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Towards a Planetary Urban Criminology

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Abstract

Urbanisation is the dominant global social process of the current century and criminology is an intrinsically urban discipline. However, criminology has become dominated by the analysis of subsets of areas within a subset of rather homogeneous cities of the Global North. As the discipline has evolved and refracted under the impetus of theoretical, methodological and data advance, it has lost much of its urban vitality, lacking critical self-awareness of its fundamental nature. We argue for a new, or renewed, approach to criminology that begins from the perspective of the city as an open system. We assess the consequences of a criminology that fails to take proper account of the city as a multiscalar open system. This is without doubt a considerable challenge, but the time is propitious; in the era of Big Data, with a rapidly expanding range of methodologies at its disposal, there exists the possibility of a revivified criminology that remains faithful to its roots. Our proffered approach opens the way to investigating crime through an urban prism for any city in the world – to a planetary urban criminology.

Introduction

We live in an urban age (Gleeson, 2012), a period where the urban "is in every sense comprehensive, decisive, and epochal" (Rickards, Gleeson, Boyle, & O'Callaghan, 2016, p. 1524). Urban scholars marvel at the sheer diversity of cities around the world, even as they strive to explain it (Storper & Scott, 2016). But the nature of the processes involved remains contested, generating calls for a corrective to conceptual rigidities imposed by an evident Anglo-American hegemony in the analysis of the city (Kong & Qian, 2019; Robinson, 2016; Robinson & Roy, 2016; Roy, 2016; Zhou, Lin & Zhang, 2019).[1] Some, as relationships between networks of cities, cities and their hinterlands, and cities within their host regions and countries morph and evolve, argue that the very idea of the city has outlived its usefulness in urban analysis and new conceptual frameworks are now required (Brenner & Schmid, 2015; Rickards, Gleeson, Boyle & O'Callaghan, 2016; Schmid et al., 2018). At the very least, it seems that pre-existing scale perspectives are in urgent need of refinement (Wu, Wilkes, Silver & Nicols Clark, 2018). This heady brew of accelerating, diversifying urbanisation, associated understandings, and contestations poses a number of fundamental criminological challenges that focus the ambition of this paper. Given the diversity of cities, given the commonality or otherwise of urban processes, should we expect different urban crime profiles to present in different places? Can we understand urban crime with a common criminological tool set? Where do criminological theories sit within, and how do they relate to, our understanding of the urban?

From the outset, the criminological project has been provoked by, and interpreted with reference to, the urban condition (Weisburd, Groff, & Yang, 2012); currently it hardly recognises, much less speaks to, urban dynamics. It is blind to the shifting nature and progress of urbanisation and dominated by empirical work on a fairly homogeneous type of North American and (to a much lesser degree) European city. This is deeply problematic, and criminology is in danger of becoming stultified if researchers only explore whether patterns in data so far uncovered are replicated across a narrow range of crime types and urban situations. There is a compelling need to pose some deeper questions: are existing theories of crime too time and place dependent? As globalisation shapes the nature of urban development and the process of urbanisation generates an ever-expanding range of urban outcomes, can we use these facts to generalise our understanding of crime and its causes? Can criminology develop frameworks that are demonstrably as applicable to the Global South as they are to the Global North?

This paper makes an initial case for a planetary urban criminology, a criminology that holds relevance to the diversity found within "planetary urbanism" (Wyly, 2015), and in doing so provides a template for reintegrating the what, where, and when with the who and why in criminological research (Bannister, O'Sullivan, & Bates, 2019). We begin our task in the next section with a brief overview of criminological theory that emphasises its specifically urban dimensions, and how these have become somewhat obscured over time. The case for reaffirming and enhancing an explicit urban lens on crime is then launched through an examination of three very different criminological problematics. Building on a number of recent contributions to criminology we then develop a framework for a crime-oriented model of an open urban system, using this framework to situate and further interpret a range of existing criminological theories.

This is an ambitious undertaking and we must, at the very outset, temper expectations. First, our framework is explicated pretty much exclusively using Global North criminological material, reflecting the predominance of current literature. Second, even within that stricture, formidable challenges remain to be addressed, not least that the definition of crime is culturally determined, and culture exhibits distinctive geographic expression. Moreover, systematic variation in data availability and quality further bedevil the comparison of like with like, with known North-South implications. Some might with justification push further, questioning the ontological meaning of "the city" in general, or

1 The same hegemony that is alleged to hold criminology itself in thrall (Carrington, Hogg, & Sozzo, 2016; Hogg, Scott, & Sozzo, 2017)

as it applies in different areas across the globe, and see reason in this to interpret spatial scales and associated timescales as both heterogeneous in nature and more specifically endogenous to location and type of crime. We acknowledge the legitimacy of these issues in what follows without aiming to resolve them. Our contention is that one must start the search for a more general criminology somewhere, and a framework that posits urban crime as complex outcomes of processes operating and interacting at various levels – some will be universal, some regional, some local – is the appropriate place to begin.

Disciplinary Conditionalities

The evolutionary pathways of criminological research have already been extensively reported and need little in the way of revisitation (Garland, 2002; Rock, 2002; Weisburd et al., 2012). But it is worth reflecting further on the extent to which criminology emerged from and confirmed the urban as primary context. It was Restoration Paris (1814–1830), experiencing explosive population growth, economic dislocation, and rising crime, the fear of *les misérables*, that provided the impetus for much of the work of Guerry (1833) and Quetelet (1984) (Beirne, 1987; Friendly, 2007). Significant also was the establishment of the first national system of crime reporting by the Ministry of Justice in France in 1825, and the commencement of annual statistical publications of these data in 1827. The use of such data served to illuminate and reinforce perceptions of the predominantly urban nature of crime (Friendly, 2007, p. 372). A few years later and across the Channel in England, the pioneering work of Henry Mayhew (1862) and Charles Booth (1889) on crime patterns and causes took the capital city of London as its specific focus of concern (Garland, 2002; Sampson, 2009).

The Chicago school of sociology, serving from the 1920s onwards as the cradle of mid-20th-century criminology, reflected a different, but again unmistakeably urban context. Wyly (2015, p. 2521), quoting Martindale (1958, p. 28), notes that the newly minted sociology department at Chicago would go on to become known as "Urbanism, Incorporated". The city of Chicago grew rapidly, doubling from little over 500,000 people in 1880 to 1.1 million in 1890, before doubling again to 2.2 million in 1910 and continuing to expand to 3.4 million by 1940. Rural to urban migration over this period met with mass movement of European peoples across the Atlantic and the Great Migration of African Americans from the South to create massive urban restructuring, volatility, and dynamism (Jones, 1992). Out of this roiling sea of human interaction came new perspectives on crime in cities in transition, culminating in theories of social disorganisation (Shaw & McKay, 1942).

Chicago remained the geographic locus of intellectual innovation in the 1960s as sociology gave ground to economics in the study of crime. The initial thrust of this "economic imperialism" (Ioannides & Nielsen, 2007), lacking both explicit spatial and time characteristics, involved applying rational choice and utility maximisation perspectives to crime (Becker, 1968). Becker's approach – that individuals compare the expected benefits of crime (determined by perceived reward, probability of detection, and severity of punishment) to the returns from legitimate activities in deciding what actions to take – ultimately spawned two major and more obviously urban-centric literatures. The first emphasised labour market circumstances as determinants of crime (Freeman, 1996, 1999); exploring this on an urban scale with attention to potential peer effects (Glaeser, Sacerdote & Scheinkman, 1996) has led economics towards a general consensus that "bad genes, bad homes, bad neighbourhoods, and bad incentives can all play a role in determining criminal behaviour" (Le Grand, Propper & Smith, 2008, p. 111).[2]

2 We do not explore the role of genetic factors in this paper, but it is worth noting here the still developing literature that links genetic factors to crime specifically within urban and intergenerational contexts. See, for example, Feigenbaum and Muller (2016) on lead exposure and violent crime in 20th-century American cities, and Sampson (2019) and Aizer and Currie (forthcoming) on the relationship between residential exposure to lead and juvenile delinquency.

The second literature tracing its aetiology to Becker interacted the logic of homo economicus with a rejection of a "person-focused" approach to crime. Here, disciplinary dissatisfaction, based on increasing acknowledgement of the intrinsic difficulty of predicting criminality, or of moderating it through correctional interventions (Cullen & Gendreau, 2001), gave impetus to a search for new theoretical approaches to understanding the crime problem. The rational choice approach (Cornish & Clarke, 1986) morphed into a place-focused perspective as one feature of a general "rediscovery of the offence" (Bottoms & Wiles, 2002), via the development of routine activity theory (Cohen & Felson, 1979), situational crime prevention (Clarke, 1995), and the analysis of spatial crime patterns (Brantingham & Brantingham, 1984). Through this literature, with its primary emphasis on the what, where, and when of crime, where people live together and their daily activities/mobilities structure the urban crime problem, but, importantly, this is conditioned by a dual micro-temporal and micro-geographical lens that de-emphasises broader contextualising frameworks. Some attempts are now being made to broaden this lens through the assimilation of the idea of collective efficacy (Hipp, 2016b; Sampson & Groves, 1989; Sampson, Raudenbush & Earls, 1997), the most recent manifestation of social disorganisation theory emphasising shared expectations and social cohesion at neighbourhood level as drivers of informal social control. But these attempts (Braga & Clarke, 2014; Weisburd et al., 2012; Weisburd, Groff & Yann, 2014) remain somewhat ad hoc and opportunistic (Bannister et al., 2019). Thus, and facilitated by late 20th-century growth in electronic computational and data storage capabilities, and a "data explosion" (Maguire, 2002), this environmental criminology has subsequently focused exclusively on urban crime, but mostly without asking of cities if there are aspects of their broader compositions and constitutions to allow for. The data explosion to which Maguire refers relates to offences rather than offenders, featuring increasing detail on the specifics of crime type and location – and this continues into the present, supporting an ongoing search for concentrations of crime (Weisburd, 2015; Weisburd et al., 2012) and for a generalised theory of spatial crime patterns (Hipp, 2016a).

Today, we have the emerging promise of Big Data, ushering in new actors and a potential to link the global to the individual (Bannister et al., 2019). With growing computational power there is increasing interest in new methods (machine learning, agent-based modelling) and renewed attention to long-standing problems such as how to specify the denominator of crime measurement in the context of mobile populations (Malleson & Andresen, 2016). We are now entering an era likely to be dominated by statistical tools capable of finding increasingly sophisticated patterns in increasingly sophisticated data.[3] Once again, these patterns will be urban patterns. Without a disciplinary engagement that recognises this and uses the emerging opportunities to embrace the multiscalar nature of reality, to exercise a sociological, criminological imagination (Mills, 1959; Young, 2011), the full potential of Big Data will remain underexploited.[4]

Like crime itself, the study of crime is necessarily place and time specific. But unlike its subject matter, theoretical criminology and its empirical extensions are typically not place and time explicit. Obviously, this does not apply in a trivial sense – empirical work habitually records sample information – but in a more fundamental sense, and for the most part criminology demonstrates a lack of self-awareness or concern regarding its situation in particular historical place and time contexts. The broader relevance of the results of criminological inquiry focused on a particular location, or involving a particular period of time, is seldom seriously dealt with; this is either ignored, left as an open question, or assumed away. Also underemphasised is the fact that the nature of criminological inquiry undertaken is strongly conditioned by the data and the research technologies (methodologies and computational capacities) available, which also vary greatly by time and place. While there is nothing sinister, surprising, or even peculiar to criminology in the conditionality of its pursuit (this also characterises the

3 On tools, see Gau, 2010; Groff, Johnson, & Thornton, 2019.

4 This is not to say that Big Data are a neutral opportunity waiting to be unleashed. They have also been decried as ushering in an era of intense surveillance and of widening inequalities (Lyon, 2014; Rieke, Robinson & Yu, 2014). In other words, much depends on how they are analysed and to what ends they are used.

social sciences writ large and, to a lesser extent, even the physical sciences), failure to recognise this conditionality does, to repeat, have major consequences, in terms of potential misreadings of findings, failure to fully capitalise on existing knowledge, and the emergence of disciplinary fissures and factionalisation, fads, and false dawns.

The Multiscalar Nature of (Global) Reality

Our contention is that the city, positioned within a multilayered framework, is a fundamental prism for the analysis of urban crime. Our purpose in this paper is to promote and progress the development of such a prism. If one accepts that cities are open systems, evolving dynamically over time under the influence of internal and external forces and conditioned by their own prior stages of development, what this requires is a multiscalar framework of up to six levels (individual, neighbourhood, city, regional, national, international), with interactions occurring within and across levels. Elements of such a framework are discernible in existing urban scholarship – for example, Hamnett (2003) demonstrates intuitively how a multilevel approach lays bare important features of the dynamic evolution of London over four decades.[5] But much ground clearing remains to be done.

Crime Theory in the Presence of City Diversity

Three specific extant literatures, which collectively encompass research across a wide range of spatial and temporal scales, can be used to demonstrate this need for a stronger and more explicitly global, urban-centric approach within criminology. Each literature speaks in different but complementary ways to a requirement to look beyond current terms of reference, and to the need to integrate the multiscalar (space, time), the offender, and the crime – to think harder about causation in the analysis of patterns and trends, eschewing silo mentalities in favour of greater openness to interdisciplinarity and greater eclecticism in theory development.

The first literature involves the significant effort currently being expended on validating a proposed "law" of crime concentration (Weisburd, 2015) through replication and/or methodological refinement (Andresen, 2009, 2016; Andresen & Malleson, 2011; Andresen, Linning & Malesson, 2017; Bernasco & Steenbeck, 2017; Curiel, Delmar & Bishop, 2018; Gill, Wooditch & Weisburd, 2017; Haberman, Sorg & Ratcliffe, 2017; Hibdon, Telep & Groff, 2017; Levin, Rosenfeld & Deckard, 2017; Schnell, Braga & Piza, 2017; Vandeviver & Steenbeek, 2019). Hipp and Kim (2017, pp. 597–598) note that the law does not found upon any specific geography, which implies that crime concentration for larger geographic units must be a ratio of that for smaller units (in other words, it must demonstrate a systematic scale relationship). More specifically, this means the macro unit of analysis used when analysing crime concentration is of considerable significance. Hipp and Kim explore this issue principally in the context of inter-city analysis (should we expect the level of crime concentration to be constant across cities of different sizes?); Oliveira, Bastos-Filho & Menezes (2017) find that the level of concentration does not scale with city size for cities in the UK and USA. Hipp and Kim also demonstrate that a non-trivial amount of crime concentration arises by chance and that this proportion varies across cities, concluding "we cannot rule out the possibility that there may be macro explanations for why the level of crime concentration differs across cities" (Hipp & Kim, 2017, pp. 624–625).

The second literature promotes social disorganisation theory as an explanation of the spatial distribution of crime. Recognising that the substance of this literature has from the outset been almost exclusively focused on urban America, and that its evolution has been dominated over the course of

5 More recently, Sampson developed such a framework explicitly, albeit using only three levels (individual, neighbourhood, other) to analyse the trajectories of long-run inequality in US cities.

a century by changing American urban conditions, American data innovations, plus advances in statistical techniques, Bruinsma, Lieven, Pauwels, Weerman & Bernasco (2013) evaluate six historically distinct versions of the theory on a common data set for The Hague in the Netherlands. They find that social disorganisation models of every vintage do a poor job in a European context. In seeking to explain this, the authors speculate on the consequences of spatial processes that originate outside the city, factors associated with the spatial and social structure of the city, including Europe-specific patterns of segregation, and changes in personal mobility over time, driven by changes in household wealth and urban transport systems.[6]

The third literature addresses crime trends. Within this literature, single-factor causation narratives are strongly favoured, and comparative (nation, city) analysis is rare, but a convincing review of this body of work has shown that the extent to which city crime trends reflect national patterns depends heavily on the time period covered, while crime trends across microgeographies within cities are both time period and city specific (Baumer, Vélez & Rosenfeld, 2018). Is it not better to approach the question of crime trends from a situated perspective that allows for the influence of factors operating internationally, nationally, and on the urban scale? Young (2011, p. 113) excoriates the presumption of fixed and ahistorical relationships "independent of time and culture" that typifies crime trend analysis: when "we need to look at the crime drop in the context of globalisation, we need to listen to the voices on the street" (ibid., p. 117). The specific factors Young identifies as keys to understanding crime trends – city hyperpluralism, manufacturing-sector decline, service-sector expansion, the rise of the dual-career middle-class household, feminisation of the public sphere, expansion of higher education – either constitute predominantly urban phenomena per se or play out within the urban frame, and all vary considerably across city contexts and over time.

A final and important point to note about the above literatures is that in each, the issue of time receives cursory (sometimes non-explicit) attention, while in spatial terms a multi-scale perspective is habitually eschewed in favour of a dominant single geography approach (respectively, the microgeography of the street segment/block, the mesogeography of the neighbourhood, and the macrogeography of the nation state) – and in each case this imposes epistemological costs.[7] Thus, restrictions on the ambit of environmental criminology arise from the basic fact that it privileges microgeography (Eck & Weisburd, 1995); it explicitly conceptualises crime as activity involving the presence/absence of individuals at micro-locations in order to treat motivation as obvious or irrelevant. Sociological theories of crime, by contrast, typically privilege mesogeography – the "community" or neighbourhood. Given that the spatial division of cities into neighbourhoods has been a universal dimension of urban life from prehistory to the present day (Smith, 2010), neighbourhood as the appropriate geography for criminological inquiry is taken to be self-evident; but this approach obscures as much as it illuminates by ignoring the broader dynamics of urban systems taken as a whole. On a macro scale, "national" data simply constitute an administrative boundary, a mere reporting category unless and until some explicit argument is made to give that category ontological meaning.

Developing an Open Urban System Model of Crime

In the search for a broader analytical framework that can support substantive advances, a number of recent contributions help identify a useful direction of travel. First, Taylor (2015) constructs a multilevel meta-model framework of inputs and crime-related outcomes founded on behaviour settings that nest, interact dynamically across levels, and exhibit feedback and recursive properties. He posits

6 By modelling crime rates and offender rates separately, Bruinsma et al., also bring the who question back into focus, and in doing so demonstrate that crime rates and offender rates need to be understood on the basis of distinct urban causal processes.

7 Taylor (2015, p. 155) speculates that causal time frames lengthen as the size of the spatial unit of criminological interest grows, which is an intuitively plausible conjecture, but we are not aware of any rigorous work on the subject to date.

the city configured as sets of neighbourhoods in flux as the appropriate context for criminological analysis. Next, Sampson (2019), analysing the trajectories of long-run inequality in US cities, advocates the integration of micro-, meso- (neighbourhood), and macro-level processes and outcomes as necessary for understanding urban crime. For Sampson, neighbourhood structures and social processes – "collective efficacy, organisational density, the looking glass neighbourhood, and networks of neighbourhood mobility and information flows that generate city-wide interlocking structures" (ibid., p. 8) – interface with higher-order structures, namely state, economy, law, racism, mobility networks, and the characteristics of individuals that give rise to agency, i.e., selection and choice, cognition, ability, perception, and sorting. Neighbourhood contexts embody inequality of multiple stripes as a result of these interfacings, and condition behaviour. The work of Taylor and Sampson is complemented, at a higher level of granularity, by that of Galster and Sharkey (2017) via their development of a holistic, multilevel conceptual model of urban inequality. In their model, "spatial opportunity structure" conditions the socio-economic outcomes open to individuals, where "[v]arious elements of the spatial opportunity structure operate at and vary across … at least three distinct [spatial] scales. Across neighborhoods, variations in safety, natural environment, peer groups, social control, institutions, social networks, and job accessibility occur. Across local political jurisdictions, health, education, recreation, and safety programs vary. Across metropolitan areas, the locations of employment of various types and associated wages, working conditions, and skill requirements vary and housing and other market conditions that affect individuals' opportunities for advancement differ" (ibid., p. 7). These factors are maintained to operate both directly on the expected value of a given set of personal attributes and indirectly over time on the attributes that can be secured and retained. As with Sampson, Galster and Sharkey see the processes involved as cumulative, path dependent and mutually reinforcing, to which one must also add recursive and non-linear; in the same vein, Sampson (2019) reports a range of empirical findings that chime with the various neighbourhood effects causal pathways identified by Galster (2012) and that exhibit important "dosage" intensity, threshold, and durability characteristics. Collectively, these contributions are important for present purposes because they offer a conceptual interpretation, a *Weltanschauung*, that promises new and enriched understandings of criminality and crime. In doing so, they also coalesce on the notion of the permeable city evolving over time as a system of spatial subunits as the basic framework of analysis. While mainstream analysis continues to be largely conducted above and within it as the *implicit* spatial envelope for most, if not all, environmental and sociological criminological inquiry (Hipp & Kim, 2017; Sampson, 2012), emerging perspectives promote the city *explicitly* as a crucible. To this understanding one can also add emerging recognition of the city as the only meaningful building block for developing national analytical frameworks (Brenner, 2004).

In our view, these emerging perspectives point the way forward. Specifically, we propose that the city, explicitly an open system comprised of heterogeneous,[8] ontologically meaningful spatial subunits that coexist and hold potential as mediums for processes and outcomes, provides the natural prism for the analysis of urban crime at the core of a planetary urban criminology. The general requirement is for an ontologically meaningful multiscalar framework for criminological application, within which all relevant scales (individual, neighbourhood, city, regional, national, international) have their place, and with linkages occurring both within and across levels.

Building on the above, we can scaffold a framework for a planetary urban criminology. Such a crime-oriented model of an open urban system must account for "process" and "outcome". Process here captures the idea of change occurring and operating at varying speeds. Outcome reflects impact, response; it can have scale, speed, intensity, be observed, measured; importantly outcome can take the form of new and subsequent processes. The model also needs to be explicitly multilevel in spatial terms. To illustrate, we consider three levels. Figures 1–4 capture this logic and summarise the framework, which also provides the means of understanding existing theories as special instances of a more

8 These subunits may be labelled as "neighbourhoods", but we emphasise that their significance derives from their ontological properties as behaviour settings and not from any presupposition of internal homogeneity.

general approach. Level one attends to the mapping of higher-order (international, national, regional) processes (globalisation, technical change, economic change, migration) onto broad-scale urban spatial structure and function (Figures 1, 2a, and 2b). Level two focuses on the impact of higher-dimension (time and scale) urban processes on more localised characteristics – neighbourhood built form and social milieux, and spatial opportunity structures, including crime proclivities and possibilities (Figure 3). Conditioned by these two prior levels, level three can then better contextualise patterns of individual movement and choice (Figure 4). At a first approximation, therefore, if one assumes away higher-order process and localised effects, social disorganisation (SD) theories of crime privilege level two while ignoring levels one and three. Routine activity theory (RAT) privileges level three, while ignoring levels one and two. Finally, recent efforts at RAT/SD integration involve the attempted meshing of level two with level three perspectives while continuing to ignore level one.

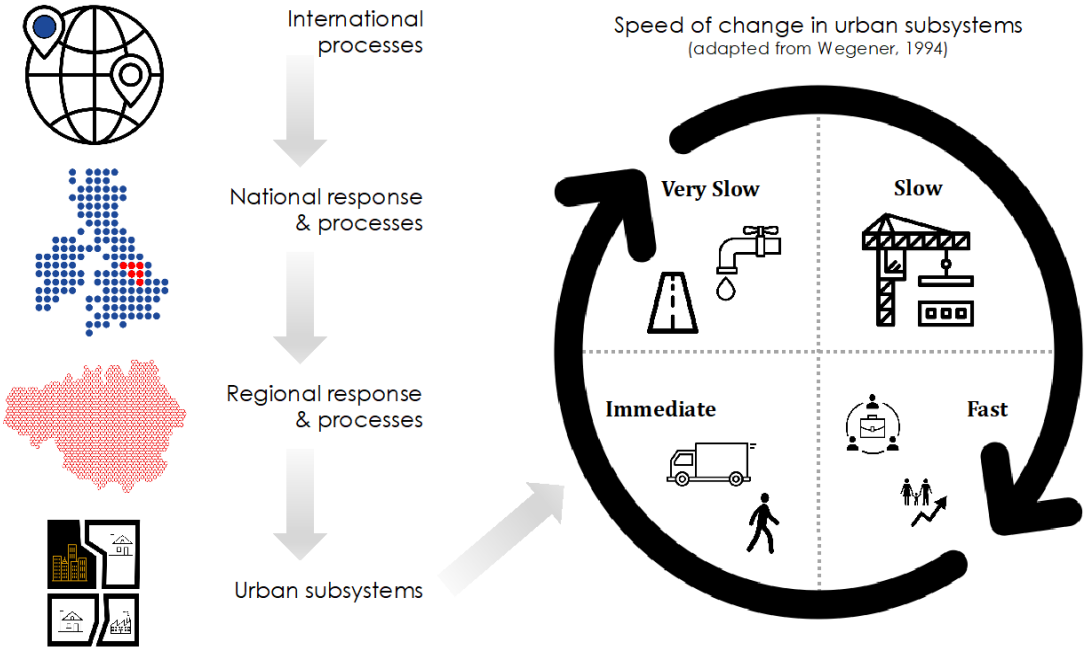

Figure 1. *Higher-Order Processes and the Speed of Urban Change*

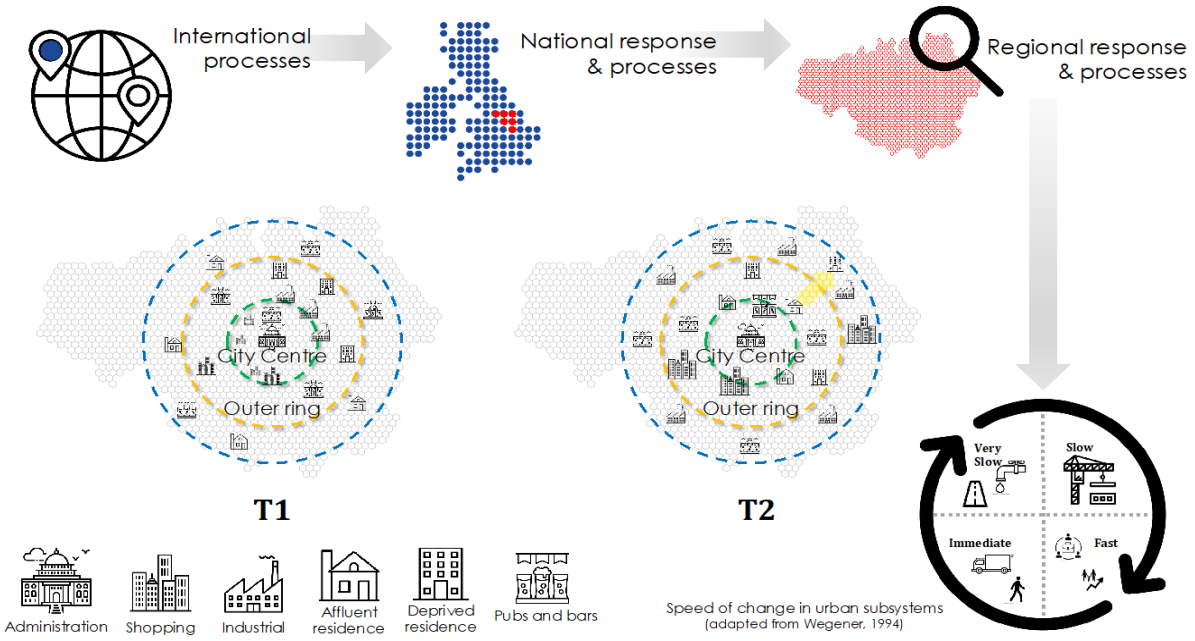

Figure 2a. *Higher-Order Processes, Urban Spatial Structure (Monocentric) and Function*

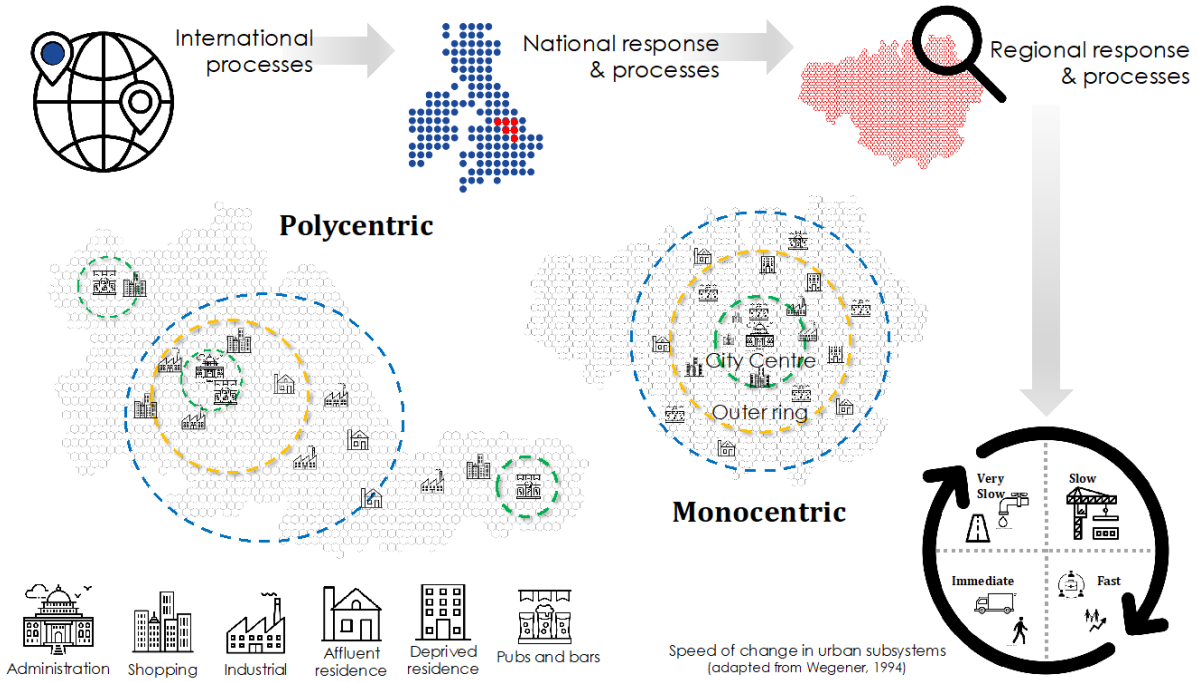

Figure 2b. *Higher-Order Processes, Urban Spatial Structure (Polycentric) and Function*

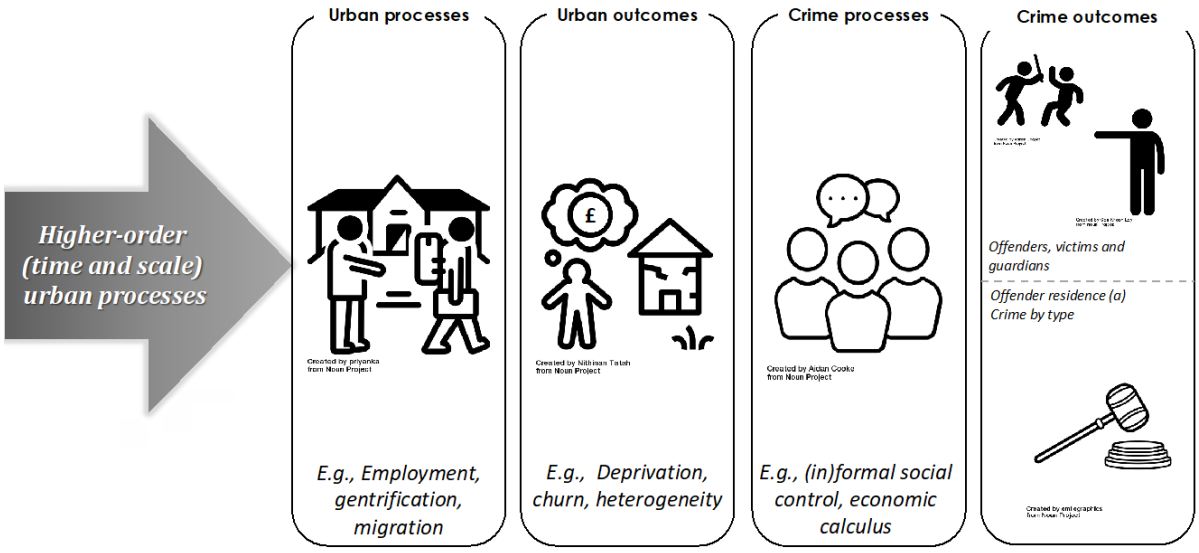

Figure 3. *Higher-Order Processes, Urban Processes and Outcomes, Crime Processes and Outcomes – the Neighbourhood*

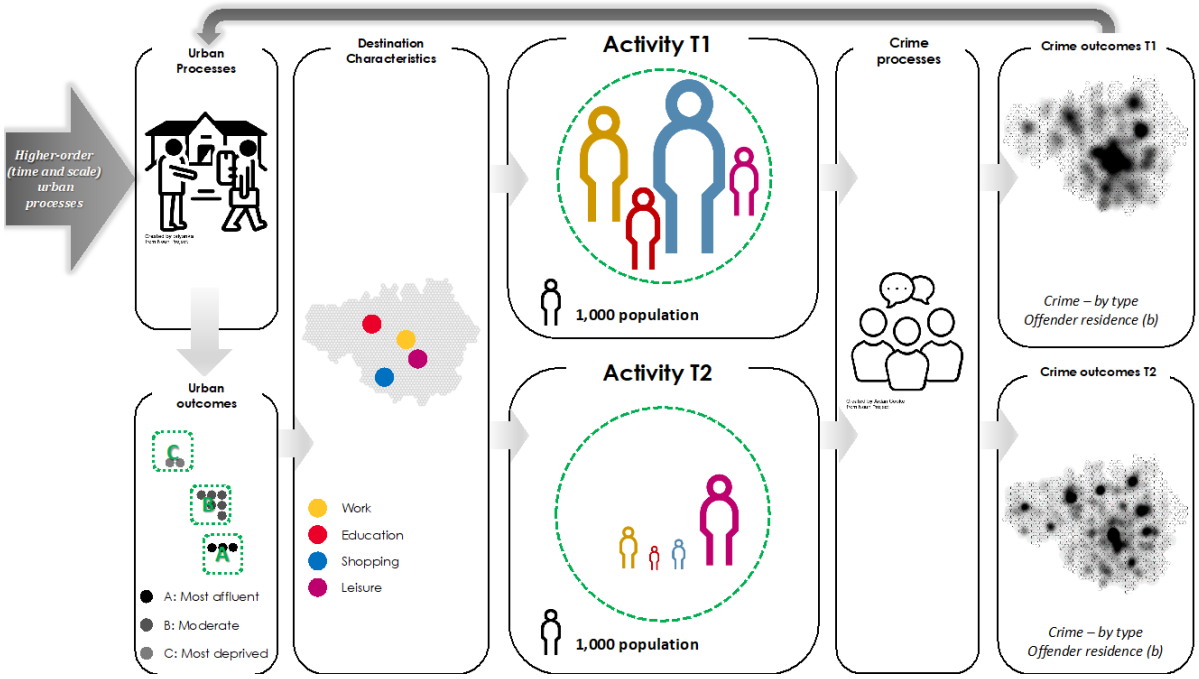

Figure 4. *Higher-Order Processes, Urban Processes and Outcomes, Movement and Choice, Crime Processes and Outcomes*

As noted above, to operationalise this more general approach effectively, the city and its spatial sub-units have to be defined in an ontologically meaningful fashion. In this regard, a substantial body of work exists on criteria for defining urban areas, their structure, and their operation (Frey & Zimmer, 2001; Spiekermann & Wegener, 2018; Wegener, 1994, 1995), which can also be used to help categorise outcomes in terms of likely speeds of change to urban structure and function.[9] Thus, network (transport, communications, utilities) and land use effects of higher-order spatial processes typically manifest slowly and incrementally, albeit at certain points in space and time (the opening of a new subway station, shopping mall, or leisure centre) network change will appear as sudden and disruptive to existing structures. Building structures (non-residential and residential) also take several years to plan and deliver, but thereafter endure as physical infrastructure. Employment and demographic profiles across the urban landscape will change more quickly, as firms incorporate, grow, and die according to the rhythms of the underlying urban economy and as household profiles respond to population ageing, growth, and decline. Flows of goods and people across and within urban areas will respond even faster to real-time conditions of demand and congestion. While the potential of the physical structure, functions, and governance of the city to shape crime and offender patterning might therefore be assumed to be fixed for any given point in time, over time it emerges in this broader view as being in variable states of flux, as the city absorbs (resists or embraces) the higher-order processes driving change depending on the nature of its governance framework and stage of development (whether growing, shrinking/industrial, post-industrial, modern, postmodern etc.). Urban processes and outcomes shape the neighbourhood built form and social milieu, and in so doing serve to influence (in part) the crime processes and outcomes, the proclivities and possibilities, that take

9 Governance (in particular, whether one is dealing with cities operating under market or planned economy conditions) may well also affect relative speeds of response.

place in these settings. Further, urban processes and outcomes serve to frame the individual mobility and choices (behaviours) of residents, the destinations they visit (inclusive of other neighbourhoods) to perform varied activities in differing time frames. In these terms, crime processes and outcomes, proclivities and possibilities, can be understood as a function of the scale and mix of the population present in a particular setting at a given time and of the activities being performed. Significantly, they also serve to inform the offender residence profile of their origin neighbourhoods.

Within any imaginable urban crime framework of the type we are proposing, higher-order processes impact individual behaviour through at least two interdependent channels. The first involves such change affecting the economic calculus attaching to a criminal act (Fox, Albertson, Ellison & Martin, 2011; Jacob, 2011). Thus, the benefits and costs of committing a crime depend, amongst other things, on whether or not an individual is employed, where s/he travels from/to and at what cost, etc., what s/he has to lose from detection, and what opportunities present themselves at a given location. Changing city economic fortunes, in part dependent on (inter)national developments, will then shift expected net benefits at a given location, and the net benefit profile of the city as a whole, as well as triggering a range of decisions (for people, to stay or move; for firms and businesses, to invest or disinvest; for government, to legislate or initiate policy) that will (over varying timescales) further impact the economic calculus for criminal behaviour. This reaffirms the value of environmental criminology even as it rejects the parameterisation of that theory as something independent of wider contexts. The second mechanism involves the impact that changing (multiscale) socio-economic conditions have on individual norms and values; what people think of perpetrating a crime, preventing or reporting one depends on their perceived stake in society, which will vary as circumstances change, and with responses to global and national triggers exhibiting distinctly different profiles across different polities and urban areas as cultural factors dictate. This in turn reaffirms the validity of social disorganisation theories as long as these are positioned within a suitable wider framework of social change.[10]

Reinterpreting Crime Literatures Using an Urban Crime Model Framework

Rather than attempt to formalise a model further here, we turn instead to a demonstration of how the framework proposed can be productively used to draw pre-existing bodies of criminological literature developed at varying spatial and temporal scales into common cause. To begin this task, we might perhaps posit that truly global factors may be as much to do with shock and disruption as they are with continuity. A stand-out possibility in this regard was the Great Recession of 2007–2009. While research here is still scant, Rosenfeld and Levin (2016) report the counter-intuitive finding that acquisitive crime fell in the United States over this period, and present convincing evidence linking this with price deflation. The broader message that Rosenfeld and Levin deliver (see also Rosenfeld, 2014, 2018; Rosenfeld, Vogel, & McCuddy, forthcoming) is that inflation – a late modernity global phenomenon par excellence (Ciccarelli and Mojon, 2010) – correlates persuasively with crime rates at cross-national, national, and city levels, which they attribute to its supply/demand effects in markets for stolen goods. Technological change has also been identified as a correlate of interest in crime studies, specifically via the "security hypothesis" as a major cause of crime reduction in an international context (Farrell, Tseloni, Mailley & Tilley, 2011; see also Baumer et al., 2018 on causal interpretations), but

10 There are many possible modifications or alternatives to this conceptualisation of causal mechanisms. In their recent assessment of the crime trend literature, Baumer et al (2018) offer one such alternative under which causal processes are triaged into factors that affect the social controls (both formal and informal) that condition the likelihood that an individual commits a crime, factors that impinge directly on criminal propensity, and factors that alter the extent to which specific settings are conducive to crime. Each approach requires interpretation as to which specific causal processes associate with which specific mechanisms, and there is room for debate here. The key point is not whether either approach should be considered "right", but, as Baumer et al (2018) note, that this type of integrative framework allows for the marshalling and combination of disparate contributions often wrongly interpreted currently as offering alternative explanations. In that sense, they turn criminological research from a largely zero-sum game into something very different.

technology can also have other impacts, notably in creating new forms of value and changing the economic calculus relating to crime involving existing forms. Mobile phones could not be stolen in large quantities before they entered the mass consumer market or shrank below the size of a house brick; trends in portable electronic devices affect trends in their theft (Thompson, 2017).

Processes of relevance on the scale of the nation state are also likely to be predominantly economic in nature. Rosenfeld and Fornango (2007) found national consumer confidence (sentiment) to have a substantial inverse effect on levels of acquisitive crime in the US independently of objective economic measures of well-being; Rosenfeld and Messner (2009) generalise this finding to Europe, while Rosenfeld (2009, p. 302) presents additional evidence that acquisitive crime "mediates the relationship between collective economic perceptions and homicide". Collectively, these contributions support the view that crime varies countercyclically across the business cycle. As a separate effect, Field (1990, 1999), using data for England and Wales, reports a positive national-level long-run equilibrium relationship between levels of consumption and crime, interpreting the sum of real consumers' expenditure as a suitable representation of the national "stock of crime opportunities" (Field, 1999, p. 5).

A further strand of literature, originating in the 1970s, has consistently reported associations between national measures of income inequality and national homicide rates (for early contributions, see Krahn, Hartnagel & Gartrell, 1986; Krohn, 1976. Nivette (2011) provides a meta-analysis; some (cf. Messner & Tardiff, 1986) argue for the neighbourhood scale as a more meaningful spatial frame of reference). Chamlin and Cochran (2006) suggest this relationship may be positively associated with the level of national economic development, and roots in citizen views as to the perceived legitimacy of the economic inequality in evidence. Other mooted national-level conditioning factors on an inequality-crime relationship include demographic profile (age, growth rate) and the presence of democratic institutions, with more democratic societies experiencing greater jarring from a juxtaposition of material inequality and shared egalitarian values (Krahn, Hartnagel & Gartrell, 1986, p. 288). Regardless of the formulation, the largely implicit assumption remains that higher levels of criminogenic potential derive from a sense of social injustice and consequent feelings of community dissociation. An amplifying source for any such feelings of marginality, at least in a number of Global North national contexts, are the national welfare and crime control policies that have co-evolved with inequality in the post-Fordist era, nurtured and propagated by increasingly efficient (but not necessarily effective) mechanisms of policy mobility (Newburn, 2002; Wacquant, 2009).

Regional levels of disaggregation begin the process of situating higher-order trends spatially, a process that supports meaningful examination of the complex, theoretically ambiguous relationships between unemployment, income, spending, and crime, while on the city scale the important Wegener-consistent processes of employment, accessibility, deprivation, and migration begin to assume a central dominance. Urban cores accrue or divest jobs and people in an unceasing dynamic based on agglomeration, cumulative causation, and external effects, while underlying city infrastructures strive to anticipate and respond. Discordant results within associated criminological literatures (cf. Cantor & Land, 1985, 2001; Hale, 2013; Levitt, 2001 on unemployment and crime) reflect the possibility that unemployment may simultaneously reduce the opportunity cost of crime to the potential perpetrator, reduce the number of potential targets and increase levels of guardianship; conversely, growth in aggregate income (GDP) can both raise the opportunity cost of crime and the net worth (attractiveness) of potential victims (UNODC, 2012). While it is therefore correct to conclude that the effects of unemployment and income on crime have to be determined empirically (Fox et al., 2011), the importance to such work of sensitivity to the specific local context under examination must also be considered, both for deriving robust quantifications and for determining the extent to which the underlying causal processes involve rational choice, norm modification, or both (we return to the nature of causality below). Context here extends to public expenditure levels and trends; quite apart from the direct consequences of public spending on crime for policy positioning, the efficacy and legitimacy of policing, and public perceptions of criminal justice systems (Brogden & Ellison, 2012; Morgan & Smith, 2017), broader patterns of spending, on housing, welfare, education etc., are known to strongly condition crime proclivities and opportunities.

Illustrating these arguments with respect to the UK, and contextualising our understanding of crime in the city of Manchester, three decades of economic change have encompassed a fundamental, regionally variegated shift from manufacturing to service-sector employment, a considerable rise in female, temporary, and part-time employment levels, and the emergence of a dual labour market structure embodying varying worker rights (Fox et al., 2011). These changes have impinged on the levels, nature, and spatial distribution of inequality and poverty and interacted with significant demographic shifts (waves of migration from other European Union countries (on which, see Stansfield, 2016), internal movement, population ageing) that have radically changed the relative size and distribution of the most criminogenic elements of society (in particular, young unskilled males). Contemporaneously, public/social housing investment trends in the UK have been driven relentlessly downwards (Gibb, Maclennan & O'Sullivan, 2018), generating chronic and escalating affordability problems, while the spatial locations of new residential investment and broader operation of the housing system in distributing households spatially have been suburbanising deprivation (Bailey & Minton, 2018; Kavanagh, Lee & Pryce, 2016), further impacting the distribution of potential offenders, victims, and guardians and their residential milieu (Bottoms, 2012; Bottoms & Wiles, 1986). Non-housing investment trends, based on planning policy towards the spatial location of retail and leisure establishments (in the UK favouring large out-of-town centre developments), and trends in consumer purchase behaviour (in particular, online shopping), have also contributed over the last 20 years to the spatial restructuring of British urban economies. Collectively, these factors amount to a massive shift in the spatial distributions of people, goods, work, and infrastructure, i.e., on the qualities of spatial opportunity structures. Individual and policy-driven responses have dynamically driven change in institutional landscapes, patterns of collective efficacy, and the structure of social norms in general and in profile across British urban landscapes. In turn, the configurations of crime potential, identified via environmental criminology, often understood as being fixed at a point in time, emerge in reality as contingent, context driven, and increasingly fluid as the time horizon is widened.

While the city per se is a known unit in the study of crime rates and trends (Glaeser & Sacerdote, 1999; McDowall & Loftin, 2009), efforts by criminologists to explore multilevel representations of the city per se so far remain thin on the ground. Those now emerging (Chamberlain & Hipp, 2015; Hipp, 2016a) are specifically focused downwards, on the relationship between the city and its composite subareas, and remain to be enriched by higher-order contextualisation. Chamberlain and Hipp (2015) investigate the effects of concentrated disadvantage on property and violent crime using a multiple deprivation measure in a citywide multilevel modelling framework, and find that, in addition to the surrounding neighbourhood context impacting neighbourhood crime, the city economic context independently conditions how neighbourhood-level disadvantage correlates with crime. Specifically, highly disadvantaged neighbourhoods have higher violent and property crime rates if located in a relatively non-disadvantaged city; a lack of resources at city level seems to amplify the problems of poorer areas, which the authors interpret as evidence for strain theory.

Hipp (2016a) offers a highly innovative general theory of citywide spatial crime patterning, using a routine activities framework to model the location potentials of offenders, targets, and guardians, given the socio-demographic profiles of residential areas, and the spatial distribution of locations to be visited (employment locations, schools, retail and entertainment venues, and places of worship). He incorporates some social disorganisational effects (thus, neighbourhood characteristics are allowed to affect the likelihood of becoming an offender/target and a version of the Sampson (2019) network of neighbourhood relationships is developed). While Hipp allows for time – in the sense of modelling when, in the course of a 24-hour period, agents might be expected to be present at given locations – his model remains a-temporal in the broader sense that the spatial distribution of city hard infrastructure (homes, workplaces, retail outlets, etc.) and soft infrastructure (the socio-demographics of residential areas) is essentially fixed at the outset, abstracting from the potential effects of heterogeneously distributed and lumpy new capital investment and demolition patterns unobserved processes such as residential stock ageing (Hipp, Young-An & Kane, forthcoming) and abandonment, or rural-to-urban, city-to-city, and intracity migration behaviours. Hard infrastructure is also only partially specified in this model, in that travel is modelled as a simple function of distance decay. However, transport systems are known to have their own criminogenic signatures (Newton, Partridge & Gill,

2014a, 2014b), while investment in transport facilities, routes, and technological advances all impact criminal opportunities (Newton, 2016; Sedelmaier, 2014). The representation of neighbourhood is also rudimentary within the Hipp (2016a) framework. The literature on the role of neighbourhood in shaping crime, while voluminous, remains underspecified (Brunton-Smith, Sutherland & Jackson, 2013; Galster, 2012), but Sampson's earlier noted summary conceptualisation (Sampson, 2019) – of citywide subsets of interacting neighbourhood networks, co-evolving under the influence of identifiable social processes (specifically, collective efficacy, organisational support interventions, and looking glass effects) – is compelling in this regard. Neighbourhood networks demonstrably condition residential mobility flows and organisational ties, while the density of non-profit organisations at neighbourhood level directly affects levels of collective efficacy and crime (Sampson, 2012; Sharkey, Torrats-Espinosa & Takyara, 2017). Hipp (2016b) further identifies collective efficacy as a dynamic phenomenon, responsive to crime and disorder at neighbourhood level and views on neighbourhood cohesion, while neighbourhood self-perceptions are also known to reflect those of others who are living and operating within the city (Sampson, 2013). The explicit incorporation of these neighbourhood perspectives and processes as a further generalisation of Hipp's (2016a) framework offers rich potential for a planetary urban crime analysis of specific cities.

Conclusions

Urbanisation of the planet is an ineluctable dynamic. It is a process of city creation, growth, decline, and network creation – of capital and population flows. The basic unit of account being created through the process, the city, functions as a complex open system, affecting the quality of life of billions. While core dimensions of urbanisation remain highly contested, for criminology it imposes an unavoidable context. Yet as criminology has evolved and refracted under the impetus of theoretical, methodological, and data advances it has lost much of its urban vitality. In the emerging era of new tools and Big Data, there is now a compelling need to think big as well as think small to engage a new type of criminology – or, better, an old type of criminology, one that remains true to its roots, that thinks harder about time and place, that integrates micro, meso and macro processes and outcomes to understand crime in its global urban context.

We have argued in this paper for the adoption of a fresh perspective, involving a multilevel and explicitly urban-based approach to crime analysis, where global, national, and regional factors operating on a spectrum of timescales are considered to be as relevant as city and neighbourhood conditions to our understanding of crime. We have sought to demonstrate how this approach can throw new light and give fresh vitality to criminological research, but we recognise and acknowledge that the illustrations we have offered and expositions we have given draw from an overwhelmingly Global North criminological tradition. There is much still to do to enable the revivification of the discipline, including, but not limited to: meaningful attention to the nature of criminality in different cultural contexts; quantitative investigation of broader ranges of criminal activity; and the development of better and more accessible data sources that can be demonstrated to permit meaningful comparative analysis. We believe the type of framework we have argued for is capable of capitalising on such developments and encouraging others to engage with this approach, providing the detail that they are in a far better position to deliver than we are. In doing so, we expect researchers to find that the practicalities of defining ontologically meaningful spatial entities and associated temporalities, and the very nature of the issues to be explained, will vary greatly from city to city, as will the balance and primacy of global, national, regional city-level, and neighbourhood-level forces in the composition of that explanation. While always sceptical about any claims of city "uniqueness", our view is that we should be open to illumination of how "universal" processes are ameliorated, diminished, or rendered less compelling by regional or local factors, as long as this is argued meaningfully and not simply asserted, and we have made a case for an open urban framework for modelling crime as a tool for achieving this. We thus hope that Global South criminology finds in our paper a framework that can be used to effectively engage, challenge, broaden, and progress Global North perspectives on crime in the pursuit of a truly planetary urban criminology.

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