperation in the fight against cybercrime, critical criminologies suggest caution. For example, who might be the casualties of the ‘war’ on cybercrime? Are privacy concerns, human rights and interpersonal harms sidelined by an overwhelming concern with state security, the globalisation of cybercrime and counterterrorism? To what extent might rhetorics of ‘risk’ and cyber ‘law and order’ contribute to further and over-criminalisation of already marginalised communities? In this, we are guided by the provocative question posed by criminologists Herman and Julia Schwendinger in their 1970 article: are we, as criminologists, ‘Defenders of order or guardians of human rights?’ (Schwendinger and Schwendinger, 1970). These are significant questions for a digital criminology, and ones we explore throughout this book.

Yet, it is not only a concern with structural inequalities, social harms, human rights and justice beyond the state that we seek to embed within digital criminological approaches to crime and justice. In light of the key features described earlier, it appears apparent that the socio-structural and the socio-cultural have become enmeshed in powerful ways in digital society.

Cultural criminology, meanwhile, as its founding advocates identify, can be understood as a distinct subtype of critical criminology (see Ferrell, Hayward, Morrison, & Presdee, 2004). As Jeff Ferrell (2013, p. 258) defined it, cultural criminology is an ‘orientation designed especially for critical engagement with the politics of meaning surrounding crime and crime control, and for critical intervention into those politics’. Ferrell further identified three spheres of cultural criminological focus: situations or meaning in interactions, subcultural meanings and media and popular culture. And yet, these spheres themselves arguably take on new meanings in light of the features of digital society; in particular, convergence and visual conversations.

Some cultural criminologists have sought to identify the significance of the ‘digital turn’ in socio-cultural representations and considered the complex interactions of images as both producers and reproducers of meanings about crime (Ferrell, Hayward & Young, 2008; Hayward & Presdee, 2010). Keith Hayward (2012), for example, has identified the problematic narrow scope of conventional

cybercrime scholarship and called for further criminological engagement with spatial and socio-technical theory. Rather than taking a cybercrime focus on technology as a tool of diffusion that has increased criminal opportunities and networks, he suggests that 'a better way of thinking about digital/online (criminal) activities is as a *process*, namely as phenomena in constant dialogue and transformation with other phenomena/technologies' (Hayward, 2012, p. 455, emphasis in original). Hayward, for example, drawing on Actor-Network Theory (Latour, 1993, 2005) and Castells' (1996) networked 'space of flows', among others, notes the potential for communication technologies 'to alter the way we experience the sense of *being* in an environment' (emphasis in original, 2012, p. 456).

Other scholars have explored how the social web may be changing the culturally constructed nature, and socially constituted practices, of crime and deviance (Jewkes, 2007; Jewkes & Yar, 2010, 2013; Surette, 2015). Yar (2012b), for example, makes a persuasive case for considering the impact of communications technologies and new media as itself a *motivator* of criminality. In discussing the practice of 'happy slapping', Yar (2012b, p. 252) argues that 'crucial to understanding this phenomenon is the role played by participants' desire to be seen, and esteemed or celebrated, by others for their criminal activities'. He argues that this 'will-to-represent' one's transgressive self is linked to broader trends both of a self-creating subjectivity associated with processes of de-traditionalisation (Beck & Beck-Gernsheim, 2002; Giddens, 1991) and the ready availability of new media platforms for such self-creation (Yar, 2012b, p. 251).

Though much cultural criminology has focused on the ways that images of crime, criminality and the criminal are produced and represented in news media, as well as in fiction and popular culture, an emerging sub-field of visual criminology explores the increasingly blurred distinction between 'real' and 'imagined' images of crime in digital society (Brown, 2014; Carrabine, 2011, 2012; Young, 2012, 2014). Such engagement with images is an important perspective for digital criminology, and one which we take up in more detail in Chapter 5.

A further task, then, for digital criminology is to examine the ways in which the digital has become enmeshed with the *experiences*, *meanings* and *images* of crime and justice, whether from the perspective of victims, perpetrators, the criminal justice system or citizen engagement beyond the state. In so doing, it is important not to lose sight of varying degrees to which digital technologies are integrated in offending, victimisation and justice; at the same time as such integration may reflect broader trends in digital participation and culture in everyday life. In digital society, criminologists arguably need to engage with interdisciplinary perspectives on digital technology and sociality, not only to better understand crime and justice in this context but also so as not to overstate the unique contribution of technological practices in crime itself.

Conclusion

In briefly charting these sub-disciplinary boundaries, it is important to recognise that the demarcations between them are not solid; they are better represented as clusters of criminological engagement, which blur and bleed into each other at the edges. Nonetheless, we suggest that critical and cultural criminological scholarship has yet to fully engage with some of the emerging cultural trends of digital society and with its key elements, which have become integral to everyday life and consequently feature in everyday crime and (in)justices.

Underscoring digital criminology is an exploration of the ways in which *technosocial* cultures and practices come to bear — not only directly on crime and criminal justice but on social harms, social

justice, inequality and meaning-making in digital society. Arguably, where conventional cybercriminologies have fallen short is that much of the field succumbs to degrees of *techno-criminal determinism* and of *individualism*. By this, we mean that the research questions asked, and the types of analyses and understandings provided, suggest that the changes of most importance for criminology arise from the opportunities for crime created by technologies themselves, as well as the challenges for law enforcement in detection and response. A further common feature is to draw on psychological frameworks and positivist methods to explore why the individual ‘cybercriminal’ might be drawn to these opportunities or susceptible to their temptations. By comparison, other transformations in crime and justice remain underexamined, and much research is lacking in an interdisciplinary lens through which to develop alternative concepts, questions and analyses.

But what if criminologists were to turn this engagement with techno-criminal determinism and individualism on its head? What if we were to take, as our starting point, an understanding of the socio-structural, socio-cultural and socio-technical bases of crime and justice?

When we approach criminological research from this position, through the concepts of *digital society* and *technosociality*, new avenues for exploration emerge. Technology, for example, is not understood to cause racism or race-based hate speech (as discussed in Chapter 6); but race certainly orders contemporary digital life in particular ways. Furthermore, the interaction of racism with new social technologies produces not only individual criminal acts, but also social practices of communication and action that can, and do, result in collective harms. Here, technology is understood neither as a cause of harm nor as a tool of harm, but rather as enmeshed in both pre-existing and newly emerging social practices. Though this chapter has sought to position an emerging digital criminological framework through its relationship to existing cyber, critical and cultural criminologies, much of its discussion has remained within the level of individual and interpersonal crimes; albeit positioning these within their broader structural context. Yet, a further critical issue for criminology is the challenges that a digital society — which is, after all, also a global society — presents for state-based understandings of crime and justice. In the following chapter, we consider global framings of ‘risk’, ‘state security’ and ‘state harms’ in the context of a digital society.

Notes

- 1 Personal computing workstations, such as the Xerox Alto in 1973, the Sun 1 in 1982, and the Apple Macintosh 128k in 1984, can be differentiated from the centralised, stationary early computers. These personal computing workstations were also among the first to use a graphical user interface, which did not require specific knowledge of command-line programming, and thus radically opened up computing to individual users both through portability and ease of use (Goldberg, 1988).
- 2 While some criminological and other research continues to refer to ‘child pornography’, we reject such terminology on the basis that it minimises the seriousness of these crimes. Indeed, according to Liddell and Powell (2015), there are at least three key problems with not calling these images what they are: online child abuse material or child exploitation material. First, calling these images ‘pornography’ creates a false distinction between the viewing of images and the contact sexual abuse of a child. Second, it creates confusion by aligning the images with legally acceptable forms of pornography. And third, it contributes to the normalisation of child sexual assault.
- 3 ‘Happy slapping’ refers to a meme originating in the UK in 2004, in which an individual or group of teens or young adults would film what were typically minor assaults (such as slapping or hitting a victim), and then post the recordings online. ‘Planking’ refers to a photo-based meme that gained popularity in 2011. It involved lying face down with arms held to the sides (like a plank of wood) in unusual and often dangerous public spaces, photographing the scene and then sharing the image online. Finally, according to KnowYourMeme.com: ‘Neknominate’, also known as Neck and Nominate in the UK, is a drinking game

in which 'participants record themselves partaking in a physically extreme activity after chugging alcoholic beverages and challeng[ing] others to outdrink them in the identical fashion'. Each of these internet memes has been implicated in a small number of extreme and violent instances that have resulted in rapes, homicides and/or accidental deaths. 'Happy slapping' assaults, for example, have included sexual assault and murder (Ching, Daffern, & Thomas, 2012; Saunders, 2005).

Recommended Further Reading

- McGovern, A. (2015). Introduction: Crime, media and new technologies. *Current Issues in Criminal Justice*, 27(2), 137.
- McGuire, M. R. (2016). Cybercrime 4.0: Now what is to be done? In R. Matthews (Ed.), *What is to be done about crime and punishment? Towards a 'public Criminology'* (pp. 251–279). Basingstoke: Palgrave Macmillan.
- Smith, G. J., Bennett Moses, L., & Chan, J. (2017). The challenges of doing criminology in the big data era: towards a digital and data-driven approach. *The British Journal of Criminology*, 57(2), 259–274.

References

- Aas, K. F. (2016). Preface. In D. Robert, & M. Dufresne (Eds.), *Actor-network theory and crime studies: Explorations in science and technology* (pp. ix–xii). London: Routledge.
- Aas, K. F. (2007a). Analysing a world in motion: Global flows meet 'criminology of the other'. *Theoretical Criminology*, 11(2), 283–303.
- Aas, K. F. (2007b). Beyond 'the desert of the real': Crime control in a virtual (ised) reality. In Y. Jewkes (Ed.), *Crime online* (pp. 160–178). Cullompton, UK: Willan Publishing.
- Agichtein, E., Brill, E., & Dumais, S. (2006). *Improving web search ranking by incorporating user behavior information*. Paper presented at the 29th Annual International ACM Sigir Conference on Research and Development in Information Retrieval, Seattle, WA.
- Antonio, A., & Tuffley, D. (2014). The Gender Digital Divide in Developing Countries. *Future Internet*, 6(4), 673–687.
- Armagh, D. S. (2001). Virtual child pornography: Criminal conduct or protected speech. *Cardozo Law Review*, 23(6), 1993–2010.
- Baek, Y. M., Bae, Y., & Jang, H. (2013). Social and parasocial relationships on social network sites and their differential relationships with users' psychological well-being. *Cyberpsychology, Behavior, and Social Networking*, 16(7), 512–517.
- Bauman, Z. (2000). *Liquid Modernity*. Cambridge: Polity.
- Bayer, J. B., Campbell, S. W., & Ling, R. (2016). Connection cues: Activating the norms and habits of social connectedness. *Communication Theory*, 26(2), 128–149.
- Beck, U., & Beck-Gernsheim, E. (2002). *Individualisation*. London: Sage.
- Bennett, S. C. (2012). The right to be forgotten: Reconciling EU and US perspectives. *Berkeley Journal of International Law*, 30(1), 161.
- Bergman, M. K. (2001). White paper: the deep web: surfacing hidden value. *Journal of Electronic Publishing*, 7(1), 1–17. doi: 10.3998/3336451.0007.104.
- Berk, R. (2008). How you can tell if the simulations in computational criminology are any good. *Journal of Experimental Criminology*, 4(3), 289–308.
- Berry, D. (Ed.). (2012). *Understanding Digital Humanities*. Basingstoke: Palgrave Macmillan.
- Birks, D., Townsley, M., & Stewart, A. (2012). Generative explanations of crime: Using simulation to test criminological theory. *Criminology*, 50(1), 221–254.
- Blanchette, J. F., & Johnson, D. G. (2002). Data retention and the panoptic society: The social benefits of forgetfulness. *The Information Society*, 18(1), 33–45.
- Bonger, W. A. (1916). *Criminology and economic conditions*. Boston: Little, Brown.

- Bonilla, Y., & Rosa, J. (2015). # Ferguson: Digital protest, hashtag ethnography, and the racial politics of social media in the United States. *American Ethnologist*, 42(1), 4–17.
- Boyd, D. (2011). Social network sites as networked publics. In Z. Papacharissi (Ed.), *A networked self: Identity, community and culture on social network sites*. New York: Routledge.
- Brantingham, P. L. (2011, September). *Computational criminology*. Keynote address to the European Intelligence and Security Informatics Conference, 12–14 September. Athens, Greece: IEEE.
- Brewer, R. (2017). Controlling crime through networks. In P. Drahos (Ed.), *Regulatory theory: Foundations and applications* (pp. 447–464). Canberra: Australian National University Press.
- Brown, S. (2006). The criminology of hybrids Rethinking crime and law in technosocial networks. *Theoretical Criminology*, 10(2), 223–244.
- Brown, M. (2014). Visual criminology and carceral studies: Counter-images in the carceral age. *Theoretical Criminology*, 18(2), 176–197.
- Bruns, A., & Burgess, J. (2013). Crisis communication in natural disasters: The Queensland floods and Christchurch earthquakes. *Twitter and Society*, 89, 373–384.
- Bruns, A., & Highfield, T. (2015). From news blogs to news on twitter: Gatewatching and collaborative news curation. In S. Coleman, & D. Freelon (Eds.), *Handbook of digital politics* (pp. 325–339). Cheltenham, UK: Edward Elgar.
- Bruns, A., Enli, G., Skogerbo, E., Larsson, A. O., & Christensen, C. (Eds.). (2016). *The Routledge companion to social media and politics*. London: Routledge.
- Büchi, M., Just, N., & Latzer, M. (2016). Modeling the second-level digital divide: A five-country study of social differences in Internet use. *New Media & Society*, 18(11), 2703–2722.
- Carrabine, E. (2011). Images of torture: Culture, politics and power. *Crime, Media, Culture*, 7(1), 5–30.
- Carrabine, E. (2012). Just images: Aesthetics, ethics and visual criminology. *The British Journal of Criminology*, 52(3), 463–489.
- Casey, E. (2011). *Digital Evidence and Computer Crime: Forensic Science, Computers, and the Internet*. Cambridge, England: Academic Press.
- Castells, M. (1996). *The information age: Economy, society, and culture. Volume I: The rise of the network society*. Malden: Wiley Blackwell.
- Castells, M. (2001). *The Internet galaxy: Reflections on the Internet, business, and society*. Oxford, New York: Oxford University Press.
- Cecere, G., Corrocher, N., & Battaglia, R. D. (2015). Innovation and competition in the smartphone industry: Is there a dominant design? *Telecommunications Policy*, 39(3), 162–175.
- Ceruzzi, P. E. (2003). *A history of modern computing*. Cambridge, MA: MIT Press.
- Chan, J., & Bennett Moses, L. (2016). Is big data challenging criminology? *Theoretical Criminology*, 20(1), 21–39.
- Ching, H., Daffern, M., & Thomas, S. (2012). Appetitive violence: A new phenomenon? *Psychiatry, Psychology and Law*, 19(5), 745–763.
- Christensen, C. (2011). Twitter revolutions? Addressing social media and dissent. *The Communication Review*, 14(3), 155–157.
- Clough, B., & Mungo, P. (1992). *Approaching zero: Data crime and the computer underworld*. London: Faber & Faber.
- Croall, H. (1992). White collar crime. *Criminal justice and criminology*, Bristol: Open University Press.
- Das, A. S., Datar, M., Garg, A., & Rajaram, S. (2007). *Google news personalization: Scalable online collaborative filtering*. Paper presented at the 16th International Conference on World Wide Web, Banff, Alberta, Canada.
- Dawkins, R. (1976). *The Selfish Gene*. Oxford: Oxford University Press.
- Décary-Héty, D., & Dupont, B. (2012). The social network of hackers. *Global Crime*, 13(3), 160–175.
- Degli Esposti, S. (2014). When big data meets dataveillance: The hidden side of analytics. *Surveillance & Society*, 12(2), 209–225.
- Diamond, B. & Bachmann, M. (2015). Out of the beta phase: Obstacles, challenges, and promising paths in the study of cyber criminology. *International Journal of Cyber Criminology*, 9(1), 24–34.

- Diefenbach, S., & Christoforakos, L. (2017). The selfie paradox: Nobody seems to like them yet everyone has reasons to take them. An exploration of psychological functions of selfies in self-presentation. *Frontiers in Psychology*, 8(7), 18–31.
- Esposito, L. C. (1998). Regulating the Internet: The new battle against child pornography. *Case Western Reserve Journal of International Law*, 30(2/3), 541–564.
- European Commission. (2014). Factsheet on the “Right to be Forgotten” ruling (C-131/12). Retrieved from Brussels. Available at: www.ec.europa.eu/justice/data-protection/files/factsheets/factsheet_data_protection_en.pdf (last accessed 29 November 2017).
- Ferrell, J. (2013). Cultural criminology and the politics of meaning. *Critical Criminology*, 21(3), 257–271.
- Ferrell, J., Hayward, K., Morrison, W., & Presdee, M. (Eds.). (2004). *Cultural criminology unleashed*. London: Routledge.
- Ferrell, J., Hayward, K., & Young, J. (2008). *Cultural Criminology: an invitation*. London: Sage.
- Ferrell, J., & Sanders, C. (Eds.). (1995). *Cultural criminology*. London: Glasshouse Press.
- Flaxman, S., Goel, S., & Rao, J. M. (2016). Filter bubbles, echo chambers, and online news consumption. *Public Opinion Quarterly*, 80(S1), 298–320.
- Fletcher, G., Griffiths, M., & Kutar, M. S. (2011). A day in the digital life: A preliminary sousveillance study retrieved from New York. Available at: www.ssrn.com/abstract=1923629.
- Fraser, N. (1990). Rethinking the public sphere: A contribution to the critique of actually existing democracy. *Social Text*, 25(26), 56–80.
- Fox, J., & Tang, W. Y. (2014). Sexism in online video games: The role of conformity to masculine norms and social dominance orientation. *Computers in Human Behavior*, 33, 314–320.
- Gal, N., Shifman, L., & Kampf, Z. (2016). “It Gets Better”: Internet memes and the construction of collective identity. *New Media & Society*, 18(8), 1698–1714.
- Gajda, A. (2017). Privacy, press, and a right to be forgotten in the United States. Tulane Public Law Research Paper No. 17-11. Retrieved from Tulane, United States. Available at: www.ssrn.com/abstract=2976529 (last accessed 29 November 2017).
- Garrett, R. K. (2009). Echo chambers online? Politically motivated selective exposure among internet news users. *Journal of Computer-Mediated Communication*, 14(2), 265–285.
- Gerlitz, C., & Helmond, A. (2013). The like economy: Social buttons and the data-intensive web. *New Media & Society*, 15(8), 1348–1365.
- Giardina, M. D., Denzin, N. K., & Kien, G. (2013). Media Memes and Prosumerist Ethics. *Cultural Studies ↔ Critical Methodologies*, 13(6), 554–561.
- Giddens, A. (1991). *Modernity and self-identity: Self and society in the late modern age*. Stanford, CA: Stanford University Press.
- Godwin, M. (1994) Meme, Counter-Meme, *Wired*. Available at: www.wired.com/wired/archive/2.10/godwin.if.html (last accessed 29 November 2017).
- Goggin, G. (2014). Facebook’s mobile career. *New Media & Society*, 16(7), 1068–1086.
- Goldberg, A. (Ed.). (1988). *A history of personal workstations* (No. 04; QA76. 17, G6.). New York: ACM Press.
- Goldstein, C. M., Thomas, J. G., Wing, R. R., & Bond, D. S. (2017). Successful weight loss maintainers use health tracking smartphone applications more than a nationally representative sample: Comparison of the National Weight Control Registry to Pew Tracking for Health. *Obesity Science & Practice*, 3(2), 117–126.
- Grabosky, P. N. and Smith, R. G. (1998). *Crime in the Digital Age: Controlling Telecommunications and Cyberspace Illegalities*. Sydney: The Federation Press.
- Grabosky, P. N. (2001). Virtual criminality: old wine in new bottles? *Social & Legal Studies*, 10(2), 243–249.
- Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360–1380.
- Greenleaf, G. (1990). Computers and crime—the hacker’s new rules. *Computer Law & Security Review*, 6(2), 21–22.
- Griffith, D. S. (1990). The Computer Fraud and Abuse Act of 1986: A measured response to a growing problem. *Vanderbilt Law Review*, 43(2), 453–490.
- Guadagno, R. E., Rempala, D. M., Murphy, S., & Okdie, B. M. (2013). What makes a video go viral? An analysis of emotional contagion and internet memes. *Computers in Human Behavior*, 29(6), 2312–2319.

- Halder, D., & Jaishankar, K. (2012). *Cyber crime and the victimization of women: laws, rights and regulations*. Hershey, PA: IGI Global.
- Halford, S., & Savage, M. (2010). Reconceptualizing digital social inequality. *Information, Communication & Society*, 13(7), 937–955.
- Hannak, A., Sapiezynski, P., Kakhki, A. M., Krishnamurthy, B., Lazer, D., Mislove, A., & Wilson, C. (2013, 13–17 May 2013). Measuring personalization of web search. Paper presented at the 22nd International Conference on World Wide Web, Rio de Janeiro, Brazil.
- Harwood, J., Dooley, J. J., Scott, A. J., & Joiner, R. (2014). Constantly connected—The effects of smart-devices on mental health. *Computers in Human Behavior*, 34, 267–272.
- Haas, T., & Steiner, L. (2001). Public journalism as a journalism of publics: Implications of the Habermas-Fraser debate for public journalism. *Journalism: Theory, Practice & Criticism*, 2(2), 123–147.
- Haraway, D. J. (1991). A cyborg manifesto. In *Simians, Cyborgs, and Women: The Reinvention of Nature* (pp. 149–181). New York: Routledge.
- Hay, J., & Couldry, N. (2011). Rethinking convergence/culture. *Cultural Studies*, 25(4–5), 473–486.
- Hayward, K. & Presdee, M. (Eds.). (2010) *Framing crime: Cultural criminology and the image*. Abingdon, UK: Routledge.
- Hayward, K. J. (2012). Five spaces of cultural criminology. *British Journal of Criminology*, 52(3), 441–462.
- Hollinger, R. C., & Lanza-Kaduce, L. (1988). The process of criminalization: The case of computer crime laws. *Criminology*, 26(1), 101–126.
- Holt, T. J. (Ed.). (2011). *Crime On-line: Causes, Correlates and Context*. Durham: Carolina Academic Press.
- Holt, T., & Bossler, A. M. (2008). Examining the Applicability of Lifestyle-Routine Activities Theory for Cybercrime Victimization. *Deviant Behavior*, 30(1), 1–25.
- Holt, T. J. (2013). Examining the forces shaping cybercrime markets online. *Social Science Computer Review*, 31(2), 165–177.
- Holt, T. J. & Bossler, A. M. (2014). An assessment of the current state of cybercrime scholarship. *Deviant Behavior*, 35(1), 20–40.
- Holt, T. J., & Bossler, A. M. (2015). *Cybercrime in Progress: Theory and Prevention of Technology-enabled Offenses*. New York: Routledge.
- Housley, W., Procter, R., Edwards, A., Burnap, P., Williams, M., Sloan, L., . . . Greenhill, A. (2014). Big and broad social data and the sociological imagination: A collaborative response. *Big Data & Society*, 1(2), 1–15.
- Hutchings, A., & Hayes, H. (2008). Routine activity theory and phishing victimisation: who gets caught in the net. *Current Issues Criminal Justice*, 20(3), 433–452.
- Ibrahim, Y. (2015). Instagramming life: Banal imaging and the poetics of the everyday. *Journal of Media Practice*, 16(1), 42–54.
- International Telecommunication Union. (2016). *ICT facts and figures 2016*. Geneva. Available at: www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2016.pdf (last accessed 29 November, 2017).
- Iyengar, S., & Hahn, K. S. (2009). Red media, blue media: Evidence of ideological selectivity in media use. *Journal of Communication*, 59(1), 19–39.
- Jaishankar, K. (2007). Establishing a theory of cyber crimes. *International Journal of Cyber Criminology*, 1(2), 7–9.
- Jaishankar, K. (2008). Space Transition Theory of cyber crimes. In F. Schmallager, & M. Pittaro, (Eds.), *Crimes of the Internet* (pp. 283–301). Upper Saddle River, NJ: Prentice Hall.
- Jaishankar, K. (Ed.). (2011). *Cyber criminology: exploring internet crimes and criminal behavior*. Boca Raton, FL: CRC Press.
- Jane, E. A. (2014). ‘Back to the Kitchen, Cunt’: Speaking the unspeakable about online misogyny. *Continuum*, 28(4), 558–570.
- Jasmontaite, L., & Dimitrova, D. (2017). Online disaster management: Applicability of the European data protection framework and its key principles. *Journal of Contingencies and Crisis Management*, 25(1), 23–30.
- Jenkins, H. (2006). *Convergence culture: Where old and new media collide*. New York: New York University Press.
- Jenkins, H., & Deuze, M. (2008). Editorial. *Convergence: The Journal of Research into New Media Technologies*, 14(1), 5–12.
- Jewkes, Y. (Ed.). (2007). *Crime online* (pp. 160–178). Cullompton, UK: Willan Publishing.

- Jewkes, Y., & Yar, M. (Eds.) (2010). *Handbook of Internet Crime*. London: Routledge.
- Jewkes, Y., & Yar, M. (Eds.). (2013). *Handbook of Internet Crime*. Online: Routledge.
- Kaiser, D. W., Harrington, R. A., & Turakhia, M. P. (2016). Wearable fitness trackers and heart disease. *JAMA Cardiology*, 1(2), 239–239.
- Katz, J. E., & Aakhus, M. (2002). *Perpetual contact: Mobile communication, private talk, public performance*. Cambridge, UK: Cambridge University Press.
- Katz, J. E., & Crocker, E. T. (2015). Selfies | Selfies and Photo Messaging as Visual Conversation: Reports from the United States, United Kingdom and China. *International Journal of Communication*, 9, 1861–1872.
- Kavanaugh, A. (2003). Community networks and civic engagement: A social network approach. *The Good Society*, 11(3), 17–24.
- Kavanaugh, A. L., Reese, D. D., Carroll, J. M., & Rosson, M. B. (2005). Weak ties in networked communities. *The Information Society*, 21(2), 119–131.
- Kavanaugh, A., Perez-Quinones, M. A., Tedesco, J. C., & Sanders, W. (2010). Toward a virtual town square in the era of Web 2.0. In Hunsinger, J., Klastrup, L., & Allen, M. (Eds.), *International handbook of internet research*. (pp. 279–294). Dordrecht: Springer.
- Kim, J., Lim, S., Min, Y. H., Shin, Y. W., Lee, B., Sohn, G., . . . Shin, S. Y. (2016). Depression screening using daily mental-health ratings from a smartphone application for breast cancer patients. *Journal of Medical Internet Research*, 18(8), e216.
- Kling, R. (1980). Computer abuse and computer crime as organizational activities. *Computer Law Journal*, 2(1), 403–427.
- Lash, S. (2002). *Critique of information*. London: Sage.
- Latour, B. (1993). Ethnography of a high-tech case. In P. Lemonnier (Ed.) *Technological Choices: transformation in material cultures since the neolithic* (pp. 372–398), London: Routledge.
- Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. New York: Oxford University Press.
- Leiner, B. M., Cerf, V. G., Clark, D. D., Kahn, R. E., Kleinrock, L., Lynch, D. C., . . . Wolff, S. (2009). A brief history of the internet. *ACM SIGCOMM Computer Communication Review*, 39(5), 22.
- Liddell, M. & Powell, A. (2015). 'What's in a Name? Child abuse material is not 'Pornography'', *The Conversation*, August 13. Available at: www.theconversation.com/whats-in-a-name-online-child-abuse-material-is-not-pornography-45840 (last accessed 29 November 2017).
- Lim, W. M., & Lim, W. M. (2016). Understanding the selfie phenomenon: Current insights and future research directions. *European Journal of Marketing*, 50(9/10), 1773–1788.
- Loader, B. D., & Mercea, D. (2011) Networking democracy? Social media innovations and participatory politics. *Information, Communication & Society*, 14(6), 757–769.
- Lupton, D. (2013). Quantifying the body: Monitoring and measuring health in the age of mHealth technologies. *Critical Public Health*, 23(4), 393–403.
- Lupton, D. (2014). *Digital sociology*. London, UK: Routledge.
- MacKinnon, R. (2013). *Consent of the networked: The worldwide struggle for internet freedom*. New York: Basic Books.
- Mann, D., Sutton, M., & Tuffin, R. (2003). The evolution of hate. Social dynamics in white racist newsgroups. *Internet Journal of Criminology*, 1, 1–32.
- Mantelero, A. (2013). The EU proposal for a general data protection regulation and the roots of the 'Right to be Forgotten'. *Computer Law & Security Review*, 29(3), 229–235.
- Marres, N. (2017). *Digital sociology: The reinvention of social research*. Cambridge: Polity Press.
- Martin, J. (2014). *Drugs on the dark net: How cryptomarkets are transforming the global trade in illicit drugs*. Basingstoke: Palgrave Macmillan.
- Miller, V. (2011). *Understanding digital culture*. London: Sage Publications.
- Miller, G. (2012). The smartphone psychology manifesto. *Perspectives on Psychological Science*, 7(3), 221–237.
- Misra, S., Cheng, L., Genevie, J., & Yuan, M. (2016). The iPhone effect: The quality of in-person social interactions in the presence of mobile devices. *Environment and Behavior*, 48(2), 275–298.
- Mitchell, K. J., Finkelhor, D., Jones, L. M., & Wolak, J. (2010). Growth and change in undercover online child exploitation investigations, 2000–2006. *Policing & Society*, 20(4), 416–431.

- Montgomery, J. (1986). Computer crime. *American Criminal Law Review*, 24(3), 429–438.
- Morozov, E. (2009). The internet: A room of our own? *Dissent*, 56(3), 80–85.
- Morozov, E. (2011). *The net delusion: The dark side of internet freedom*. London: Allen Lane Publishing.
- Muncie, J. (2000). Decriminalizing criminology. In G. Lewis, S. Gewirtz, & J. Clark (Eds.), *Rethinking social policy* (pp. 217–228). London, UK: SAGE Publications.
- Munson, S. A., & Resnick, P. (2010). *Presenting diverse political opinions: How and how much*. Proceedings of the Sigchi Conference on Human Factors in Computing Systems, pp. 1457–1466, ACM.
- Murray, D. C. (2015). Notes to self: The visual culture of selfies in the age of social media. *Consumption Markets & Culture*, 18(6), 490–516.
- Oh, O., Agrawal, M., & Rao, H. R. (2011). Information control and terrorism: Tracking the Mumbai terrorist attack through twitter. *Information Systems Frontiers*, 13(1), 33–43.
- Papacharissi, Z. (2010). *A private sphere: Democracy in a digital age*. Cambridge: Polity Press.
- Pariser, E. (2011). *The filter bubble: What the internet is hiding from you*. New York: Penguin.
- Pittaro, M. L. (2007). Cyber stalking: An analysis of online harassment and intimidation. *International Journal of Cyber Criminology*, 1(2), 180–197.
- Powell, A. (2015a). Seeking informal justice online: Vigilantism, activism and resisting a rape culture in cyberspace. In Henry, N., Powell, A., & Flynn, A. (Eds.), *Rape Justice: Beyond the Criminal Law* (pp. 218–237). Basingstoke: Palgrave Macmillan.
- Powell, A. (2015b). Seeking rape justice: Formal and informal responses to sexual violence through technosocial counter-publics. *Theoretical Criminology*, 19(4), 571–588.
- Powell, A., & Henry, N. (2016). Policing technology-facilitated sexual violence against adult victims: police and service sector perspectives. *Policing and Society*, 28(3), 291–307. doi: 10.1080/10439463.2016.1154964.
- Powell, A., & Henry, N. (2017). *Sexual Violence in a Digital Age*. Basingstoke: Palgrave Macmillan.
- Pyrooz, D. C., Decker, S. H., & Moule Jr, R. K. (2015). Criminal and routine activities in online settings: Gangs, offenders, and the Internet. *Justice Quarterly*, 32(3), 471–499.
- Reilly, P. (2013). Every little helps? YouTube, sousveillance and the ‘anti-Tesco’ riot in stokes croft. *New Media & Society*, 17(5), 755–771.
- Renninger, B. J. (2014). “Where I Can Be Myself... Where I Can Speak My Mind”: Networked counterpublics in a polymedia environment. *New Media & Society*, 17(9), 1513–1529.
- Rentschler, C. A. (2014). Rape culture and the feminist politics of social media. *Girlhood Studies*, 7(1), 65–82.
- Reyns, B. W., Henson, B., & Fisher, B. S. (2011). Being pursued online applying cyberlifestyle–routine activities theory to cyberstalking victimization. *Criminal Justice and Behavior*, 38(11), 1149–1169.
- Ruppert, E., Law, J., & Savage, M. (2013). Reassembling social science methods: The challenge of digital devices. *Theory, Culture & Society*, 30(4), 22–46.
- Saunders, R. (2005). Happy slapping: Transatlantic contagion or home-grown, mass-mediated nihilism. *The London Consortium*, 1, 1–11.
- Schwendinger, H., & Schwendinger, J. (1970). Defenders of order or guardians of human rights? *Issues Criminology*, 5(2), 123–157.
- Senft, T. M., & Baym, N. K. (2015). Selfies introduction: What does the selfie say? Investigating a global phenomenon. *International Journal of Communication*, 9(19), 1588–1606.
- Shifman, L. (2014). *Memes in digital culture*. Cambridge, MA: MIT Press.
- Sieber, U. (1986). *The International Handbook on Computer Crime*. Chichester, UK: Wiley.
- Skeggs, B., & Yuill, S. (2016). The methodology of a multi-model project examining how facebook infrastructures social relations. *Information, Communication & Society*, 19(10), 1356–1372.
- Smith, D. R. (2017). The tragedy of self in digitised popular culture: The existential consequences of digital fame on Youtube. *Qualitative Research*, 17(6), 699–714.
- Smith, G. J., Bennett Moses, L., & Chan, J. (2017). The challenges of doing criminology in the big data era: Towards a digital and data-driven approach. *The British Journal of Criminology*, 57(2), 259–274.
- Smith, R., Grabosky, P., & Urbas, G. (2004). *Cyber Criminals on Trial*. Cambridge, UK: Cambridge University Press.

- Spitzberg, B. H., & Hoobler, G. (2002). Cyberstalking and the technologies of interpersonal terrorism. *New Media & Society*, 4(1), 71–92.
- Sugiura, L. (2018). *Respectable Deviance and Purchasing Medicine Online: Opportunities and Risks for Consumers*. Basingstoke: Palgrave Macmillan.
- Sunstein, C. R. (2004). Democracy and filtering. *Communications of the ACM*, 47(12), 57–59.
- Sunstein, C. R. (2009). *Going to extremes: How like minds unite and divide*. Oxford: Oxford University Press.
- Sunstein, C. R. (2017). *#Republic: Divided democracy in the age of social media*. Princeton, NJ: Princeton University Press.
- Surette, R. (2015). Thought bite: A case study of the social construction of a crime and justice concept. *Crime, Media, Culture*, 11(2), 105–135.
- Sutton, M. (2002). Race hatred and the far right on the Internet. *Criminal Justice Matters*, 48(1), 26–27.
- Swan, M. (2013). The quantified self: Fundamental disruption in big data science and biological discovery. *Big Data*, 1(2), 85–99.
- Schwendinger, H., & Schwendinger, J. (1970). Defenders of order or guardians of human rights. *Issues Criminology*, 5(2), 123–158.
- Thomas, D. and Loader, B. (Eds.). (2000). *Cyber crime: Law enforcement, security and surveillance in the information age*. London: Routledge.
- Tidwell, A. (1999). The virtual agora: Online ethical dialogues and professional communities. *First Monday*, 4(7), 6–14.
- Trottier, D. (2012). Policing social media. *Canadian Review of Sociology/Revue Canadienne de Sociologie*, 49(4), 411–425.
- Turkle, S. (2012). *Alone together: Why we expect more from technology and less from each other*. New York: Basic books.
- Van Deursen, A. J., & Van Dijk, J. A. (2014). The digital divide shifts to differences in usage. *New Media & Society*, 16(3), 507–526.
- Van Dijk, J. (2014). Datafication, dataism and dataveillance: Big data between scientific paradigm and ideology. *Surveillance & Society*, 12(2), 197.
- Van House, N. A. (2011). Personal photography, digital technologies and the uses of the visual. *Visual Studies*, 26(2), 125–134.
- Van Wilsem, J. (2011). Worlds tied together? Online and non-domestic routine activities and their impact on digital and traditional threat victimization. *European Journal of Criminology*, 8(2), 115–127.
- Wajcman, J. (2004). Gendered by design. *Internet Issue Brief*, 2, 11–12.
- Wall, D. (1997). Policing the Virtual Community: The Internet, Cyberspace and Cyber-Crime. In Francis, P., Davies, P. & Jupp, V. (Eds.) *Policing futures* (pp. 208–236). Basingstoke: Palgrave.
- Wall, D. (2001). Cybercrimes and the Internet. In Wall, D. (Ed.) *Crime and the Internet*. (pp. 1–17). New York: Routledge.
- Wall, D. (2007). *Cybercrime: The transformation of crime in the information age* (Vol. 4). Cambridge: Polity.
- Wasik, M. (1991). *Crime and the Computer*. Oxford, England: Clarendon Press.
- Welch, M. (1996). Critical criminology, social justice, and an alternative view of incarceration. *Critical Criminology*, 7(2), 43–58.
- Wellman, B. (1992). Which ties provide what kinds of support? *Advances in Group Processes*, 9, 207–235.
- Westlake, B. G. & Bouchard, M. (2016). Liking and hyperlinking: Community detection in online child sexual exploitation networks. *Social Science Research*, 59 (September), 23–36.
- Wilhelm, A. G. (2000). *Democracy in the digital age: Challenges to political life in cyberspace*. New York: Routledge.
- Williams, M. L., Edwards, A., Housley, W., Burnap, P., Rana, O., Avis, N., . . . Sloan, L. (2013). Policing cyber-neighbourhoods: tension monitoring and social media networks. *Policing and Society: An International Journal of Research and Policy*, 23(4), 461–481.
- Williams, M. R. (1997). *A History of Computing Technology*. Los Alamitos, CA: IEEE Computer Society Press.
- Wood, M. A. (2016). ‘I Just Wanna See Someone Get Knocked the Fuck Out’: Spectating affray on Facebook fight pages. *Crime, Media, Culture*, 14(1), 23–40.
- Wood, M. A. (2017). Antisocial media and algorithmic deviancy amplification: Analysing the id of Facebook’s technological unconscious. *Theoretical Criminology*, 21(2), 168–185.

- Yar, M. (2005). The novelty of 'Cybercrime': An assessment in light of routine activity theory. *European Journal of Criminology*, 2(4), 407–427.
- Yar, M. (2012a). E-Crime 2.0: The Criminological landscape of new social media. *Information & Communications Technology Law*, 21(3), 207–219.
- Yar, M. (2012b). Crime, media and the will-to-representation: Reconsidering relationships in the new media age. *Crime, Media, Culture*, 8(3), 245–260.
- Yar, M. (2012c). Critical criminology, critical theory and Social Harm. In S. Hall & S. Winslow (Eds.), *New directions in criminological theory* (pp. 52–65). London: Routledge.
- Yar, M. (2013). *Cybercrime and society* (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- Yip, M., Webber, C., & Shadbolt, N. (2013). Trust among cybercriminals? Carding forums, uncertainty and implications for policing. *Policing and Society*, 23(4), 516–539.
- Young, A. (2012). I. Visualising law in the digital age: Arrested by the image. *New York Law School Review*, 57(1), 77–205.
- Young, A. (2014). From object to encounter: Aesthetic politics and visual criminology. *Theoretical Criminology*, 18(2), 159–175.