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Green Criminology: Reflections, Connections, Horizons

Nigel South

University of Essex, UK; Queensland University of Technology, Australia

Abstract

This paper traces aspects of the development of a 'green' criminology. It starts with personal reflections and then describes the emergence of explicit statements of a green criminological perspective. Initially these statements were independently voiced, in different parts of the world but they reflected shared concerns. These works have found unification as a 'green', 'eco-global' or 'conservation' criminology. The paper reviews the classifications available when talking about not only legally-defined crimes but also legally perpetrated harms, as well as typologies of such harms and crimes. It then looks at the integration of 'green' and 'traditional' criminological thinking before briefly exploring four dimensions of concern for today and the future.

Keywords

Green criminology; theory and typologies; crimes and harms; victims; intergenerational ecological justice.

Introduction

This paper traces the evolution of a 'green' criminology, partly from a personal standpoint, describing the (roughly simultaneous) expressions in the 1990s of shared concerns, theoretical propositions and research findings by similarly minded criminologists and socio-legal scholars. These works have found common ground and identity as a 'green', 'eco-global' or 'conservation' criminology and are increasingly well represented in books and journals, at conferences and seminars. This paper was prepared for the first in a sequence of seminars and as such had the task of 'introducing' some of this history. Inevitably it is partial and incomplete but other essays from the series will provide valuable additions to the story.

A personal starting point

For a series of undergraduate lectures in 1996 I aimed to provide a sweep across several 'new horizons in criminology' such as 'feminist', 'post-modern' and 'comparative' criminology and – based upon a combination of interests in public health, environmental issues and corporate crime - I added the idea of a lecture on a 'green criminology'. The lecture was able to draw upon a newly published paper and other material sent to me by Piers Beirne (Beirne 1995) with whom I had started a correspondence and this led to collaboration in co-editing a special issue of *Theoretical Criminology* (Beirne and South 1998).¹

The lecture became an article, 'A green field for criminology?' (South 1998a; see also South 1998b) and argued 'the case for the enhancement of environmental consciousness in criminology and the development of a *green* perspective'. The aims here were 'both modest and ambitious'. They were '[m]odest' in making no claim to put forward a 'theory' for or of, 'a green criminology' but simply aiming 'to emphasise the importance of "thinking green" as a sensitising perspective'. And they were '[a]mbitious' in the belief that 'such a perspective should now find a prominent place on the criminological agenda', opening a 'wide range of possibilities for *inter-disciplinary* work both within the social sciences and with the natural sciences' that could see criminologists collaborating with economists, geographers, biologists, health specialists, human rights workers, lawyers and others (South 1998a: 226). To take the proposal forward I set out four questions arising from the title: first, 'why a Green criminology?'; second, 'what kinds of existing work might this build upon?'; third, 'what theoretical issues are opened up?'; and finally, 'what directions might a green criminology pursue?' These four questions merit some brief revisiting.

Why a green criminology?

On the state of criminology at the time, I noted that, as Ericson and Carriere (1994: 89) had observed, it seemed 'a fragmented field of enquiry' and this could be seen as a reflection of uncertainty and foreboding in a 'risk society' (Beck 1992). Within contexts where orthodoxy and predictability were being challenged within criminology and the sociologies of law and deviance (Hunt 1993; Smart 1990; Sumner 1994), as well as in external social, political and global narratives – particularly in relation to the environmental referents of the 'risk society' (Giddens 1991) – it seemed appropriate to suggest the introduction of a 'green' perspective into criminology. In short, I was arguing that the arrival of the environmental agenda in criminology was overdue given the strength of engagement with green issues in many other fields of study across the social and natural sciences and humanities.

What kinds of work might this build upon?

Very importantly, a green criminology did not 'just appear', of course. There are antecedents and precursors (South and White 2014). It absolutely had to be emphasised that:

... there have been [many] past studies which share these concerns and have ... explored dimensions of environmental damage, crime and victimisation. While a number of these may be seen as purely criminological, others cross disciplinary boundaries. (South 1998a: 214)

Indicatively, such studies² include work on: pollution and its regulation; corporate crime and its impacts on the environment, employees and consumers; organised crime and corruption in the toxic waste disposal market; enforcement and military impacts on the environment and populations; injury to land-based and aquatic wildlife and damage to their natural environments; and, relatedly, the policing of such offences. In addition, there have been numerous studies in the sociology of deviance that richly describe activities that may be commonplace and everyday behaviours in the lives of some but socially deviant in the eyes of others, or other cases that are actually illegal but socially approved or ignored. Examples of such activities and their statuses vary by jurisdiction and cultural viewpoint but could include out-of-season hunting, poaching, fishing without permits, and encouragement of animal contests and fights (Eliason 2003).

The point was to illustrate that green issues had a 'fit' with criminological concerns and were already receiving attention. The next step was to encourage development of a more rigorously environmentally-engaged agenda and set of methods and theories.

What theoretical issues are opened up?

I advanced the idea of a green perspective rather than 'theory' in the same way that Plummer (1979: 90) had responded to critiques of labelling 'theories', with the argument that, in fact, such concept categories '... should not be equated with a theory or a proposition but should be seen as a perspective ...[able to] harbour several diverse theoretical positions'. This should apply to the idea of a 'green' conceptual category for use within criminology. As a 'perspective' it could be associated with any number of theoretical positions and schools and I explore some of these possible sources of theoretical influence on green criminology below.

What directions might a green criminology pursue?

My point at the time was – and still is – that the 'seriousness of crimes against the environment' had not 'received full acknowledgement as a field of study in criminology' despite being 'a matter of global significance'. Possible collaboration with international law-enforcement bodies concerned with environmental harms and crimes was suggested as one direction to pursue, alongside engagement with the articulation of environmental and human rights as well as the work of Non-Governmental Organisations (NGOs). Many NGOs provide important examples of environmental advocacy relevant to criminology and associated interests (for example, Environmental Investigation Agency; Human Rights Watch 2010; IFAW 2012). I also suggested that criminology should be interested in the link between political protest to preserve human rights today and the action required to preserve the environmental rights of future generations (Brisman and South 2013a; Clark 2009; South and Brisman 2012).

Influences and convergences

In fact, in terms of publication chronology, these thoughts were preceded by some years by an important essay by Lynch (1990) on 'The Greening of Criminology'. Lynch set out the scope and aims of a green criminology in a way that can still stand as a 'manifesto' statement. However, its place of publication meant it did not reach a wide audience at the time (although once 'rediscovered' it proved highly influential). Pecar (1981) put forward an even earlier statement about new environmentally damaging forms of criminality in Slovenia and the role of criminology and sciences related to this (Eman, Meško and Fields 2009: 584) but with no English-language translation Pecar's article made no international impact.

Potter (2013) has reviewed arguments that might be put in order to 'justify' a green criminology and this is a useful exercise. But in an important sense, a green criminology is justified because it was inevitable and necessary. It reflected scientific interests and political challenges of the moment, carried forward the momentum of critical non-conformist criminology, and offered a point of contact and convergence. So, neither Lynch (1990) nor Pecar (1981) nor Beirne (1995) nor South (1998a) were needed as a 'first' or 'single' or 'unique' catalyst for the development of a green or eco-criminology, for this was already underway in many places, for similar reasons, with teachers, researchers and writers expressing parallel concerns and proposing a similar project for criminology (see, for example, Clifford 1998; Edwards et al. 1996; Halsey and White 1998; Koser Wilson 1999; Lynch and Stretesky 2001, 2003; Pecar 1981; Sollund 2008; Walters 2004, 2006; White 1998).

Given the emergence of this critical direction in criminology at this point, it may be worth speculating a little about the possible theoretical influences on those whose work began to coincide in thinking about, and drawing attention to, green issues, animal rights, protest movements, eco-feminism, and environmental rights and justice.

New deviancy theories concerned with labelling and stigmatisation had emphasised the need for sensitivity to the plight of the powerless, marginalised and voiceless (Downes and Rock 2011) and it is easy to see how the principles and emphases of this wave of innovation in the

sociology of deviance and criminology informs thinking about speciesism, the treatment of indigenous peoples and environmental injustice. The influence of Marxist or critical criminology (Mooney 2013; Taylor et al. 1973), in various permutations, highlighted the crimes of the powerful and the entrenchment of bias within dominant frameworks of law. Critical questions about the nature of private property rights versus the idea of the environment as a shared heritage to be held in common for all inevitably follow. Feminist criminology had a profound impact in emphasising the crimes of men and the victimization of women. Studies of the marginalisation of women as actors (whether criminals, victims, protestors) and the role of men as responsible for violations of women and of civilized life readily connect with concerns about the violation of the environment and of other species (Collard with Contrucci 1988; Gaarder 2013; Lane 1998; Sollund 2013). Peacemaking criminology (Pepinsky and Quinney 1991) was path-breaking in calling for criminology to see the power of respect, conflict mediation and reconciliation and this translates into a philosophy that emphasises that we should be respecting and treating the planet differently (Wozniack 2011).

This is a period which saw a convergence of influences and challenges, from within criminology (perspectives that were critical, campaigning and unafraid of advocacy) and from without (the burden of greater awareness of the harms and crimes being committed by humanity against the planet and other species with which we share it). The result was the making of an environmentally sensitive criminology: timely, topical and reflective of the zeitgeist. It connected with calls for action among various social and natural scientists increasingly alarmed by evidence of damage to the environment, the disruption of eco-systems, and the challenge of climate change.

The following sections consider, first, the field of study that has emerged and grown; second, the classifications available when talking about not only legally defined crimes but also legally perpetrated harms; and third, typologies of these harms and crimes. I then look at the integration of 'green' and 'traditional' criminological thinking before exploring four dimensions of concern for today and the future.

A green criminological field of study

A green criminology is diverse in coverage and evolving theoretically. Whether or not a green criminology can be seen as a 'theory' (see Brisman, this volume), one characteristic is that it is intellectually open as a framework (South 1998a: 212-213; South, Brisman and Beirne 2013; White 2008: 14). While there may not be universal consensus about a name for this sub-field or perspective, criminologists most frequently employ the term 'green criminology' to describe the study of crime, harm and injustice related to the environment and to species other than humans. There are, however, other important terminologies and approaches to the same issues and problems. 'Conservation criminology' (Gibbs et al. 2010) aims to support evidence-based practice in addressing environmental crimes and risks, integrating criminology, criminal justice, environmental and species conservation, natural resource management, and risk and decision science. Walters (2010) suggests the term 'eco-crime' could encapsulate 'existing legal definitions of environmental crime, as well as sociological analyses of those environmental harms not necessarily specified by law', while White (2010: 6) proposes an 'eco-global criminology' 'informed by ecological considerations and by a critical analysis that is worldwide in its scale and perspective', 'that expresses a concern that there be an inclusive definition of harm' and that is multidisciplinary. Finally, and most obviously, the term 'environmental criminology' might be used and White (2008) has argued the name should be reclaimed from what is more properly considered 'place-based criminology'. This would reflect the way that the word 'environment' is employed in everyday discussion and contemporary media but suffers the drawback of possible confusion with its longer established usage to describe relationships between the incidence of crime and the spatial features of the built and urban environment.³

A criminology concerned with speciesism is also now well established, highlighting harms against non-human species and the dominance of a view that sees them as inferior to humans and exploitable or expendable. Sentiments of disregard underpin abuse, mistreatment or death of non-human species yet, perversely, a high regard and economic value are attached to some species (whether dead or alive) creating a major global trade, both legal and illegal (Beirne 2009; Nurse 2013; Sollund 2008; South and Wyatt 2011; Wyatt 2013). Attention is also being directed at consumer lifestyles, waste, the culture of the disposable and instantly obsolete, and the power of marketing and media in shaping these behaviours and trends (Agnew 2013; Brisman and South 2013b, 2014; Ferrell 2013).

It is worth noting that this has been, so far, a very 'western' dominated literature, largely communicating in English. There may well be other research literatures in other languages that would be highly relevant. To create a truly international research base and debate, we need to find ways to engage with what is – in both an exciting but also challenging fashion – a global set of problems, requiring multi- and inter-disciplinary responses.

The legal or non-legal status of actions

Shover and Routte (2005: 324) have argued that 'criminal conviction of environmental "crime" requires prosecutors to demonstrate either that defendants knowingly, intentionally, or recklessly violated the law or were negligent'. As they observe, this 'can be a high standard to meet in most cases'. However in some pertinent cases, it may be questionable whether it should be necessary – or is even desirable - to have to demonstrate 'intentionality'. These authors suggest we could consider a category of environmental 'illegalities' which 'are violations of rules that do not require demonstration of intent to violate', these generally being 'violations of regulatory rules promulgated and enforced by environmental protection agencies' and carrying civil penalties. The latter would overlap with the category of 'harms' often employed in critical criminology to describe the impact of, for example, what are seen as the 'crimes' of the powerful that do not actually break laws but morally and ethically can be seen to be anti-social, damaging or even lethal in consequences. The distinctions between 'crimes', civil violations and 'harms' reflect a longstanding challenge for criminology: whether to concern itself only with legally-defined crimes or also embrace study of those activities that lie within lawful practice but evidently, at least to some and by some measures of evidence, have harmful consequences that might or should merit legal proscription and response. As Potter (2013: 132) summarises, 'Strict legal definitions of crime have been challenged by many esteemed social scientists since the late 19th century' and '[t]he recognition that "crime" is socially constructed, and that the focus on the social and legal processes that lead to it being constructed are therefore the legitimate focus of the sociologist of crime, is well established'. On a comparative and global basis, what may be illegal and prohibited in one place may not be so categorised or regulated in another. So, as Passas (2005: 773-774) notes, '[a]symmetries in legal definitions and law enforcement enable corporations to do what is prohibited at home in other jurisdictions without breaking any laws. Processes of globalization have multiplied the opportunities for that'.

Of course, the impacts of a negative nature that affect the environment as a result of human activity are enormous in their range and variety and this is an argument for the necessity of flexibility and gradation in law and enforcement, although it is not an argument for dilution and trivialisation of response and process (De Prez 2000). Such range and variety have been illustrated by use of several conceptual models, typologies or thematic classifications.

Typologies of harms and crimes

One suggestive way of differentiating clusters of harms and crimes is by classifying some as 'primary', resulting directly from the destruction and degradation of the earth's resources, and

others as 'secondary', those crimes or harms that are symbiotic with or dependent upon such destruction and efforts made to regulate or prevent it (Carrabine et al. 2014). For example, four sets of primary green crimes and harms might be as shown in Figure1.

| | |
|---|---|
| <p><i>1. Crimes / harms of air pollution</i></p> | <p><i>2. Crimes / harms of deforestation</i></p> |
| <p><i>3. Crimes / harms against non-human species</i></p> | <p><i>4. Crimes / harms of water and ground pollution</i></p> |

Figure 1: Example of green crimes and harms clusters responsible for direct destruction/degradation

Secondary (or symbiotic) green harms and crimes can arise from the exploitation of conditions that follow environmental damage or crisis (for example, illegal markets for food, medicine, water) and/or from the violation of rules that attempt to regulate environmental harm and to respond to disaster. These can include numerous major and minor practices whereby states violate their own regulations (either by commission or omission) and in so doing contribute to environmental harms. Potter (2014) has taken this scheme of categorisation 'beyond secondary green crimes' to identify what, 'in the spirit of consistency', he calls 'tertiary green crimes', defined as those 'committed by environmental victims or as a result of environmental victimisation ... [for example] committed as a deliberate or direct response to environmental harm ... [or] exacerbated by the experience of environmental victimisation'.

White (2008: 98-99) has developed a threefold typology of 'brown', 'green' and 'white' issues: 'brown' relating to urban life, pollution, waste; 'green' referring to conservation and 'wilderness' challenges; and 'white' covering the impact of new technologies. Lynch and Stretesky (2007: 251-261) identify four problems with which a green criminology should be concerned: critical examination of environmental policies, offering meaningful alternatives where appropriate; environmental justice and the 'unequal distribution of environmental hazards'; the 'health impacts of exposure to environmental toxins'; and the links between toxic exposure and criminal behaviour, for example, associations between lead, cadmium and mercury and behavioural changes that produce increases in aggression and violence.

There are, of course, other ways of differentiating and highlighting topics and themes for green criminological inquiry and, as the field grows, further examples are likely to emerge.

Connecting green criminology and traditional criminological theory

There are many sources of theoretical influence that might be drawn upon in the shaping of a green perspective in criminology. This is legitimate and inevitable and perhaps the 'recycling' of ideas and insights seems particularly appropriate for a 'green' criminology. However a good joke is not a sufficient intellectual rationale for the application of existing theory to new criminological concerns. What *is* important is that the world has changed - probably considerably - since many of these theories were first developed and employed. The contours of

social, economic and cultural life, locally and globally, have been reshaped and new questions and arenas of investigation have opened up.

Examples of such application of 'old' theory to 'new' circumstances are as follows. Agnew (2011, 2013) has drawn upon classic criminological theories to provide the framework for his analysis of climate change and the environmental harms caused by the everyday behaviours in which we all engage. Lynch (2013) has described the possibility of the 'eco-city', informed by insights from classic Chicago School social disorganisation theory and its development. The eco-city concept is essentially an approach to small-scale community living based upon green principles and energy, transport and economic systems. Lynch suggests that such an approach to social organisation could also offer benefits to the improvement of human life by reducing crime. Thus:

With respect to crime, an eco-city approach can be easily integrated with the premises of social disorganization theory ... [which] suggests that crime is more likely to occur in disorganized communities because those communities lack a sense of community, effective informal social control, access to resources, and effective mechanisms for mobilizing human capital. (Lynch 2013: 53-54)

This green approach to urban - or any local - environmental design can also be a way of rethinking and re-orientating 'crime prevention through environmental design' methods. Early versions of crime prevention through design often did include planting of greenery but usually to mark out spaces and for the prickly deterrent qualities of certain bushes rather than for their aesthetic, civilising and calming effect, now emphasised by some researchers (Pretty et al. 2013).

There are other less traditional and more recent but nonetheless influential theoretical directions that might also be considered. One twist of the 'postmodern turn' may fit here. This is the proposition that, if modernity celebrates economic growth, it will calculate cost-benefits regarding the environment solely on whether environmental resources can reproduce themselves or more such resources can be found. It is only when this *modus operandi* is endangered that conservation becomes an issue for the corporate and political agendas. This is beginning to happen. Alternatively, a *post-modern* view of the world has, at its heart, a celebration of diversity, plurality and availability of the experiential. So a postmodern view of global resources should value the amazing variety and fecundity of the natural world and the opportunities for pleasure that are offered, whether rarefied and aesthetic, immersive or superficial. Hence, although conservation *per se* might not be a postmodern virtue, the need to ensure the continuation of diversity could be seen as a postmodern necessity (unless simulacra are felt to be sufficient).

The protection of diversity and resolution of conflicts based on valuing of plurality and diversity also have a clear resonance with the 'Peacemaking' perspective in US criminology (Pepinsky and Quinney 1991; Wozniak 2011) as well as Braithwaite's (1989) writing on shaming and reintegration, both being areas of work that encourage dialogue and mediation. The nature of the environment as 'property' and cause of conflict, or as a site of offences from corporate crime to juvenile vandalism, suggests that peacemaking and reintegrative shaming are definitely worth further exploration and development in green criminology. Giving voice to victims is also central here (Hall 2013). Such approaches may also resonate in an interesting way with the idea of promoting exposure to nature as therapeutic, healing and a resource for reintegration (Pretty et al. 2013).

There is, however, a relative lack of theoretical and research momentum concerning green criminology issues in one area that is surprising and this is in feminism. Given the connections

and comparisons that can be made between male violence against nature and against women (for example, see Collard with Contrucci 1988; Epstein 1993; Merchant 1980, 1996; Wachholz 2007) and the role that women have played in resistance and advocacy concerning intergenerational and environmental justice (Gaarder 2013; Lane 1998), it is surprising that feminist criminology and related disciplinary areas have not played a more powerful role in the development of green criminology - though the works of Sollund (2013) and Gaarder (2011) make serious and significant contributions to this gap.

Horizons: From everyday life to future challenges

I want to work towards a conclusion by presenting yet another four-fold typology consisting of the following dimensions: ‘environmental health and victimization’; ‘the socio-economics of everyday ecocide’; ‘global connections’; and ‘intergenerational and future challenges’ (see Figure 2). Crudely these represent dimensions of space and time, from everyday life ‘now’ to the accumulation of problems facing generations that will follow.

| | |
|--|---|
| <i>Environmental health and victimization:</i> | <i>The socio-economics of everyday ecocide:</i> |
| Green harms, crimes and public health impacts Victims and victimisation | Local and Global Consumption Waste |
| <i>Global connections:</i> | <i>Intergenerational and future challenges:</i> |
| Global crime(s) / Harm(s) against humanity and the planet Legal framework Need for new international criminal classification? For example, ‘Ecocide’ | The future Horizon scanning |

Figure 2: Author’s typology of a green criminology (representing dimensions of space and time)

Environmental health and victimization

Negative environmental health impacts may affect individuals in ways that produce many ‘isolated’ tragedies before the cumulative effect or accumulated evidence reveals a more widespread or systemic problem affecting wider groups and populations. Unlike many crimes or harms, environment-related sources and causes of damage may be invisible and the full extent of environmental victimization may easily be overlooked for this reason (Hall 2013; Williams 1996). Nonetheless, danger to public health drives a great deal of environmental regulation and improvement. In the modern period of industrialisation, the ways in which early legislators sought to deal with environmental matters were through public health or resource statutes, in some cases through civil codes and in others through criminal law (Coyle and Morrow 2004). The latter has typically been targeted against industrial polluters who pollute air, water or land, causing public health dangers or public nuisance problems (Holder and Lee 2007).

Lynch and Stretesky (2001: 153-155) expose the hazards and health consequences for human populations associated with the presence of toxic waste, pesticides and dioxin in our environments, both global and local, and show how criminologists can ‘employ medical evidence to identify toxic harms where other forms of data ... do not exist’. The authors note that ‘[l]aw making processes that define toxic harms are heavily influenced by corporate interests expressed in corporate sponsored research ... and public relations campaigns’. As Brown (2007: 2) documents, environmental health problems are strongly contested. This is because the cases

and hazards identified by local inhabitants, representatives and scientists are products of processes at the heart of the modern economy:

When environmental factors are the subject of inquiry, discussions of science are very contested because they lead to potential challenges to the underlying status quo production, distribution, disposal and regulatory practices of our society.

For example:

... corporations and government regulators will be unlikely to accept removal of many chemicals from circulation or to bear the exorbitant costs of extracting these chemicals from the environment. ... corporate interests will likely oppose a research agenda that targets their products rather than individual susceptibilities.

In other work, Stretesky and Lynch (1999: 163) note that '[i]ncreasingly, criminologists have shown an interest in addressing questions related to social justice rather than the more narrowly confined problems that comprise the study of criminal justice' and draw attention to the emergence in the late 1970s of the environmental justice movement 'as historically under-represented social groups began to view environmental hazards in light of social justice issues' particularly where studies in the USA revealed that it was far more likely that Blacks and Hispanics rather than Whites would be exposed to environmental risks and hazardous waste, with associated impacts on health and life expectancy.

Walters (2010: 181) puts victims, the disadvantaged and the disempowered at the heart of the matter when he writes that:

... acts of eco crime create devastating conditions for the lives of local people. The contamination of drinking water, the degradation of soil and the pollution of air and land all expose people (usually those in poor and developing countries) to substantial health risks ...

Green criminology therefore also needs an Environmental Victimology (Hall 2013; Williams 1996). This is a complex matter and Williams is rightly questioning of some 'critical' points too often taken for granted: hence 'the assumption of the powerless as victim and the powerful as victimizer can lead to a stereotyped view' which omits recognition of the possible victimization of all. According to Williams, it is not always clear 'who' the victim is or the reason for this status: applying an environmental justice 'frame' in one context does not always make it readily applicable in another (for example, in a different country). For Williams (1996: 36) there is an urgent need 'to develop better and broader understandings of environmental victimization and through these to develop a consensus on the relationships between justice norms and the sometimes conflicting demands of human security'. This remains a significant project for a green criminology and victimology to undertake.

The socio-economics of everyday ecocide

It is particular actions and behaviours that are of concern here, such as over-consumption and the production and disposal of waste, forming a pattern that might be called 'everyday ecocide' (Agnew 2013). Much activity that is harmful to the planet is a product of the economic forces that require and enable these behaviours. Agnew (2013) writes of everyday acts that 'contribute to ecocide - or the contamination and destruction of the natural environment in ways that reduce its ability to support life (South 2009: 41)' as being 'widely and regularly performed by individuals'; 'viewed as acceptable, even desirable'; and having a 'substantial impact on

environmental problems'. So, we over-consume and then discard the waste arising. We spoil the ground we live on, which filters our water and from which our food sprouts, by burying an incalculable amount of waste on a daily basis. And we litter everywhere, from the heavens of space and the depths of the oceans to our local parks and streets (Groombridge 2013). Some of this waste and litter is biodegradable, a great deal not; some is relatively harmless other than simply being static (fixed and unchanging), while some is dangerous in its current and / or future deteriorated form.

Global connections

The frequency and scope of 'natural' disasters may increasingly be shaped by the actions of humanity: climate change is a result of human impacts on eco-systems, oceans and the atmosphere. Both will affect agricultural productivity and hence food availability and security across borders. As Potter (2013: 136) remarks, '[e]cological science demonstrates that human and natural systems are neither separate nor separable, particularly in our globalised late-modern world'. But while humans are certainly dependent upon our wider environment, it also seems that we are entering an Anthropocene era in which our *over*-dependence results in over-exploitation and excessive impacts.

In a period when societies are globally inter-connected as never before, questions follow about whether international and/or national laws can provide protection of the environment from humanity's excesses. Can 'the environment' be afforded 'rights' that might underpin such protection? Cullinan (2010:144) and others have noted that, over the past few decades, some calls have been made for 'legal systems to take an evolutionary leap forward by recognizing legally enforceable rights for nature and other-than-human-beings'. Cullinan refers to this body of work as 'the evolution of earth jurisprudence' and cites, among others, Berry (1999: 161) who argued that: 'we need a jurisprudence that would provide for the legal rights of geological and biological as well as human components of the Earth community. A legal system exclusively for humans is not realistic'. However, what is 'realistic' is debated and the idea of attributing rights to animals and other forms of non-human life is contested. The interdependence of humanity and nature is denied when inconvenient.

Intergenerational and future challenges

Outlining the foundations of a theory of intergenerational ecological justice, Weston (2012: 261) argues that the community of humankind is collectively made up of generations of the present, the past and the future, with the related implication that rights and obligations also hold across this long intergenerational chain: 'In this manner, the "common heritage" of Earth's natural resources, fresh water systems, oceans, atmosphere, and outer space belongs to all generations in an inter-temporal partnership'. According to this view, both pragmatic reforms of law and governance, as well as more radical revisions, should build on recognition of, and respect for, the interdependence of eco-systems and the principle of intergenerational equity.

Perhaps in some respects simultaneously pragmatic and radical, Higgins (2010; Higgins et al. 2013: 256-263) proposes a law of ecocide as a 'crime against peace', defined as 'extensive damage to, destruction of or loss of ecosystem(s) of a given territory, whether by human agency or by other causes, to such an extent that peaceful enjoyment by the inhabitants of that territory has been severely diminished'. This is a law aimed at the protection of the planet *now* in order that it is in a sustainable and healthy condition for those who inherit it. The challenge is to find ways to implement such visions of justice and law.

Conclusion

Environmental issues to do with resource extraction, species extinction, wildlife trafficking, air, food and water pollution, and so on, are now the daily subject of formal or informal

investigations, disputes and mechanisms for regulation and resolution. Political and pressure groups debate, champion and question matters related to the environment. Contestation and contrarianism are familiar (Brisman 2012), so while the internationally recognised Inter-Governmental Panel on Climate Change (2013) drew one set of conclusions from its work, a different body – the *Non-Governmental International Panel on Climate Change*, sponsored by the Heartland Institute, as part of its mission to ‘discover, develop, and promote free-market solutions to social and economic problems’ (<http://heartland.org/about>) – drew opposing conclusions. The problems of environmental stability and instability, species conservation and landscape management are all scientific but also, unsurprisingly and rightly, they are political matters. They are globally important. But this means there is a crowded political space where many compete, employing different tactics and with access to varying levels of resource: anti-environmentalist organizations supported by corporate interests; pro-environment groups adopting positions seen as extreme or controversial; ‘new social-movements’, ‘alternative lifestyles’ and middle-range political groups, all supporting campaigns to ‘protect and preserve’ and resist development projects; and so on.

We may now be approaching what some scientists have referred to as our ‘planetary boundaries’: the extent to which we are already over or nearing the ability of the planet to cope once nine boundaries – climate change, biodiversity loss, biogeochemical cycles, ocean acidification, water consumption, land use, ozone depletion, atmospheric particulate pollution, chemical pollution – are breached by damage (Rockstrom et al. 2009). There is much to change and much to challenge if we are to respond to this looming crisis. In its own ways, an environmentally-engaged criminology can make a contribution. In whatever terms this criminology is described, the need is to identify the issues, produce persuasive evidence and arguments, and push at boundaries to make interdisciplinary connections. Ultimately, the aim must be to influence policy and practice within this crowded political space.

Correspondence: Professor Nigel South, Department of Sociology, University of Essex, Wivenhoe Park, Colchester CO4 3SQ, United Kingdom. Email: soutn@essex.ac.uk

¹ Pre-email this was a correspondence of mailed letters and papers. I mention the pre-electronic age to also (at least partly) explain why at this time it could be quite difficult to discover who else might share similar interests.

² See South (1998a) for the various references supporting this list. Since then, the number of relevant studies has multiplied significantly. A bibliographic overview is provided by South, Brisman and McClanahan (2014) while White and Heckenberg (2014) provide a textbook for the field. Early and classic contributions are reprinted in South and Beirne (2006) and (White, 2009). The essays in South and Brisman (2013) provide cutting edge and horizon scanning insights for the field.

³ Interestingly, Bottoms (2012: 451) has used the term ‘socio-spatial criminology’ to avoid any confusion that might arise if ‘environmental crime’ were used ‘because it is sometimes used to refer to the important emerging field of ‘green’ criminology’.

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