jJustice-sSystem mMonitoring tTechnologies and vVictim wWelfare

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Summary

The evolution of criminal justice technologies is inextricably linked to the emergence

of new modes of electronic and digital governance that have become essential

components of a surveillance and crime control culture that continually seeksing out

novel responses to actual and perceived threats. The slow emergence of these

technologies in the second part of the twentie20th century was often theorized through

a discourse of order and control that has subsequently evolved in the ~~twenty-fir~~21st century to emphasize the protective potential of technologies ~~which are~~ oriented towards the interests of victims. The potential of criminal justice technologies to improve public safety and address issues of repeat victimization has now been subjected to significant scrutiny from scholars across the globe. While it would be conceptually inaccurate to split offenders and victims into two discrete groups, there has been an increase in analytical focus upon the intersections between victims of crime and technology within the context of criminal justice processes that had traditionally been oriented towards offenders. A more sophisticated understanding of the psychological and behavioral potential of criminal justice technologies has

emerged that has permanently adjusted the landscape of crime and disorder management and has had a transformative impact upon the relationship between victims, technology, and criminal justice. Yet, at the same time, the integration of digital technologies into the crime control and criminal justice infrastructure still is at an early stage in its evolution, with future trends and patterns uncertain.

Introduction

The potential of criminal justice technologies to improve public safety and address issues of repeat victimization has been subject to increasing scrutiny from scholars across the globe. The increasingly psychological terrain of crime and disorder management has already had a transformative impact upon the relationship between victims, technology, and criminal justice, yet, at the same time, the integration of digital technologies into systems of criminal justice still feels that it is at an early stage in its evolution. The first wave of criminal justice technologies expanded surveillance potential through developments such as closed circuit television (CCTV), electronic offender monitoring, and biometrics, and flourished in open commercial

crime control markets that offered crime prevention promises ~~that~~ appeal~~ed~~ing to the ontologically insecure social imagination. The lens through which these technologies are understood has slowly expanded beyond an initial focus upon surveillance and the regulation of movement and behavior ~~towards~~toward a more nuanced and sophisticated integration into new criminal justice programs that support victims of crimes in a variety of creative ways.

The expansion of digital surveillance technologies for the purposes of law enforcement and crime prevention has been well documented, but much less attention has been applied to the proliferation of victim-oriented technologies ~~which~~that utilize ~~twenty-fir~~21st- century information and communication technological infrastructures

to address repeat victimization (Paterson, 2015). This article provides an overview of this literature and the ways in which criminal justice technologies have influenced the evolution of novel and disparate commercial—public hybrid forms of protective governance for victims of crime. The article identifies three phases of development to help identify both change and continuities in the relationship between technology, victimization, and penal practice, beforeand then concludinges with an assessment of the value of victimological perspectives in re-imagining the future role of technology in global criminal control systems.

Victim-Oriented Criminal Justice Technologies

The evolution of criminal justice technologies is inextricably linked to the emergence of new modes of electronic and digital governance that have become essential components of a surveillance and crime control culture ~~that~~which continually seeks out novel responses to actual and perceived threats. The varied social, cultural, and political expectations of technologies have lea~~d~~ to the emergence of a diversity of technologies for a myriad of purposes. This article provides a summary of these developments, with a specific emphasis upon technologies ~~which are~~ oriented ~~towards~~toward the interests of victims. While it would be conceptually inaccurate to split offenders and victims into two discrete groups, the main point here is that the

following discussion ~~that follows~~ is focused upon the intersections between victims and technology within the context of criminal justice.

Academic and practitioner commentaries on technological innovations have often been understood in the context of penal developments rather than the radical changes produced by new forms of electronic and digital connectivity and their impact upon the shape of crime and its control. Ever since technological innovations emerged out of the defense sector and became commonplace in criminal justice, the locus of criminological attention has focused upon control and regulation, and until the ~~l~~past decade, criminal justice policy has retained much of this offender-oriented perspective. Yet, innovations in digital justice have slowly extended the conceptual prism in which

criminal justice technologies are situated to include support for, and protection of, victims and witnesses of crime.

Evidence of this victimological turn is evident across diverse jurisdictions (Erez and& Ibarra, 2007; Ferreira et al., 2012; Paterson and& Clamp, 2015; Rosell, 2011) and has been facilitated by the rise of victim voices in international policy debates as well as the continued integration of digital technology into the day-to-day lives of individuals and institutions. Discussions about innovations in criminal justice technologies cannot be separated from their historical emergence out offrom international private security markets through commercial providers, local and national authorities, and criminal justice practitioners who shape the use of these technologies.

Each nation's criminal justice technologies, and their role in supporting victims of crime, is henceforth uniquely aligned to the social, political, legal, commercial, and cultural expectations of both emerging technologies and existing cultures of crime control.

The initial experience of English-speaking Western democracies involved in the development of criminal justice technologies was of manufacturers and suppliers leading the initial formation of new technical systems in alliance with often naïve and occasionally corrupt political and criminal justice stakeholders (Lilly & Knepper, 1992; Paterson, 2019). As these early technological developments were driven by market supply rather than criminal justice demand, this process sometimes resulted in

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an absence of clarity about the purpose and effectiveness of technologies that were being implemented through messy policy implementation processes. A useful example of this is the expansion of CCTV systems during the 1990s based upon assumed crime prevention functions that turned out to have little supportive evidence (Coleman and& Sim, 2000; Webster, 2009).

During the same historical period, and influenced by two decades worth of feminist and emerging victimological scholarship, policy trajectories across criminal justice systems started to raise the profile of victims' interests throughout the criminal justice process, and this led to the development of policies that emphasized the psychological and democratic benefits of situating victims at the heart of any criminal justice

response (Ibarra ~~and~~& Erez, 2005; Taylor, 2012). Recognition that repeat victims generate disproportionate demands on justice organizations led to increasingly creative innovations in technology as a mechanism for crime prevention that would generate improved quality and efficiency in delivery of services to victims of crime (Farrall, 2001; Stanko, 2008). Situating repeat victimization at the heart of the crime prevention function meant available intelligence and data could be used to inform everything from proactive policing strategies to multi-agency co-ordination via shared databases and state protective sanctions.

First-generation criminal justice technologies had initially emerged out of a post-Cold War context where existing military technologies that had been used for the

purpose of population control in foreign jurisdictions were re-purposed ~~towards~~toward

domestic citizens who were considered to present a plethora of risks to themselves and

others. Early criminal justice technologies attempted to structure the movement of

offenders across time and space via enhanced surveillance, environmental

manipulation, and restrictions on movement. The many and varied interpretations of

the purpose of new technologies reflected what was an experimental phase in private

security and defense transitions to the criminal justice sphere.

Critical and conflict-framed perspectives questioned the motives of the state in

utilizing military technologies against its citizens, whereas those who adopted a

consensus perspective saw new technologies as vehicles for more efficient and

effective social control in rapidly changing societies. Attempts to move critical discourse forward were often hampered by the multiplicity of competing perspectives from stakeholders in the political, policy-making, and commercial arenas. Criminal justice voices were initially quiet with regard to discussions about the positive benefits of victim-oriented technologies, absent due to the dominance of rational choice-based offender-oriented perspectives of technological advocates and the Orwellian concerns of critics. Early attempts to imagine how criminal justice technologies could be utilized in sectors that were dominated by street-level, face-to-face contact were thus perversely influenced by both technological dystopianism and fetishism. These

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technologically deterministic perspectives have now slowly been displaced by a more

nuanced consideration of the role of new technologies in the field of criminal justice.

Nellis (2009:, p. 59) situates analysis of criminal justice technologies within the

context of neoliberal developments in e-governance that encourages digital and

distanced monitoring of risky populations:

"Contemporary computerized control technologies can structure and

modulate a person's mobility in space and time by micro-managing external

environmental pressures——openings here, barriers there, inclusion now,

exclusion later——rather than seeking to change their personality (alter their

way of thinking). Changing thought——the traditional intention of discipline

    —becomes less vital if the state can regulate sufficiently well in other ways

    —co-opting and customizing the emergent telecommunications

infrastructure."

This Deleuzean (1992) conceptualization of surveillance technologies puts an increased focus on the agency of individuals and their engagement with a digitally-framed system of rules and regulations. Herewith, the technology should be understood as a socio-technical practice that revolves around the locatability of an offender or potential victim. Thus, the technology can simultaneously function as a technique of urban security in some contexts or as an add-on to a community sentence in others. This analytical framework highlights the importance of social actors in

determining the design and implementation of new criminal justice programs (McCahill and& Finn, 2013). Interpreting developments in new technologies as new modes of e-governance and regulatory control also draws explicit links with policing theories and the complex of complementary, targeted strategies of governance of populations that on a range of indicators have been deemed to represent high levels of collective risk (Paterson, 2008).

Thus, from a conflict perspective, the broader purpose of the proliferation of criminal justice technologies, understood with the context of evolving strategies of e-governance, is to generate an "intensification in the militaristic capabilities that state servants have at their disposal and the range of practices initiated towardstowards the

policing of social boundaries" (Coleman & Sim, 2000, p. 634). In opposition to this, consensus perspectives highlight the potential for surveillance technologies to address public anxieties about crime via the construction of virtual and imagined boundaries of inclusion and exclusion (Cheliotis, 2013; Lyon, 2007; Young, 2007). This latter perspective has been strengthened since the emergence of Web 2.0, social media, and mobile technologies have made first-generation criminal justice technologies appear inflexible, unimaginative, and immobile.

Even more importantly, the experience of being subject to surveillance has become a normal aspect of everyday life, and Western interpretations of the role of surveillance in society have subsequently progressed from clunky Orwellian and

Panoptic metaphors to the integration of a more emancipatory and politically libertarian technological discourse (McGrath, 2004). New technologies thus emerge, at the macro level, ~~out of~~ from the interface between societies and technologies, but policy and practice forms, at the meso and micro levels, through the interactions between actors and networks (Phillips, 2017). The interplay of stakeholder networks and power dependencies is thus critical to the shape of the markets, policy, and practice that emerge. Having articulated the key concepts for analysis in this article, the following section provides some comparative and historical context to debates about the relationship between victims of crime, technology, and criminal justice.

Comparative Perspectives on Victims, Technology, and Criminal Justice

A comparative study of the emergence of criminal justice technologies generates meaningful findings due to similarities in experiences of the development of new electronic and digital systems as well as cultural differences generated by distinctions in political structures, socio-economic status, state responses to crime and disorder, plus experiences of crime and the local impact of penal globalization. Penal globalization refers to the sharing of ideas and practices about criminal justice across international jurisdictions with the objective of drawing lessons from mutual yet differentiated experience of crime problems and responses. For example, global cities are increasingly characterized by remote sensing frameworks, wireless technologies,

and ubiquitous computing, yet they utilize these systems in diverse ways for the purposes of justice and security.

Academic discussions about criminal justice technologies have largely been framed by discussions about penal practice, but there is an increased recognition that this criminal justice framing remains too narrow to capture the links between the political economy of new technology development and the dynamic perceived and actual threat to individual and/or collective security (Guzik & Marx, 2019; Paterson, 2015; Guzik and Marx, 2019). The disproportionate emphasis placed on penal theorization could thus be seen to miss the key point that these technologies emerge out offrom an electronic then digital infrastructure that were both established for non-penal purposes.

This is evidenced through analysis of both the U.S. corrections—commercial complex and the EU security—industrial complex which define economic growth and expansion as stated goals in isolation from penal purposes. An alternative approach—interpreting developments in criminal justice technologies as new modes of e-governance and regulatory control—opens up the possibility of understanding the evolution of electronic monitoring (EM) within a complex of targeted strategies of population governance rather than as an isolated strand of criminal justice policy.

Extracting technology from crime control discourse releases the potential to utilize everyday technology within innovative policy and programs. A re-conceptualization of criminal justice technologies has taken place during the historical shift from

aesthetically crude and obtrusive CCTV to user-friendly technologies (increasingly built into mobile devices) that hasd limited earlier reductive and punitive offender-oriented discourse about surveillance and restriction. Criminal justice technologies are component parts of a surveillance and crime control culture and industry that has evolved at an increasingly rapid rate since the advent of the digital economy and its integration into responses to global harms and threats (Aas, 2006).

Initial analysis of the shape and contours of private security markets was situated within the context of late twentie20th-century analyses of globalization where the influence of the corrections-commercial complex in the United States and the post-cCold wWar pursuit of new markets for military surveillance technologies led to

technology and policy transfer to Western Europe and the slow diffusion of experimentation with technologies across nation--states (Lilly and & Knepper, 1992; Paterson, 2015). Commercial crime control is a global business and the emergence of systems of "technocorrections" led to the establishment of penal, security, and surveillance industries across the globe. The dual drivers of sub-contracting out previously state-run services and expanding growth in new modes of digital surveillance propelled this commercial growth and continues to establish new commercial crime control markets, particularly in contexts with heightened concerns about mobility across borders and the threat of global organized crime and terrorism.

To illustrate this point, the European Union's security and technology research program sought, from its establishment in 2007, to generate growth in the security industry as part of the EU's third pillar responsibilities for Justice and Home Affairs and second pillar of security and external defense (European Commission, 2004, p. 7). The research program was designed, developed, and delivered in partnership with a number of defense and IT contractors, thus permitting transnational corporate interests to proactively shape EU security policy and the multitude of databases that it generated such as the Schengen Information System, the European Criminal Records System, and European Travel Information.

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Developments in private security and defense industry technologies have conflated with criminal justice to become integral components of the surveillance assemblages (Haggerty & Ericson, 2000) of each nation-state and the wider European area. These macro policy shifts have led to concerns about commercial and corporate influence over EU and nation-state policy-making as well as concerns about the right to privacy and personal data protection in a context where the interoperability of these systems is a stated aim (Alegre et al., 2017).

Yet, fears of unconstrained penal populism driving forward new technologies of control have proven to be exaggerated, and this has led to a dialectical relationship of global convergence alongside local divergence (Snacken & Dumortier, 2012). The

crime control technological marketplace is therefore characterized by as much

localized divergence in policy and practice as convergence in the use of technology.

Global drivers are visible through the role played by commerce in the development of

crime control technologies, the global exchange of knowledge about policy

innovations, and the structural influence of international conventions, treaties, and

courts over domestic actors. Yet, the role of each state and its social, cultural, and

political norms and values remains significant and, in conjunction with global

influences, shapes responses to crime at the local level (Karstedt, 2015).

Criminal justice practice is now firmly situated in an information age, but

understandings of the potential and capacity of digital technologies remains uneven

across criminal justice institutions and different nation-states (Castells, 1996; Ericson & Haggerty, 1997). Nellis (2016) describes the role and function of criminal justice technologies within this complex of digital innovation as "coerced connectivity" whereby everyday connective technologies are given punitive and rehabilitative purposes (sometimes simultaneously) by courts, police, probation, prisons, and other agencies. A notable characteristic in the design of new technology responses is the tension between the over-arching socio-cultural context of capitalist political economy and local demands for democratic governance and security. For example, there are many empirical examples that illustrate the limited effectiveness of surveillance technologies in managing problems of crime and disorder (Coleman & Sim, 2000;

Gill & Spriggs, 2005; Mair, 2005; Gill and Spriggs, 2005; McCahill and& Finn, 2013),

yet these technologies continue to receive sustained investment and point to the

predominance of capitalist political economy in shaping the contemporary architecture

of surveillance-based crime control. This policy trajectory can marginalize demands

for security that emerge from those who are most vulnerable or subject to re-

victimization and lead to policy developments that reflect the interests of political,

policy, and commercial sites of power.

The preponderance of offender-focused thinking amongst policy elites also has the

potential to marginalize the potential benefits of technologies in the enhancement of

citizen security, particularly where there is a likelihood of repeat victimization and an

escalation of violence. The dominance of rational choice and routine activity perspectives on population management among policy elites, coupled with the top-down administration of criminal justice, can generate ruptures between theoretical thinking, conceptual design, and policy implementation. Yet, technological program development is rarely uniform, with commercial organizations promoting neoliberal technologies of control whose aims and purpose metamorphose within each nation-state's social, political, and economic context and emphasize the potential for innovation. The following sections provide an illustration of how the relationship between technology and criminal justice has evolved over the past half century (since the 1980s), with the slow emergence of victim-oriented technologies being an indirect

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consequence of multiple, intersecting political, policy, and technological developments. The first section uses the development of electronic offender monitoring as an illustration of how the private security industry influenced the contours and shape of the first generation of criminal justice technologies and their relationship with victims of crime.

Technology and Criminal Justice 1.0

The author's experiences of working in the private security industry for an electronic offender monitoring service provider during the late 1990s and early 2000s had a significant influence over his interpretation of the role of the private security industry

in shaping the relationship between victims, technology, and criminal justice. While the author was still working in this field, Bob Lilly had already recognized that the electronic monitoring (EM) of offenders has been imagined, as a criminal justice innovation, by those outside of the penal field (Lilly & Deflem, 1996; Lilly and& Knepper, 1992; Lilly and Deflem, 1996). Electronic monitoring (EM) technologies emerged on to the community corrections landscape in the United States and United Kingdom in the late 1980s via the imaginations of Judge Jack Love in New Mexico and journalist and activist Tom Stacey in London. The first generation of EM programs sought to restrict movement, often through curfews, to domestic space at specified points of time, normally overnight. The electronic monitoringEM technology

was delivered with radio frequency (RF) technologies that would report absences from the agreed domestic space to a monitoring center, which would initiate an investigative response. Early ~~electronic monitoring~~ EM technologies emerged at the end of the Cold War as the military technology industry sought out new markets for its products. Thus, the emergence of EM technologies is best understood as part of a much larger process of technology transfer, ~~that~~which included CCTV and biometric systems, and an intensification of explicit electronic population governance (Paterson, 2007).

First-generation EM flourished in the enforcement-focused context of the United States, where it was initially perceived to deliver a technically improved mechanism for the supervision of offenders, with the underpinning assumption being that this

enhanced supervision would improve supervision in the context of "victimless" crime or those committed by non-violent offenders. In England and Wales, EM met with resistance from the Probation Service due to its privatized delivery model and its perceived de-humanizing effects. This resistance softened during the 1990s, with prominent probation figures advocating more careful analysis of the potential of the technology (Nellis, 1991), and EM use slowly grew, although without any consensus about its penal objectives and little explicit consideration of the impact upon victims of crime. First-generation EM offered the potential of perpetual panoptic surveillance to regulate movement and behavior through virtual monitoring. This interpretation of EM as a new mode of e-governance and regulatory control situates the technology within a

complex of targeted strategies of population governance that can be used for surveillant, correctional, and a range of policing purposes (Brodeur, 2010; Paterson, 2016).

As previous sections have noted, purely penal analytical frameworks miss the key point that developments in the latter part of the ~~twentie~~20th century emerged ~~out of~~ from an analogue context whereas more recent discussions need to reflect the normalization of a digital infrastructure ~~that~~which has been established for non-penal purposes (Lilly ~~and~~& Deflem, 1996; Paterson, 2015). EM, like other surveillance technologies, needs to be understood as a socio-technical practice and not just as a technology (Lyon, 2001). This insight becomes even more important in the context of

growing systems of digital governance as it places the responsibility for shaping the use of technologies with those working in the professions and also emphasizes the active role of the targets of surveillance (Paterson, 2007).

The first wave of criminal justice technologies, with their comparatively primitive infrastructure, can be understood as a sometimes naïve commercial and governmental attempts to nudge and subtly influence movement and behavior to enhance rehabilitative and punitive aspects of community supervision within fiscally constrained environments. From the perspectives of victims of crime, first-generation criminal justice technological developments lacked an appreciation of the psychological potential of the technology from the perspective of offenders, victims,

and witnesses and their ability to address social anxieties and fear of crime (Webster, 2009). The potential for surveillance technologies to address public anxieties about crime and to take a victim-oriented perspective lay within a new set of policy developments that would address virtual and imagined boundaries, demarcations of inclusion and exclusion, and a greater engagement with the social and psychological imagination of technology and security (Cheliotis, 2013; Garland, 2002; Lyon, 2007; Young, 2007; Cheliotis, 2013). These next-generation developments in e-governance and crime control technologies simultaneously enhanced regulation and appealed to wider public insecurities about an absence of social controls whilstwhile also actively engaging victims and offenders in the implementation of these programs (Paterson,

2015). The next section takes the discussion into the digital age and explores the evolution of second-generation criminal justice technologies ~~which~~that developed in a context where everyday surveillance had become the norm rather than the exception.

Digital Technology, Victims, and Criminal Justice

The failure of first-generation EM to capture extensive public support was due, at least in part, to a perception that the surveillance was insufficiently intrusive to meet the demands of its advocates. The emergence of social media and new web and mobile technologies made first-generation criminal justice technologies appear dated. Similarly, as the experience of being subject to surveillance by technology became

increasingly commonplace in the 2000s, the credibility of dystopian critiques waned and were slowly replaced by a more emancipatory technological discourse that celebrated the potential of surveillance and connectivity to change the way social interaction functioned (McGrath, 2004). This normalization of a technological presence coincided with a new set of technologies that had the potential to incorporate both offender and victim needs.

One key signifier in this evolution of criminal justice technological discourses and practice is the consolidation of GPS technology into both day-to-day life and the mechanics of crime control as part of the evolution of digitized governance across the globe. European policy-makers had been influenced by evidence from the United

States regarding reductions in recorded offending for sexual offenders subject to GPS monitoring and hypotheses that similar approaches could have potential for use with violent offenders (Gies et al., 2012; Padget et al., 2006). In 2011, the German Federal Government introduced a nationwide program of GPS monitoring for high-risk offenders on release from prison to replace resource-intensive and human-oriented police surveillance with technological modes of control (Havercamp, 2016, 2019). In Germany, this development was an unanticipated by-product of a judgment by the European Court of Human Rights concerning the retroactive application of unlimited preventive detention to cases from before 1998. The U.S. findings also influenced developments in England and Wales with the emergence of police-led monitoring of

high-risk and persistent offenders and ambitious (although ultimately not implemented) proposals to upgrade and upscale the community corrections infrastructure to monitor 70,000 offenders with GPS technologies (Geoghegan, 2012).

Europe experienced slow and consistent growth in the scale of database development and GPS technologies for a variety of penal purposes, with different patterns in rates of imprisonment, prison conditions, and sentencing policy producing both convergence and divergence in penal policy that aligned with each country's unique historical trajectory (Karstedt, 2015, p. 379). Sweden and its influence upon its neighbors, Denmark and Norway, led to a prominent role regarding surveillance technologies in Scandinavia as part of a technologization of state-based probation

practice to help regulate the use of imprisonment. These technological developments allowed the Swedish prison authorities to close prisons as part of an emphasis upon enhanced community-based rehabilitation. Similarly, in the Netherlands, the goal of low imprisonment rates (63 per 100,000 in 2018) was enabled through the targeting of specific offender groups for additional technological supervision, with a prominent emphasis upon rehabilitation, the facilitation of prison leave, and post-release re-integration (Boone et al., 2016). Collectively, these different European policy trajectories illustrate how the macro level transfer of technology and ideas with the purpose of automated ordering and digital governance developed into a pluralistic

community of practice across Europe that normalized the role of technology in criminal justice structures, albeit with varying purposes.

Commercial input into the development of GPS as a crime control tool in Europe has been limited to the technological domain, unlike the first-generation models developed in England, and Wales, and the United States, thatwhich involved the private sector in all areas of the delivery system. This commercially-driven approach had led to fears about uncontrolled technological expansion as well as highlighting challenges in integrating public and commercial criminal justice structures. (CJJI, 2008; Mair and& Lilly, 2013). At this point, the language of privatization became less prominent and the emergence of new public-commercial models of delivery became

regular components of the criminal justice landscape (Paterson, 2019). The prominent role of the market within criminal justice indicated a longer-term shift ~~towards~~toward strategies of digital management and population control. Within this context, emphasis is placed upon the importance of reducing state costs and encouraging other agencies that operate at a distance from central government to take a more direct role in crime control and the provision of security.

Analysis of the European context provides an illustration of diversity in the use of GPS technologies developed in different policy contexts, with involvement from prison, police, social work, and probation (Nellis, 2003). Analysis of the processes of policy development and implementation provides illustrations of the dynamic

influence of socio-cultural and political factors at the local level. The proliferation of diverse forms of technologically driven programs present empirical case studies of regulatory capitalism (Braithwaite, 2008), which include the difficulties faced by many of the U.S. entrepreneurs who brought the first generation of technology to Europe and the plurality of interpretations of the role of public-commercial hybrid policy development (Paterson, 2019).

These shifts in modes of punishment, policing, and e-governance have been accompanied by new forms of regulation that oversee the public-commercial hybrid models which have emerged. Thus, while one part of the EU Justice and Home Affairs sector drives growth in the industry, another side seeks to regulate the new

technologies of crime control ~~that~~ the industry produces. There is a clear imprint on how technologies should be used from the European regulatory system, whether that is directly through the Council of Europe's recommendations on good practice, which provide a human rights perspective on ethical practice, or, indirectly, through judgements made in national and international courts.

These technological policy trajectories increasingly emphasize victims' interests and the emotional and psychological benefits of victim-oriented policies. The technological potential of mobile and real-time location monitoring provided by second-generation technologies enables much greater correctional and policing potential (albeit with all of the potentially negative connotations this might bring ~~too~~as

well). The enhanced policing potential includes the provision of reassurance and support for those under threat of repeat victimization. Erez and Ibarra's (2007) evaluation of bilateral (offender and victim) radio frequency (RF) systems in the United States identified the positive protective influence of technological interventions when they were supported by criminal justice professionals. This early shift to victim-centered surveillance continued with the arrival of GPS-based programs (Erez et al., 2012) that offered further protective potential for victims of crime. An essential component of this positive influence was criminal justice personnel engaging directly with victims, often in response to an alert from the GPS support system, and visibly recognizing their right to protection. Thus, the technology constructs a spatial structure

within which professionals build positive relationships with vulnerable people to support recovery and to avoid the common but damaging impact of victims' perceiving that they have been marginalized from criminal justice processes.

In this context, the threat of regulatory controls, imbibed with sovereign legal authority, is often enough to lead to changes in individual behavior (Bittner, 1970, pp. 18, 39–41). Thus, GPS technologies have the potential to appeal to the offender's, victim's, or witnesses' understanding of psychologically imagined coercive force and have the potential to reconstruct social boundaries. Henceforth, real-time victim-oriented technological programs have the potential to support the re-configuration of an individual's interpretation and appreciation of social space, with the opportunity to

rebuild confidence and resilience in the absence of physical threat. Alongside this opportunity, criminal justice professionals undertake a key symbolic role in recognizing the threat to an individual and communicating zero tolerance messages about violence in the private sphere (Erez and& Ibarra, 2007:, p. 103; Taylor, 2012). When delivered appropriately, the program offers a form of personalized policing which allows other community-based professionals to provide support and to recognize the active role of the surveilled individual.

From a criminological perspective, this process involves the critical recognition that domestically located violence seriously impacts the lives of everyone in the place where the violence occurs and, furthermore, that this violence can become increasingly

severe (Stanko, 2008). Recognition of the complexity of this challenge led to the development of collaborations and databases that detail patterns of contact (victimization and offending) via statutory and non-governmental organization (NGO) sectors to better understand the needs of vulnerable people and how to deploy resources in response to this. Despite enhanced data sharing and aspirations for greater interoperability of data, there remain concerns ~~with~~regarding how th~~ie~~se data ~~is~~are utilized by justice agencies. Previously lauded response tools such as ~~t~~the domestic abuse, stalking, and honor-based violence (DASH) risk assessment in the ~~UK~~ United Kingdom have had limited impact in terms of improving performance (Turner et al.,

2019), and concerns remain about often overstated assumptions that data-driven justice responses produce better or more just outcomes (Ferguson, 2017; Oswald, 2018).

Other technological and victimological development have increasingly focused on individualized conceptions of victim safety and evidence-based mechanisms for building resilience (Froment & Kaluszynski, 2007; Vanhaelemeesch & Vander Beeken, 2014). Paterson and Clamp's (2015) analysis of the use of a victim-oriented technology in Buenos Aires, Argentina identified spatial structures generated by the technology, police, and other criminal justice agencies which encouraged individuals to act as the active decision-maker who would report threats to safety via the technology. The Argentine program was imagined and developed by gender rights

groups in Buenos Aires and embedded a sense of local social capital, as the program was owned from the beginning by local state actors alongside statutory institutions. While locally driven programs generate their own challenges, local actors were able to impose their own imagined spatialities of risk and threat upon policy development via alliances with more powerful statutory institutions. As this section has noted, technology should not be interpreted through the lens of cost reductions if programs are to be successful. There is a need to invest in new technologies and the collaborations that surround them to support victims of crime. The article now moves on to address how policy generated with an embedded victimological perspective by the local state can flourish.

Victim-Oriented Technologies in Criminal Justice

A victim-welfare approach mobilizes the protective qualities of technologies through the recognition of the value of relational space for individuals alongside the pre-existing inclusionary and exclusionary focus upon regulating physical space (Massey, 2005). Programs that emerge ~~out of~~from demands from communities where ~~the~~ associated crime and security problems are situated have the potential to demonstrate a more nuanced appreciation of relational space, which emphasizes the importance of individuals and community linkages (Amin, 2004). As the earlier GPS examples demonstrated, the imagined potential of surveillance can act as a mode of personali~~s~~zed policing and assist "victim re-entry" into society by providing a safe

structure for individuals to build their confidence in public space (Erez ~~and~~& Ibarra, 2007).

While much of the academic literature that has been introduced so far has focused upon wealthy ~~w~~Western democracies, there are further opportunities to draw comparisons with other parts of the globe. For example, the criminal justice technologies that have been introduced in this article have generated a global footprint that extends into Latin America and South Asia, which ~~will be~~are the focus of this section. In Argentina, technological policy development had first~~ly~~ been driven through a correctional management discourse (Snelgrove, 2010); yet~~-~~, a victim-oriented program emerged ~~out of~~from more localized concerns ~~amongst~~among local

charities and advocacy groups ~~about~~regarding violence against women (Paterson ~~and~~& Clamp, 2015). This drive from below encouraged Buenos Aires government officials and a newly established police organization to experiment with a collaborative approach to technological development, with citizens and local organizations as co-producers of victim-oriented policy.

The Buenos Aires Metropolitan Police was established in 2010 with a remit to address violent crime amidst an absence of public confidence in a federal policing structure that remained tainted by historical military rule, violence, and persistent concerns about corruption. Anxiety about high levels of violence around the city facilitated the development of a new communications infrastructure for the Buenos

Aires Ppolice and the opportunity to develop a victim-oriented police response in partnership with other agencies. In this case study, communications center personnel monitored panic button calls from individuals considered to be at high risk of violence. This victim-oriented program was driven by NGOs (Sibilla, 2012; Solano, 2012; Sibilla, 2012) and, like previous programs mentioned in this article, created the space for innovation with technology and the development of a policing response that involved individuals who self-selected for support at court. In this example, the individual is not passively responding to the process-oriented goals of professionals and the technology, but is the active decision-maker in triggering a police response and liaising with individuals and agencies about the nature of the required response.

The innovative technological response simultaneously delivered resource savings for the police and addressed the threat of repeat victimization by situating the police as first responders for vulnerable people, using pre-emptive alerts that link vulnerable people to an appropriate response unit and a support worker. The victim-welfare approach thus embraces the technology as a core component of collaborative victim protection.

The program recognizes limits to state resources as well as community concerns related to vulnerable people and the threat of repeat victimization. This case study needs to be understood in its unique context of historically troubled police—community relations, mistrust of the federal government, and the associated

importance of the local state in facilitating smarter use of technological resources (Eaton, 2008). Thus, while there is evidence of congruence with the earlier European developments in new forms of criminal justice technology, the formulation of policy ~~amongst~~among local networks of governance in Argentina represents yet another model of development for scholars to use in comparative study.

These developments represent a re-conceptualization of the use of the technology beyond the neoliberal prism of rational choice theories and offender-oriented thinking that influenced first-generation thinking about criminal justice technology. The emphasis placed ~~up~~on locatability, mobility, and real-time monitoring has the potential to act as a source of additional reassurance and support for those under threat of repeat

victimization. Recognition of the role of technology in facilitating care and support is long overdue, as discussions about corrections, policing, and surveillance have a historical tendency to focus on repressive control functions rather than on this potential for care and support (Moore, 2011). The ability of surveillance to dismantle and disaggregate personal identity and then to subsequently reconstruct a virtual identity can have positive and negative implications, which means that an awareness of structures of patriarchal oppression need to be embedded into programs that involve repeat victims of violence (Walklate, 2018).

The surveillance capacity generated by new criminal justice technologies, and their promises of technical managerial solutions to crime problems, can divert analysis

away from the importance of human agency as well as local politics, ideologies, and culture, which direct ~~of~~ policy and practice. While analysis of the early emergence of criminal justice technologies emphasized technologically deterministic and structurally-oriented perspectives, more recent analysis emphasizes individual agency, active user engagement, and the integration of technology into other forms of individual and collective citizen security both inside and outside of traditional crime control domains.

Similar technologies have been used in India, including in Delhi and ~~in~~ Punjab (Mason et al., 2015; Paterson ~~and~~& Williams, 2018), as a response to concerns about citizen security, ~~that were~~which was mobilized by NGOs and community action

groups to encourage innovation and change. While the Buenos Aries example emerged as a municipal response to the threat of victimization, India received global attention with regards to high-profile murder and sexual violence cases, not least of which was the 2012 Delhi bus rape, and the public protests from women's groups that followed. These concerns about gender violence were exacerbated in some regions of the country where the police were not deemed to be providing a professional response to offeneses involving women and girls and where the technology could stretch the reach of policing into areas where police responses would often be received with mistrust.

In these instances from the Global South, policy development has been driven from below via community action groups and public concern, which emphasizes victims'

interests and the emotional and psychological benefits of victim-oriented policy (Ferreira, 2012; Ibarra and& Erez, 2005; Rosell, 2011; Ferreira, 2012). Analysis of the lived experience of those subject to technological support can challenges the offender-oriented assumptions and priorities of state, private, and third--sector officials and their tendency to focus upon victims' administrative needs—such as rights, voice, and satisfaction—to the detriment of experiential and actualized notions of victim safety and mechanisms for building resilience (Walklate, 2011). In the Buenos Aires case study, criminal justice agencies remain stakeholders, but the emphasis placed upon the individual as the active decision- maker (Christie, 2008) takes the concept of victim-oriented engagement a step further and delineates the program from previously

offender-oriented policy. The evolution of the panic button program objectives within women's groups in Buenos Aires emphasizes the importance of local social capital as a mechanism to conceptualize and build programs that continue to be owned by local state actors alongside statutory institutions. While the concept of the local state is not without its problems, bottom-up policy development encourages local communities to impose their imagined spatialities of crime and disorder upon policy development via alliances with more powerful institutions.

Discussion

The victim-oriented approach to technological developments in criminal justice harnesses the same ontological insecurity that drives growth in neoliberal crime control but mobilizes the public protection qualities of surveillance technologies at the individual level. The emphasis placed on individual well-being, positive social identity, and inter-personal relationships avoids disempowerment and emphasizes the role of the surveilled individual as an active social agent. In both theoretical and practical terms, this challenges early dystopian narratives about the development of surveillance technologies and situates discussion about technological developments in criminal justice within contemporary discourse about digital societies.

The academic literature on ontological insecurity (Garland, 2002; Young, 2007), which has dwelt most commonly on public fear, provides support for the imagined potential of surveillance, although there are substantive critiques of such a system, most notably from Marxist and feminist scholars, who point to ideological contradictions between victim support and law enforcement. For example, Dutch and American studies found that victims of domestic abuse often do not use panic buttons as they associate the technology with a potential criminal justice outcome for the perpetrator (Erez et al., 2012; Romkens, 2006; Erez et al., 2012). A further challenge lies within the tendency of state responses to patriarchal violence to further entrench structures of oppression. Victim-oriented technologies can structure activities within

the home, but this has often led to enhanced demands on other, most commonly female, family members (Nellis, 2009; Paterson, 2007; Vanhaelemeesch and& Vander Beken, 2014).

The ability of criminal justice technologies to enhance surveillance through the generation of detailed digital identities also has the inadvertent potential to lead to enhanced domestic surveillance. Harkin et al. (2019) provide several illustrative examples of how mobile phone spyware that was initially designed for the security industry has been adapted for domestic surveillance of inter-personal communications, social media, and the hacking of personal data, such as photos and videos, and then made available for widespread coercive use (see also Douglas et al., 2019). Benevolent

victim perspectives can be co-opted by those individuals subject to surveillance as well as ~~in~~by criminal justice agencies, with their traditional offender-oriented orientations. Individual and institutional co-option has been acknowledged for some time in critiques of technological developments where there is an instinctive cultural orientation ~~towards~~toward repressive control functions rather than an emphasis upon individual care and support (Moore, 2011). Engaging the appropriate local actors in policy development as voices for communities and victims can help avoid these unintentional policy outcomes and ensure that the role of technology is considered ~~to be~~ as a facilitator of new ways of working in penal contexts that have been influenced by radical changes in digital governance (Gable ~~and~~& Gable, 2016; Nellis, 2014).

Victim-oriented programs have already been criticized for extending coercive control via victim-oriented discourse that is bolted onto governmental concerns with the regulation of offender populations and which implicitly marginalizes practical emphases upon victim protection (Walklate, 2011). A disputed assumption of enhanced control, inevitably leading to enhanced societal protection, prevails despite decades of evidence challenging the theoretical assumptions that underpin such an approach (Cheliotis, 2013; Cohen, 1985; Cheliotis, 2013; Garland, 2002). The dominance of deterrence-based models of thinking is challenged by countless empirical case studies that highlight the limited effectiveness of surveillance technologies in directly addressing offending behavior (Brancale et al., 2018; Gill

and& Spriggs, 2005; Mair, 2005; McCahill and& Finn, 2013; Mair, 2005; Webster, 2009; Brancale et al., 2018). In opposition to top-down offender-focused logic, a victim-oriented lens emphasizes recognition of the protective factors generated by surveillance-based attempts to distribute psychologically imagined coercive force. Analysis of criminal justice technologies through the lens of global connectivity, where patterns of social interaction are captured via remote sensing frameworks, the proliferation of wireless technologies, and ubiquitous computing, extracts innovative programs from crime control discourse and situates these technological developments within the context of other commonplace networked technologies (Castells, 1996).

A re-conceptualization of criminal justice technologies as small and discrete wearables that are user-friendly and supportive technologies, little different ~~to~~from a phone or other mobile device~~s~~, permits a delineation of victim-oriented approaches from offender-oriented discourses concerned with regulation, monitoring, and restriction. Furthermore, utilizing interactive approaches to policy-making (Mayer et al., 2005), with the public, victims, and their support networks as active stakeholders involved in program design, enables a greater appreciation of the lived experience of those who perceive and interpret threats to their safety and addresses real and ontological security deficits. The potential of victim-oriented policing and community corrections programs lies within the uncertainty and ambiguity that exists in ~~our~~the

individual and collective interpretations of surveillance, which often leads to an amplification of its capacity (Paterson, 2007). Yet, there remains a threat that victim-oriented programs will be co-opted by institutional assumptions about regulation and control, that which stratify life opportunities according to class, economic status, gender, and ethnicity, and leave them to be used as symbolic social and cultural messages (Cheliotis, 2013; Sklansky, 2014).

Final SummaryConclusion

This article has outlineds how the evidence-base from offender-oriented technological programs demonstrates that, with an incomplete comprehension of the technology,

individuals amplify the surveillance potential of technologies. This psychological amplification generates further potential for victim-oriented technologies that remained beyond the understanding of first-generation technological innovators who utilized rational-choice-based frameworks as the theoretical underpinning for their work. CCTV provides an excellent example of a technology whose potential is based upon a mythologized crime prevention status that is popular with the public but unsupported by evidence (Webster, 2009). Harnessing this technological mythology within developments in e-governance presents new opportunities for criminal justice.

The governing instincts and dispositions of contemporary political actors tend to direct the surveillance gaze towardstoward expansionary e-governance strategies and

offender management which marginalizes victims and innovative approaches to citizen security. The consequent deficits in protection that are experienced by vulnerable populations leads to continued dissatisfaction with criminal justice processes, but this can be challenged by local actors and stakeholders. It was an understandable error to situate ~~our~~ the early understanding of technological development within the context of criminal justice rather than in an as yet unimagined future that is characterized by ubiquitous mobile technologies. There are new opportunities to re-consider how criminal justice practices and values align with ~~twenty-fir~~21st-century digital crime control and, perhaps, even to proactively shape future policy. It is appropriate to be concerned about the role of the private sector and the potentially de-humanizing

impact of technology ~~up~~on criminal justice, but these concerns cannot simply translate into positive and negative discourse about the wider digitization of government and society and their manifestations in criminal justice.

Analysis of the wider contours of social change confirms that technological developments in criminal justice are indicative of more entrenched shifts to digital government and governance that are used in advanced economies across the globe. There are multiple discourses within these developments. The early part of this article emphasize~~d~~s the importance of understanding new technologies as new socio-technical practice to reflect the importance of social actors in the design and implementation of surveillance-based programs. Utilizing interactive policy-making, where the public

areis actively engaged as stakeholders far ahead of delivery or implementation, enables

a conceptualization of programs that appreciates both the lived experience of victims

and addresses the security deficits that characterizeing so many other criminal justice

interventions.

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