

Theoretically Sustainable Risks

Rhain Buth[†]

Whether through various risk assessment models, Foucault's emphasis on governmentality, Ericson's emphasis on insecurity or Beck's broader risk society, the concept of risk is frequently drawn upon in criminological theory. But are the techniques and ideologies affiliated with risk and its management sustainable? This paper adds to critical criminological discussions of risk by raising insights from the body of work on environmental sustainability, which interestingly speaks to many of the core features of risk yet with an emphasis on susceptibility, vulnerability and systemic outcomes. Significant emphasis will be placed on the conceptual overlap of institutional management strategies when seen through the respective paradigms of risk and sustainability, offering theoretical implications in light of socio-legal/criminological management practices as well as institutional/procedural reform.

Introduction

Risk, it seems, is a conceptual touchstone referred to in the identification, definition and management of many social ills. Ewald even goes so far as to state that risk occupies 'the single point upon which contemporary societies question themselves, analyse themselves, seek their values and perhaps recognise their limits' (Ewald 2000, p. 366). Even though this may overstate the currency of risk, its broad thematic appeal finds comfort in such fields as insurance, business management, actuarial practices, medical science, sociology and many others. While the use of risk in criminological circles is applauded, challenged and, at times, decried, risk appears to be a significant mode through which criminological harms are understood, given meaning and written into and out of social space. Broadly, by utilising risk as a criminologically useful concept, it is generally put forward that potential dangers are putatively contained, limited and, importantly, are made manageable by strategic, quantifiable intervention. Governance strategies and affiliated technologies for managing 'risks' rely on the production of knowledge by and for expert systems, inclusive of at least definitions, predictions and measurements of crime risks (O'Malley 1998). Shearing and Leman-Langlois emphasise that risk-thinking carries with it the aptitude and inclination, at least conceptually, to 'repair the future' such that problems are 'fixed' before they materialise (Shearing and Leman-Langlois 2004). Ericson speaks of three tongues to the science of risk: risk as a language of probability, as a language of management and as a forensic language (Ericson 2007).

[†] School of Communication

Whether discussed in terms of actuarial techniques, modes of governance or risk management practices, risk-thinking, a term coined by Rose (2000), is seen to be, at minimum, a useful vehicle for addressing and ascribing meaning to criminological concerns, whether in terms of high or acceptable risk, or through risk-based strategies to manage the future (see Ericson and Haggerty 1997 and O'Malley 2004).

This paper explores the discourse on sustainability, offering tentative theoretical points of entry for those who hold onto risk-thinking in delineating and ascribing meaning to criminological concerns. It is not an exhaustive discussion but rather, an initial entry into an area which appears to be attracting increasing attention. As such, this article sketches relevant features of sustainability from a risk-thinking perspective in order to establish a point from which further investigations may depart. Accordingly, this paper presumes that a fruitful interdisciplinary exchange can be achieved while asking a straightforward question: 'What, if anything at all, does the broadly ecologically-minded approach captured within sustainability provide to those who choose to hold onto risk-thinking as a way to investigate criminological concerns?' This article puts forward three broad responses to this question. First, discussions on the definition and management of certain types of harm are central features in each area of investigation. Second, the discourses are structured to share foundational approaches to harm, further illustrating a degree of conceptual constraint and similarity between sustainability and risk-thinking modes of approaching criminological issues. Finally, the measurement and monitoring of harm play a crucial role in operationalising the discourses and perhaps offer further points of comparison. While not bridging the divide between sustainability and risk-thinking in a criminological context, this article sketches a tentative map of the terrain over which such bridges could, in theory, be constructed.

But what is sustainability? While it is a mainstay in the literature to note and wrestle over definitional splinters, the central plank upon which it rests generally refers to the maintenance of ecological health in the face of stress or resistance. In political and policy circles, sustainability appears to have traction in that environmental limits should be reconciled and biophysical impacts of human activities should be monitored and acted upon. As well, there is a general call to avoid those critical thresholds that are claimed to be rapidly approaching. Sustainability is employed in discussions of the temporal viability of endeavours that intersect with the environment, speaking generally to the long term relationship between human society and nature; a relationship that requires, or at least implies, monitoring. It features prominently in the discourse on climate change,

deforestation and rising salinity or mercury levels, as well as a host of other ecologically related matters. Underpinning many of these issues are claims that lean upon a position that the ecological limits of our planet are being breached. Here, sustainability conceptually unfolds into wider circles of contemporary environmental justice and social theory that operate beyond the boundaries of the nation-state. This conceptual extension writes sustainability into global text; to read, interpret and give credibility to ecologic harms. In this vein, sustainability contains a normative ecological claim over the relationship between human populations and their environment, a position artfully put forward by Clark and Dickson (2003, p. 8059). They write that sustainability focuses on the 'dynamic interactions between nature and society, with equal attention to how social change shapes the environment and how environment shapes society'.

It is worth an introductory note that the body of work falling under the label of sustainability is concerned with a core feature of criminology; mainly gaining an understanding over certain types of harm with an eye toward mitigating their effects. In fact, the discourse on sustainability shares more than a single thread with risk-thinking; a certain interweaving is found in the articulation, definition and understanding of this prominent criminological theme. In each context, the actual harm and the potential for harmful consequences require advance planning and prospective calculations. While not speaking to risk-thinking within a criminological context, the work of Ulrich Beck thematically links risk-thinking to the domain of environmental harm, the integrity of the biosphere and the general oeuvre of sustainability. His seminal work, titled *Risk society: Towards a new modernity*, translated into English in 1992, provided a foundational point for a certain sociological imagination as well as an analytic departure from more actuarial inspired concepts of risk. For Beck, risk leans upon those modes which come to terms with climate change, global warming, ozone depletion, toxic pollutants and the general boon of ecological politics. He speaks about entering into a new world where there is not a de facto increase in the prevalence of risks. Rather, he argues that the notion of risk is increasingly becoming the conceptual node through which individual and institutional lives are being organised. (Beck 1992, 1995, 1998, 2002, 2004) While others emphasise varying threads of risk-thinking (see Douglas and Wildavsky 1983; Luhmann 1993; the more criminologically related works of O'Malley 1998; Shearing and Johnson 2005) and while Beck's work has been critiqued (see Dingwall 1999; Elliot 2002), it has nonetheless been at the heart of this area of inquiry (Adam and van Loon 2000). Initially, his work provided a foothold for those ensconced in the ideology or participation of the green movement to challenge what he perceived as credible systemic threats emerging from the use of

nuclear power, genetic technology and what seemed to be a very real prospect of environment degradation (Beck 1992, 1995). According to Beck, modernisation risks, accumulated from the unintentional side-effects of modernisation, lurk behind every metaphorical corner of institutional and individual life and are embedded into those technologies and expert systems that are intended to provide security and stability (Beck 1992, 1994, 1995, 1998). These features not only drive institutional change but also invoke wider techniques and ideologies associated with risk-thinking. Although Beck's concern with criminality can be described as minimal (see Stenson and Sullivan 2001), he has increasingly taken a more sustained interest in regulation, environmental crimes and global terrorism.

Harm, in a sustainability context, has been primarily understood in terms of ecological health. On this point, the theme of sustainability slightly repositions the dynamic of harm, emphasising an intergenerational dimension in understanding and ascribing meaning to harm. This move entails more than the maintenance of a physical environment and successful management of immediate risks; it requires the inclusion of criteria that speak to the horizon of the next generation and beyond. This intergenerational feature is often given implicit treatment in the vague articulations of environmental harm. In the emphasis of environmental harm, whether understood in terms of resource conservation, biodiversity preservation or ecosystem resilience, accounts of harm are at least conceptually opened up from many liberal and neo-liberal calculations immersed in distributional, not longitudinal, logic. Interestingly, while sustainability has been primarily employed and operationalised around priorities of long-term ecological health, there has been discussion of late to move beyond ecologically defined harms. This includes social harms and, importantly for this discussion, crime. Whereas energies used to concentrate on sustainable agriculture and natural resource management, institutional and urban settings have become increasingly prominent themes. Sustainability now reaches into a matrix of practices, touching upon education, public administration, public health and transportation. The promotion of sustainable cities, like Sustainable Seattle and Norwich 21, indicates not only its conceptual breadth but also its operationalisation. While such roots appear to have a greater grounding in the United States and the European context, it may not be long before such tendrils of policy reach into more mainstream criminological circles in Australia, possibly by the routes of restorative justice, crime prevention, community policing or justice mediations. To fully appreciate this move in the discourse of sustainability, it is worthwhile to explore the approach to harm, beginning with a short discussion on its history and conceptual context.

Sustainability's conceptual roots surfaced in the wake of the environmental and green movements, largely associated with efforts to secure ecological health in light of interventions brought about by and through human societies and their development. Much of the early literature concentrated on a development context. Indeed, the formal emergence of sustainability can be traced to the agendas and context of international development. The controversial 1971 Club of Rome study, *Limits to Growth*, emphasised the physical and environmental dangers of unchecked capitalist development. However, it has now become a well worn path in the field to draw upon the Brundland Report of 1987, titled *Our Common Future*, as a watershed moment where sustainable development was articulated as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (World Commission on Environment and Development 1987). Although this definitional point hinges upon the open interpretation of 'needs,' a stance that has received substantial criticism (Redclift 1987, 1993; Beckerman 1994), a foundation was formed from which the international agenda and debate has taken shape over sustainable development. Following this, the INUC, UNEP and WWF co-authored *Principles for Sustainable Living* in 1991. The four principles were: (1) respect and care for the community of life; (2) improve the quality of human life; (3) conserve the Earth's vitality and diversity; and (4) minimise the depletion of non-renewable resources. In 1992, the Rio de Janeiro Earth Summit solidified the foundations for sustainability, resulting in Agenda 21 and, in 1996, the Bellagio Principles were established as a means to monitor progress towards those foundations. Not only has sustainability become increasingly pertinent to grasping certain problems (carrying capacity at the local and global level, adopting the precautionary principle in relation to pollution, conserving biological diversity, stabilising population and reviewing legal enforcement mechanisms in line with ecological health), but it has also become a catchword for promoting the public values of commercial, industrial and agricultural consumption and production.

While, in rhetorical terms, sustainability has shone (for who is opposed to sustainability?), what technically falls under its label is tantalisingly vague. Early use of sustainability as an appropriate policy concern is evident in the development context. Its use was less equated with a radical environmental agenda that fully legitimated ecological damage than with the pragmatic policy accommodations that surfaced in the 1970s and 1980s as issues of import in the development project of the South by the North, where ecological dimensions of development projects were gaining considerable political ground (see Adams 1990). This has led many environmental activists and academics, as well as followers of the Green Revolution (which was initially centred on increasing grain yields to meet exponential

population growth), to argue that these origins have re-positioned the priority and articulation of environmental issues, seeding calculations of capital at the core of sustainability. Worster writes this plainly in stating that 'sustainability is, by and large, an economic concept on which economists are clear and ecologists are muddled. If you find that outcome unacceptable, as I do, then you must change the elementary terms of the discussion' (Worster 1993, p. 140). Although many find this claim more rhetorically strident than analytically astute (see Lele 1991; Redclift 2000; Stead and Stead 2004), for Worster and like-minded others, the co-mingling priorities of ecological health and economically driven international development have produced a soft, perhaps corporately driven sustainability (which is termed weak-sustainability as cost-benefit analysis lies at its intellectual core) instead of the hard ecological edge of environmentally driven interventions, which is referred to as strong sustainability. The thrust of this tension underscores the emergence of economic viability and economic harm as relevant features to be considered within the framework of sustainability. In this vein, sustainability refers not only to 'the integrity of the biosphere and the ecological processes occurring within it' (Diesendorf 2000, p. 23) but, also importantly, emphasises the inter-relationships between nature, society and the economy. Hence, this multi-threaded scope of concern has moved away from an exclusionary ecological framework for understanding and assessing harm toward an integrated perspective over a range of associated harms:

Sustainability addresses the question of how societies can shape their modes of change in such a way so as to ensure the preconditions of development for future generations. From this point of view, sustainability refers to the viability of socially shaped relationships between society and nature over long periods of time (Becker, Jahn and Stieß 1999, p. 5).

No longer is sustainability contained within an environmental context, but has extended its insight toward a more generalisable motif of longitudinal concern and a holistic approach to certain harms affecting human societies. Hence, the themes of social justice, gender equality, political participation and other social problems are increasingly seen to be relevant lines of inquiry and attention. As such, the concept of sustainability, which was grounded on sustainable development or environmental sustainability, has been partially uprooted to stand on its own footing.

As sustainability appears to be increasingly employed as a general consensus-oriented backdrop for a wide range of policy reforms and institutional initiatives, it seems timely to make a few preliminary sketches in this field precisely when, as Halsey notes, 'Why, at a time when most disciplines (e.g. politics, economics,

history, cultural studies) have built or extended their oeuvres to include an analysis of environmental problems, has criminology seen fit not to do so?' (Halsey 2004, p. 834). Upon review of some of the recent introductory textbooks, environmental concerns and crimes remain largely absent in coverage, losing out to terrorism or internationalised domains of crime, despite the apparent upsurge in general interest and popular concern over the environment. One notable exception is White and Habibis's *Crime and Society* (2005), which, interesting enough, speaks to the import of risk-thinking in operationalising the definitions and harm reduction strategies for actual or potential ecologic harm in relation to 'sustainable development.' (White and Habibis 2005, pp. 155-156) While terrorism and international dimensions of crime are, of course, increasingly relevant to the field, perhaps a tint of green could colour the introductory landscape. Moreover, in terms of theoretical convergence and treatment, concern with sustainability has been modestly, if tangentially, addressed in work exploring environmental issues and tentative steps sketching out a field for green criminology (White 2003; South 1998; Lynch and Stretsky 2003) as well as its critique (Halsey 2004). Whether incited by presumptive ideas of degradation in air quality, soil conditions, drinking water or a range of adjunct concerns over biodiversity and global ecosystems, criminological explorations into sustainability have emerged only insofar as they intersect with patterns of human activity. White observes one point of entry for the discipline: 'investigating environmental issues from a criminological perspective requires an appreciation of how harm is socially and historically constructed' (White 2003, p. 484). This exercise necessitates the reframing of conventional conceptualisations of harm in order to grasp both its symbolic and material dimensions. This reframing lies at the centre of the field of sustainability, not only articulating various and contested frameworks that emphasise ecological, economic and social features of harm, but also in reconsidering a holistic approach to grasping those harms.

While perhaps reflecting the respective conceptualisations of harm, there are similarities in the criminological discourse that holds onto risk-thinking from a useful analytic perspective, as well as the general thrust of work under the sustainability label. The similarity of discourse is first evidenced by the fact that risk-thinking and sustainability are both Western notions, drawing heavily upon normatively rational claims upon which future harms should be managed. Subjective claims are given contextualised meaning through domains of expert systems that tend to emphasise modernist views about expertise and their respective 'truth claims' and interventions based upon those claims. At the conceptual level, there is substantial plasticity in the concept attributable to both domains. For instance, there are many points of entry in discussing risk-thinking. Yet a common

point of departure is to note certain plastic and malleable dimensions of the concept while speaking generally to a potential, thought not yet materialised, danger. This, in part, pertains to the nature and scope of its use because there are many modes of risk-thinking. Canvassing the literature, Frank Knight's (1921) pioneering work concentrated on the actuarial dimension and the endless preoccupation with quantification. Foucault's notion of governmentality leans upon risk insofar as discourse positions the citizen/subject as caught upon, in and around webs of expert knowledge (1991). Douglas (1992) emphasises the cultural dimensions of risk perceptions over the calculations drawn, noting that risk calculations are embedded with socially and culturally constructed priorities. Indeed, particular to criminology, most emphasise the dangers in laying claim to risk without conceptual refinement. It should be noted that it has become a well recognised caveat to both risk and sustainability that the breadth and uncertainty of definition plague the concept. 'It is almost a commonplace in the literature on sustainability to deplore the vague or ill-defined character of the concept' (Becker, Jahn, and Stieß 1999, p. 2). Replace risk with sustainability and the same pointed claims over its conceptual ambiguity are made cogent. As such, the first principles, which provide a fulcrum for further analysis and investigation, are very open to interpretation. Nonetheless, managing risks and encouraging sustainable practices garner broad political support. Both are oriented around managing future harms and both appear to be responsible courses of action to take in response to the prospect of future harm: for who is for taking action without taking account of the risks involved and who is for unsustainable practices? In short, not only are both conceptually overloaded, but the resulting conceptual malleability makes their operationalisation increasingly political.

These developments have led some who work with sustainability in the field to agree with the sentiments of Becker, Jahn and Stieß, who assert that 'it is becoming increasingly clear that sustainability inhabits a more or less unexplored borderland that cannot be appropriately investigated either by social or natural sciences alone'. (Becker, Jahn and Stieß 1999, p. 2) It is in this vein that sustainability's symbolic importance may outweigh its conceptual clarity (Diesendorf 2000). Indeed, the contested nature of the terms and concepts of sustainability highlight four important questions: (1) what exactly is to be sustained; (2) for how long does it need to be sustained; (3) how is sustainability measured; and (4) for whom is sustainability to be operationalised? As such, even modest investigations into the discourse on sustainability reveal its conceptual plasticity, methodological variability with respect to measuring and monitoring, and operationalisation of ecological health and thus impinge upon sustainability as a cogent pillar of public policy. Indeed, the vagaries over who decides what is an accepted or tolerable risk are similar in theme and tone

to who decides what is to be sustained, for how long and for whom: the questions are not confined to who decides and defines the terms of risk and sustainability but extend to how we speak of these terms and what we mean by them.

To give this exploration a more tangible context, consider a risk management perspective in relation to ameliorating and controlling airport security, taking O'Malley's 2006 article on 'Risk, Ethics and Airport Security' as a point of departure. O'Malley notes and questions the recent shift from a rule-based system of airport security to one of risk-thinking, which necessitates, from a risk-thinking perspective, defining and measuring resultant and potential harms in relation to changing social conditions, cultural predispositions, ideological perspectives and legal interpretations. Insight drawn from sustainability can be mapped onto this example, providing similar sets of perspectives on what is at issue. This can be seen in relation to Ratner's (2004) conceptual refinement of sustainable development. While O'Malley draws our attention to the construction of risk, Ratner responds to similar constructions of sustainability, drawing upon Weber's value-orientations of collective rationality to provide conceptual clarity. Ratner posits that sustainability generally refers to three separate heterogeneous discourses, an observation that, in part, implicitly dovetails with O'Malley's observations. Ratner posits that the first type of discourse falling under the sustainability label is framed by technical consensus, where experts challenge and compete for, within and over the language of expertise, terms such as 'costing nature' or quantify other terms such as 'ecological health'. Herein sustainability is a technical problem to be overcome. The risk equivalent stems from actuarial modelling, examining incidence rates and quantification of risk assessments. Risk is brought into these equations as a means of assessing and evaluating the technical consensus in relation to determining environmental thresholds, bio-monitoring and the more general application of sustainability indicators (Cairns 2003). In the airport security setting, contesting the viability, accuracy and integrity of these measurements and definitions is a staple technical response in order to control those targets of interdiction and measurements that gain currency as a technical response to criminological problems.

Ratner labels the second mode of discourse conceptualisation in terms of ethical consensus, by which he means a decision-making paradigm enabled and constrained by a particular set of values. Sustainability herein is a framework for political action. The values that enable and constrain that framework are loosely held together by a commitment to the environment and ecological health, whatever those terms may mean. The rub is, in fact, that the consensus over the values that inform our understanding of sustainability largely materialises in the abstract rather

than in practice. Herein the lack of conceptual clarity is wrapped up with the larger notion that 'progress' is to be defined by technical consensus (which is grounded in and given direction through an agreed upon policy agenda). In the airport security setting, O'Malley draws our attention to a consensus of values in determining what acceptable risks are and what experts consider to be informal assumptions that guide our understanding of what constitutes a high risk profile in this particular setting. Speaking to the underlying operationalisation of risk, O'Malley, drawing upon Castels, notes the importance of the underlying values that appear to objectively frame risk: 'risk appears to establish the objective truth about whole categories of people; it permits new kinds of interventions that would not be possible in relation to individuals' (O'Malley 2006, p. 417). In this vein, agreement is sought concerning what value is placed upon the terms of safety, as well as the levels of acceptable risk, for airport passengers and employees.

Ratner's final mode of conceptualisation is held out as a dialogue over values, emphasising the contested nature of the concept. Herein, incommensurability may play such a role that attempting to reduce sustainability or risk-thinking to a consensual set of technical practices or ethical values will only result in an empty and entirely pliable concept, devoid of the comparative analytical strengths that are needed to 'solve' the problems at hand. This feature persists in risk-thinking approaches to criminological problems. Indeed, O'Malley alludes to just this, a position aligned with Beck, as he comments about the prevalence of risk-thinking in the airport security setting:

the resort to risk ... is of greater importance ideologically than it is in delivering increased security. Rule-based security, based on inputs of event-specific intelligence, may be less likely to create socially harmful consequences than risk, without delivering appreciably lower levels of security. (O'Malley 2006, p. 420)

While O'Malley questions the utility of risk-thinking, he is suggesting that there may be a dynamic at play within the discourse. Competing objectives may, in practice, operate to place airport security in greater doubt, a concern that alludes to the wider social context of public security in contemporary industrialised liberal democracies. Hence, the decisions and interventions based upon risk-thinking reflect those competing objectives and interrelated concerns about which mode of obtaining airport security will provide the best results. In this instance, there is competition for those decisions and interventions based upon risk-thinking, an observation noted by Beck in that 'no one any longer has privileged access to the uniquely correct way of calculation, for risks are pregnant with interests, and accordingly the ways of

calculating them multiply like rabbits' (Beck 1995, p. 135). In sum, this discussion tentatively points toward certain conceptual similarities in the use of risk and sustainability insofar as they are both discourses that holds within them (1) modes of decision-making driven by specialised niches of technical expertise, (2) forums for decision-making and intervention where there is a consensus on the norms which guide those decisions and (3) forums that reflect the contested norms and symbolic importance of their respective decision-making and intervention. Additionally, as the discussion above illustrates, conceptual precision haunts both discourses. Yet while there appears to be great academic emphasis on features of conceptual ambiguity, such features have not substantially impeded the swathe of risk-thinking or sustainability-based approaches to social problems as the conceptual malleability has been embedded into the respective endeavours carried out in their name.

It is in their respective operationalisations that more paradigmatic similarities arise: risk-thinking and sustainability share operational concerns over the monitoring and measurement of harm. The positioning of risk factors as modes by which techniques and strategies for crime control are put into practice overlaps with how sustainability indicators are used to measure and exert regulatory control over a delineated space to address its sustainable future (understood both in ecological terms and more broadly). In their respective disciplinary-specific articulations and analyses of harms, both are fundamentally concerned with the quantification of harm – and through this quantification, correlating measures to control such harm are instrumentalised. Most who work with operationalising sustainability continue to quantify ecological health in tandem with social and economic impact, a difficult but integrated multi-discoursed approach relying upon the triangulation of three languages - hard sciences, social sciences and economics - to address environmental vulnerability and susceptibility. It should be noted that much of the early literature draws critical attention to how strategies and technologies of governance had under-emphasised and under-valued the hard and soft sciences, asserting that the general concerns of maintaining environmental and ecological health, in light of human interventions, had become increasingly embedded with the language of economic viability. Perhaps this is more a response to the agility with which corporate governance and commercial enterprise were and continue to respond to perceived changes in social conditions and cultural values. For instance, the surfacing of the triple-bottom line in corporate governance, the premise being that corporate value can be added or deducted from their the economic, social and environmental domains (Elkington 2006), demonstrates the undertones of sustainability and its incorporation into some of the more basic features of modern society. Nonetheless,

there has been significant progress in measuring harm through the lens of sustainability.

Indeed, as sustainability speaks to a relationship between and among social, economic and environmental factors, concerted efforts to measure harm have been met by a morass of methodological and epistemological contests that compete for paradigmatic control over the discourse of sustainability. These contests mobilise divisions between the natural and social sciences, as well as exhibiting the heterogeneity of the discourses noted above. The intellectual backdrop to these concerns is the precautionary principle, which roughly states that when an activity raises the risk of human harm, precautionary measures should be taken even when some cause-and-effect relationships are not fully established or empirically grasped (Raffensperger and Tickner 1999). Building upon the precautionary principles pretext for measuring harm, sustainability indicators are defined, chosen, weighted and linked to the environment (air quality, water quality, soil quality, energy consumption and conservation, solid waste, etc.), society (human health factors such as infant mortality and incidence of disease, population growth, transportation modes, education indicators such as literacy, as well as aspects of housing, public safety, community participation) and the economy (employment, disposable income, public debt and real purchasing power). These indicators operate within a framework set forth by the researcher, institution or policy provider, like the World Resources Institute or the World Bank, to provide guidance with respect to origins of harm and its minimisation.

This is, of course, cumbersome and complex, quickly resembling risk assessment models that interpose and transpose a variety of indicators in order to calculate and predict potential harm. Nonetheless sustainability researchers have rendered a number of fascinating modes of harm assessment. The evocative concept of an ecological footprint, developed by Wackernagel and Rees (1996), is a measure of the land needed to support present populations, making available at least tentative comparisons about relative population levels of resource consumption and waste discharge. The Shannon-Weiner index is a reductionist measurement model that attempts to distil information on biodiversity to a single variable, with the higher the reading, the greater the biodiversity. The vulnerability, susceptibility and general health of particular ecosystems are also measured and monitored by the use of indicator species. Furthermore, the AMOEBA approach, which roughly translates from Dutch to the 'general method for ecosystem development and assessment', addresses common problem in risk-thinking circles: communicating a technical assessment of a complex series of interlocking variables to the wider-public

audience. What these and other technical modes offer to the risk-thinking criminologist is a rich reservoir of analogous paradigms for the measurement, monitoring and conceptualisation of certain types of harm. Importantly, I am not suggesting that sustainability should become the primary lens through which to view and categorise social harm, but rather I am suggesting that there may be some merit in reviewing alternative interdisciplinary approaches. In this vein, while perhaps measurements of harm articulated in the discourse on sustainability are overworked and prone to politicisation, such frameworks attempt to grasp and interpret the inter-generational, global and holistic nature of the harms potentially presented. These concerns are rightful lines of criminological inquiry, having particular bearing on crimes against the environment as well as possessing the potential for broader impact. For instance, extending one prime sustainability approach toward an analogous concept constitutive of a 'criminological footprint', whatever its content, may provide a loose re-think of how we address the resourcing of controlling crime, and its broader social, institutional and individual consequences.

Moreover, those who hold onto risk-thinking in a criminological context may find certain problems in sustainability of usage when considering the scope of the inquiry. For instance, while the degrees of conceptual plasticity noted above have obvious impacts, three pragmatically oriented constraints have arisen in measuring and monitoring harm in relation to sustainability: (1) what is the geographic area under investigation; (2) for how long is that area to be sustained; and, perhaps most problematically (3) how is an appropriate baseline established for what would account for a successfully sustainable area/practice/institution? The wrangling over how these questions are to be answered is steeped in technocratic responses which outstrip the scope of this article and are richly contested, as well as subject to the restraints of politicisation. Nonetheless, the thrust of risk-thinking in the mainstay criminological areas remains largely anchored to the problematic unravelling and re-ravelling of the jurisdictional features of both local and national social fabric features, increasingly attention to the global dimension is deemed requisite. Broad and diverse domains of criminology draw upon risk and its underlining principles in investigating and responding to those primary reported matters of criminal assault, theft, burglary, murder, sexual offences and other crimes. Offender profiles are tailored to particular risks in light of particular criminal accounts and crime prevention techniques provide categories of risk to establish vulnerable or hardened targets. Bridging this divide may offer some technocratic or conceptual re-thinking in terms of operationalising the growing number of sustainable cities programs on

offer, particularly as increasingly issues of crime and its control are seen to be features in similar endeavours in the US.

Conclusion

Dasgupta and Maler (1994), commenting on sustainable development, note that most writings 'start from scratch and some proceed to get things hopelessly wrong. It would be difficult to find another field of research endeavour in the social sciences that has displayed such intellectual regress'. While substantial progress on conceptually refining and operationalising sustainability has been made since such comments were made, such concerns are all the more relevant in bridging disciplinary divides. The general position is that perspective, critique, clarity and innovation can result from interdisciplinary dialogues. In their respective circles, there has been much written about how to get risk-taking and sustainability 'right,' which is a valuable enterprise in itself. However, there may be more to be gained from inter-disciplinary dialogue if the platform concentrates on common thematic concerns and the respective efforts to address those concerns. In short, it may be that broad theoretical discussions over the harms at issue (and their social, economic and ecological features) offer critical, informed footing from which to decide whether this interdisciplinary divide merits breaching. It is a position, at least in theory, which may provide some sustained insight into shared areas of investigation.

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