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CLIMATE CHANGE AND CONFLICTS (E GILMORE, SECTION EDITOR)

Criminological Perspectives on Climate Change, Violence and Ecocide

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Abstract
Purpose of Review The object of this article is to review recent criminological writings on climate change and its implications for violence.
Recent Findings Criminological literature tends to focus on either the negative consequences of climate change, such as for example an increase in violence due to increases in warm temperatures, or the causes of global warming, such as activities and omissions by nation-states and transnational corporations that foster ongoing carbon emissions.
Summary The article provides insight into climate change-related crimes through the lens of criminology. It does this by examining the relationship between temperature changes and human behaviour, climate change and social strains, and the re-casting of crimes of the powerful as ecocide since they contribute to global warming. Related issues pertaining to contrarianism and the securitisation of natural resources, both of which protect and sustain particular sectional interests rather than the public interest, are also considered.

Keywords Criminology · Climate change · Violence · Ecocide · Crimes of the powerful

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Introduction

Criminology is the study of crime, criminality and criminal justice systems, focussing on criminalisation as a process, the causes of crime, the social context of offending, crime prevention, systems of social control and the punishment and rehabilitation of offenders [1].

It is not a discipline but a field, incorporating disciplinary expertise from areas such as sociology, psychology, law, history, politics, social work, philosophy and Indigenous studies. Its foundational disciplines are sociology and law, and internationally criminology programmes are usually based in either a Law School or School of Social Sciences.

In places such as the USA, a distinction is also generally made between 'criminology' as an academic social science and 'criminal justice' as an applied field of research and practice. By contrast, in Australia, criminology consists of both key strands: a critical academic element and an applied practice element. It is therefore an applied social science, involving both direct engagement in and with the institutions of criminal justice, as well as critique and assessment of justice issues and criminal justice institutions [2].

Crime is what the law says it is, that is, certain acts (and omissions) are defined in the legal system as being criminal while others are not. However, given that powerful interests (such as business lobby groups) frequently influence what is included within legal definitions of crime the term is sometimes used by criminologists to describe social harms that have not yet been legally defined as criminal. This includes harms related to and stemming from global warming.

This article considers recent criminological writings on climate change, with a particular focus on the association between climate change and violence. The intention is to map out what has been written in this area, as well as to introduce the reader to new conceptualisations—such as ecocide—that

attempt to ascribe a degree of criminal responsibility and accountability in regard to the causes of global warming. The article considers the causes, consequences and contexts of climate change from several different criminological perspectives.

Climate change-related violence is sometimes presented as an equation that suggests that 'biophysical changes equal behavioural changes'. In other words, as temperatures rise so too will violence because there is greater propensity among individuals affected by heat to engage in violent acts. Other criminological explanations, however, place greater attention and weight on social contexts, such as food shortages arising from drought, and how these shape collective behaviour at a societal level. Some scholars also consider the system-level causes of global warming and focus their attention there. Each approach can provide insight into the dynamics of climate change, and each suggests potential responses to specific aspects of climate change. In doing so, each can also lead to quite different practical and policy implications.

Studying Violence

From the point of view of criminology, violence is both ubiquitous (it is everywhere) and socially patterned (for example, predominantly perpetuated by men) [2]. It is also multilayered as regards context and consequence [3]. It manifests at the direct face-to-face level as assault and homicide (or killing); yet it also takes mass forms such as genocide and 'collateral damage' (in the case of civilian war victims). There are immediate situational triggers that spur people to violence (for example, emotions in the heat of the moment). There are also structural pressures and tensions within which the impetus to action occurs (for example, conflicts related to water and food scarcity). Violence is thus always socially constructed (in terms of legitimacy and with regard to who are the specific victims and perpetrators), and it always involves a combination of personal, institutional and society-wide determinants [2, 3].

In examining the relationship between climate change and violence, criminological perspectives seek to account for the complexities of the phenomenon by identifying the specific factors which drive climate change-related violence and/or the reasons why certain types of environmental harm persist even when the harm is well known and foreseeable. As with most fields and disciplines, there is a natural diversity of viewpoints within criminology, as different writers and researchers study the world through very different analytical spectacles [1]. These differences are also reflected in the adoption of a wide range of techniques and methodologies in the study of crime including violent crime; from historical document analysis, to surveys and questionnaires, to interviews and field observations [2].

There are three broad levels of criminological explanation: the individual, the situational and the structural [1]. For the first level, the main focus is on the personal or individual characteristics of the offender or victim. This level of analysis tends to look to psychological or biological factors that are said to have an important role in determining why certain individuals engage in criminal activity. For the situational level, the main site of analysis is the immediate circumstances, or situation, within which criminal activity or deviant behaviour occurs. Key concerns are the nature of the interaction between different individuals and groups (including how and to whom labels are applied), the effect of local environmental factors on the nature of this interaction and the influence of group behaviour and influences on social activity. For the social structural level of explanation, attention is directed at the broad social relationships, power dynamics and major social institutions of the society as a whole. This analysis makes reference to the relationship between classes, genders, different ethnic and 'racial' groups and other social divisions. It also can involve investigation of the operation of specific institutions, such as corporations and nation-states, in the social construction of and responses to crime and deviant behaviour.

The vantage point from which one examines violence—a focus on personal characteristics through to societal institutions—shapes the ways in which issues are conceptualised and responded to. This is a criminological truism that is as relevant to climate change-related violence as it is other types of crime and criminality. Yet the scale of the problem (global warming) and the pervasiveness of its consequences (substantive and widespread climate change) mean that criminology has also had to develop specific concepts to account for and respond to the resultant social and ecological harms.

Dedicated research on the nature of violence points to a wide range of causal factors that range from the macro-social through to the biological [3, 4]. For example, social structural explanations of street violence tend to view the phenomenon in terms of marginalisation of specific population groups [5, 6]. This marginalisation may have a number of interrelated dimensions, including economic (e.g. poverty), social (e.g. exclusion from mainstream institutions), political (e.g. little or no representation) and cultural (e.g. minority religious or language group). In effect, brutal social conditions provide the groundwork for angry and aggressive people, whose main resource is their body rather than capital or wages. Different risk factors combine, at different levels and according to different timelines, to collectively influence behaviour [4]. Consideration of the roots of violence and its various manifestations leads inexorably to the conclusion that violence can only be diminished or prevented through a multi-pronged approached, backed up by considerable political will and social commitment.

Climate-Related Crimes

Typologies of climate-related crimes similarly reference diverse situations, settings, offenders and offences. For example, consideration is now being given to crimes such as water theft on family farms for use related to basic survival (caused by lack of rain and changes in temperatures), through to new opportunities for organised crime networks to be involved in activities such as carbon emission fraud and illegal trade in water (created by institutional failures including inability to deal with scarcity) [7•, 8, 9, 10].

Analyses of global warming and climate-related crime have begun to feature in criminological work, although more needs to be done [11••, 12, 13••]. For example, specific criminal and environmental offences associated with the phenomenon of climate change have been categorised as follows:

- offences that contribute to climate change (e.g. unlicensed pollution, illegal felling of trees),
- offences arising from its consequences (e.g. water theft, wildlife poaching),
- offences pertaining to civil unrest and organised criminal activities stemming from climate change (e.g., food riots, migration and people smuggling) and
- offences related to regulation and law enforcement associated with climate change mitigation and adaptation strategies (e.g. carbon emission trade fraud, regulatory corruption) [13••].

When the climate alters and as different institutional responses to global warming emerge, there will also be changes in the type, rate and frequency of offences [14].

As it stands, existing environmental conflicts already largely centre on the allocation and struggle over resources, accompanied by attendant crimes, and these are set to escalate as major biophysical changes continue to occur [15, 16, 17•]. For instance, every year, millions of hectares of forest are destroyed through legal logging of forest plantations and old growth forests as well as illegal logging [18]. Deforestation not only contributes to global warming; it has been estimated that deforestation accounts globally for about 12% of total human-caused greenhouse gas emissions [19, 20]. It is also marked by violence. Transforming land uses for private profit is a problem worldwide [15, 17•] and can involve forced take-overs of communal land and violence perpetrated against local communities who resist such uses and take-overs by armed groups [21]. Similarly, the profitability of biofuel production, based upon flex crops such as palm oil, is leading to large scale plantations in places such as Indonesia, Brazil and Colombia. This has resulted in the clearing of rainforests and in some instances the forcing of local communities and Indigenous people off of their lands [22].

Criminality has also been associated with the advent of varying types of natural disaster that are projected to increase in intensity and frequency in the foreseeable future due to global warming. These include such phenomenon as floods, cyclones, long droughts and extreme heat spells. Study of disasters (both human-created and natural) has revealed substantial instances of criminality [23•, 24•, 25, 26, 27]. These include crimes that occur pre-disaster (e.g. poor construction standards such as omission of steel reinforcing in concrete), during the disaster (e.g. looting, rape) and post-disaster (e.g. insurance fraud, misappropriation of aid funds, sex trading for aid). The scale of recent disasters (for example, the extensive floods in Pakistan in 2011 in which one third of the country was inundated) indicates additional forms of criminality associated with these events, including the collapse of public order, enforced climate-induced migration and the prevalence of local gang cultures.

Studies of the nexus between climate change and crime tend to focus on either the *consequences* of climate change for crime (that is, climate change leads to certain sorts of crime) or the *causes* of global warming (that is, certain sorts of behaviour leads to climate change). Across a range of studies, different levels of analysis are apparent. Those focussing on individual-level explanations (such as psycho-biological responses to temperature change) appear to have most relevance for adaptation strategies (that is, how to respond to climate change). Approaches that focus on structural level causes tend to be more concerned with issues of mitigation (that is, how to prevent climate change) and are more critical of entrenched policies and power structures.

Explaining the Link Between Climate Change and Crime

Recent criminological study has pointed to different types of association between climate change and violence. Much of this has indicated causal relationships between global warming and violent crime, although how robust the evidence is, and whether this will remain so over time remains a significant question, particularly given the longer term adjustments to climate change that will most likely occur in human communities.

Human Behaviour and Temperature Change

Criminological research exploring the nature and dynamics of criminality associated with climate change has included examination of the relationship between temperature changes and human behaviour. One issue is whether extreme weather conditions, especially heat waves, are related to increases in aggression and thereby criminal violence [28•, 29]. It appears that there are increased levels of aggression in hot temperatures, with such aggression having a violent, emotional basis associated with hostility toward a target [28•]. The

implications for this are far reaching. For example, a study examining the effect of weather on monthly crime patterns in the USA predicted that climate change will lead to substantial additional numbers of murders, rape, aggravated assaults and robberies, among other serious crimes [30•]. Put simply, violence is a 'summer' event and 'hot weather' characteristic. It is further suggested that changes at the individual level—namely, aggression related to heat—may contribute to collective violence during heat waves, such as street riots and mob violence [28•]. Changes to the physical environment, such as the introduction of mist sprays in bus shelters and use of temperature-controlled urban movement corridors would, in this scenario, reduce the effects of heat and therefore levels of aggression.

Situational Approaches and Place-Based Activities

The focus of situational approaches is on the connections between local weather, indoor/outdoor routines, specific places where people spend their time and with whom and how this affects their propensity to engage in certain types of crime [31]. It is suggested that this will vary depending upon ambient temperature and place and population group. For example, a study in Dallas, Texas, found that higher temperatures may encourage people to seek shelter in cooler indoor spaces, and therefore street crimes and other crimes of opportunity will thereby be subsequently decreased [32]. Conversely, research in Beijing has found that while robbery is not correlated with weather, burglary is insofar as it is correlated with sunlight hours and also varies by the season of the year [31]. In a similar vein, research has examined 'weather shocks' in India. This refers to the impact of temperature changes in what are described as harmful degree-months, during which mean temperatures are above 32 °C [33]. It was found that higher rainfall is associated with significantly lower levels of crime, including violent crimes such as murder and rape. On the other hand, higher average temperatures are associated with higher crimes against public order and crimes against women, particularly rape. Monthly temperatures and levels of precipitation were also seen to have significance in regard to crime rates and types in St. Louis, suggesting that climate change may have a significant impact on crime [34]. Whether or not the weather will have such negative and apparently pervasive impacts depends very much on physical aspects of the built environment and social infrastructure in particular localities.

Social Strains and Communities on the Move

General strain theory (a particular theoretical orientation within criminology) has been used to explicate the impact of climate change on crime in terms of the factors associated with climate change (such as rising temperatures and extreme weather events) which are, in turn, linked to criminogenic mechanisms such as social and personal strains, reduced social supports and social conflicts. It is argued that these will result in higher levels of individual, group, corporate and state crime [35••]. The basic proposition of strain theory is that crime is a result of social disjuncture or social processes that represent a *social strain* within a society. This has both objective and subjective aspects involving, for example, loss of legal avenues to attain goals (such as loss of secure employment), loss of positively valued stimuli (such as friends or money) and experiences of negatively valued stimuli (such as verbal and physical abuse). Rather than looking solely at aspects of personal psychology or individual biological traits, this approach argues that crime is socially induced, thus locating the cause of crime in social structures and/or value systems that in some way are socially pathological. The pathology is generated from outside the normal life and decisions of ordinary citizens and residents. For example, changes in local weather conditions are seen to affect how people behave psychologically and socially, including participation in activities that may involve poaching and illegal harvesting for the purposes of subsistence [34]. Climate change will likewise see people fighting over diminished resources in their locale [36] and/or leaving areas that for example suffer chronic drought, with possible conflict in the receiving areas [36, 37]. Climate-related migration will create all manner of opportunities for crime and violence, from human trafficking and illegal border crossings to gang stand-over tactics in the acquisition of food and water.

Crimes of Ecocide and Contrarianism

The main forms of violence that engender a formal definition and authoritative social response are crimes such as assault and homicide. In contrast, corporate crimes are seldom seen as a form of violence even though they cause more deaths and harms than other forms of violence [38]. This is typical of crimes of the powerful. Of particular interest to the present discussion is criminality related to corporate crime (large businesses and industry conglomerates), state crime (government agencies and officials) and state-corporate crime (collusion between companies and states) [39]. A key defining feature of crimes of the powerful is that such crimes involve actions (or omissions and failures to act) that are socially harmful and carried out by elites and/or those who wield significant political and social authority in the particular sectors or domains of their influence. Such harms are inseparable from who has power, how they exercise this power and who ultimately benefits from the actions of the powerful. Powerful social interests not only perpetuate great harms, they also obscure and mask the nature of harm production. They are also best placed to resist the criminalisation process generally. Given these realities, criminological understandings of crimes of the powerful generally refer to harm-based criteria (in addition to existing

legal definitions) in describing certain activities as crimes. As well as expressing moral condemnation, the use of such language is to some degree aspirational—describing acts that *ought* to be criminalised because of the nature and extent of the harms they incur.

Crimes of the Powerful as Drivers of Global Warming

Rather than tackling global warming, quite the opposite has been happening at a systems level. While some enterprises have embraced 'green capitalism' and new technologies that are meant to be more environmentally benign, the overarching trend has been continued reliance upon the 'old' extraction industries such as coal, gas and oil. These are being supplemented by newer forms of energy extraction, the so-called extreme energy industries. These refer to novel forms of ecologically unsound energy extraction: mountain-top removal, deep-water drilling and hydraulic 'fracking' [40••]. The biggest contributors to carbon emissions are transnational corporations and the nation-states. Carbon emissions that lead to global warming occur in the pursuit of 'normal' business outcomes and involve 'normal' business practices [38, 39]. For example, quantitative analysis of historic fossil fuel and cement production records of the 50 leading investment-owned, 31 state-owned, and 9 nation-state producers of oil, natural gas and cement from 1854 to 2010 showed that they produced 63% of cumulative worldwide emissions of industrial carbon dioxide and methane [41]. The largest investor-owned and state-owned companies produced the most carbon emissions. Greenhouse gas (GHG) emissions come from a variety of sources and include direct emissions, indirect emissions that arise as a consequence of a corporation's activities and other indirect emissions from sources not owned or controlled by a corporation but which occur as a result of its activities [42]. The largest 500 companies account for over 10% of total GHG emissions produced each year, and 31% of GHG emitted globally each year is attributed to the 32 energy companies among the top 500 companies [42].

Ecocide as a Crime

State-corporate crime relates to both acts (e.g. reliance upon dirty energy sources) and omissions (e.g. failure to regulate carbon emissions). Failure to act, now, to prevent global warming—and climate change denial or contrarianism itself—has been described as criminal [43, 44]. One way in which to conceptualise this criminologically is through the concept of *ecocide*. This refers to the systematic destruction of environments [45, 46]. A key feature of this crime is that it occurs in the context of foreknowledge and intent. That is, ecocide arising from global warming, while marked by uncertainty in regard to specific rates and types of ecological change, is nonetheless founded upon generalised scientific knowledge that profound change is unavoidable unless carbon emissions and deforestation are not radically reduced [47]. Climate change and the gross exploitation of natural resources are leading to the general demise of the ecological status quo—hence increasing the need for the crime of ecocide [48]. If carbon emissions are at the forefront of the causes of global warming, then the obvious question is why continue to emit such dangerous planet-altering substances into the atmosphere. From a critical criminological perspective, ecological destruction accompanying natural resource extraction such as the oil and gas industries, coal mining, logging and so on should be proceeded against under an international law of ecocide [49].

Contrarianism as Denial of Crime and Criminality

Investigation of state/corporate collusion frequently draws upon the criminological notion of *techniques of neutralisation* [50, 51]. This refers to the ways in which business and state leaders join up in attempts to prevent action being taken on climate change. The politics of denial at both the level of ideology and policy is propped up by various techniques of neutralisation, with the net result being inaction in addressing the key factors contributing to climate change, such as carbon emissions. These types of denial should not be conflated with scepticism as such, but rather as a form of contrarianism. As Brisman [52] notes: '…while scepticism can be both a healthy part of the scientific process and an excuse to present political or value-laden perspectives (that are masked behind a scientific façade), contrarianism suggests an ideological, rather than scientific, impetus for disagreement'. Criminological work done on the politics of climate change in the USA has demonstrated close connections between business and the government culminating in a form of state-corporate contrarianism [52, 53•, 54, 55•, 56, 57]. One social consequence of this type of response to climate change and global warming is that it tends toward inaction on climate change issues at precisely the time when action is what is needed [52]. This is particularly evident at the present time under the Trump regime in Washington.

Environmental Insecurity

Diminished human security stems from the bio-physical and socio-economic consequences of various sources of threat and damage to the environment, including and especially climate change [58••]. Shortages of food, water and non-renewable energy sources can trigger criminal activities involving organised criminal networks, transnational corporations and governments at varying political levels [59, 60•, 61]. Popular rhetoric about the national interest and business health can both obscure and bolster the fact that environmental security tends to be constructed around specific private and state

interests. Crimes of the powerful thus also involve control over the basic ingredients of life.

Securitisation and Climate Change

At a concrete level, the social construction of 'security' in an environmental context frequently privileges the rights and interests of the powerful over the public interest [60•]. Thus, environmental security is frequently about a form of *securitisation* that protects financial interests rather than ensuring fair and equal access for all. In pursuit of the ownership and control over natural resources, and to exploit these for particular purposes, governments and companies have singularly and in conjunction with each other worked to break laws, bend rules and undermine participatory decision-making processes. Sometimes, this takes the form of direct state-corporate collusion (state-corporate crime); in other instances, it involves manoeuvring by government officials or company executives to evade the normal operating rules of planning, development and environmental impact assessment. Security is also being sought through the appropriation of resources in specific bio-social locations, leading to a proliferation of ownership contests (e.g. disputed islands involving China, Vietnam, the Philippines, and Japan; re-drawing of boundaries in the Arctic among border states such as Russia, Canada, Norway and the USA) [53•]. The violence of war lurks not far behind the intensified securitisation of nature.

Environmental Horizon Scanning

Environmental horizon scanning refers to looking over the horizon to identify potential risks and problems involving the environment [62•, 63]. As an intellectual exercise and planning tool, it provides a mechanism to discern where emerging threats (and positive opportunities) may arise and potential ways to mitigate or adapt to these. In criminological accounts dealing with the environment, it has two aspects: one relates to geographical scope (looking beyond our own borders); the other refers to temporal considerations (looking to the immediate future and beyond) [61].

In analysis of horizon issues, a variety of concepts are deployed. As explained elsewhere, unpacking the nature of 'harm' is central to the task.

Certainly, matters of time, space and scale are relevant. For example, risks and harms may be direct or indirect, and their consequences may be felt in the immediate or in the long term. Harm may be specific to local areas (such as threats to certain species, like coral in the Great Barrier Reef) yet manifest as part of a general global pattern (such as being an effect of wide scale temperature changes affecting coral everywhere). Harm is central, but this may be non-intentional (in the sense of being a by-product of some other agenda) or premeditated (insofar as the negative outcome, for some, is foreseen). The demise of the polar bear due to the impact of global warming in the Arctic is an example of the former. The displacement of local inhabitants from their land due to carbon sequestration schemes is an example of the latter [61].

Several other concepts are also relevant to environmental horizon scanning from a criminological point of view. Three of these look to the future: intergenerational equity, the precautionary principle and transference over time. Three other concepts address matters of justice, past, present and future: environmental justice (dealing with humans), ecological justice (where the focus is on ecosystems) and species justice (involving animals, and plants). Collectively, these concepts provide a values framework for assessing risks and harms as part of looking over the horizon [62•, 63].

While criminology that deals with climate change can find benefit from engagement in environmental horizon scanning [63], so as to anticipate potential environmental issues and crime problems associated with climate change, some attempts to do so have been accused of conceptual over-reach. Thus, in commenting on Farrell's [64] linking of droughts in the 1980–1984 seasons to the war in the Darfur region of Sudan, Southalan [65] cautions that complex issues should not be reduced simply or solely to climate change (or specific weather events). Similar reservations exist in regard to what is presently occurring in Syria, a conflict whose origins are seen to stem from a mix of climatic changes, adoption of neoliberal policies and radicalisation of politics [66]. While it is true that such claims require a degree of careful consideration, nonetheless, the association between global warming and changing social, economic and political circumstance is important. They certainly stimulate a series of important questions: do weather-related and resource-control events in Sudan and Syria foreshadow similar events and circumstances in other places around the world? In what ways is this violence linked to climate change? Is all violence the same? Who is to blame for which kinds of violence? Is the violence due to similar causes or are there specific drivers? In the light of accelerating global warming, is the fate of these countries, to be our fate?

Social Consequences of Differential Victimisation

The consequences of climate change have been associated with *differential victimisation* in which the poor and vulnerable suffer from the violence linked with climate change more than the rich and powerful [62•]. It is not the affluent who are losing their lands, struggling to make ends meet and being forced into climate-related migration. Likewise, it is the poorer countries, many of which have not contributed to global warming processes, which are bearing the brunt of the biophysical changes linked with climate change [67]. Powerful companies and their executives, and hegemonic nation-states and their leaders, are generally immune from the distributional impacts of climate change (that is, instances of harm that are

influenced by social situation and ability to marshal needed resources). They are likewise generally freed from having to pay recompense to vulnerable countries and population groups, or funding adaptive measures, even though they are the main contributors to the problem.

The nature and dynamics of environmental victimisation is also partly related to the bifurcation of crime that is occurring. The rich and powerful are using their resources to secure productive lands, restrict access to food and water, exploit the financial hardships of others and impose their own coercive rule over territory and infrastructure (private security agencies and private armies constitute a contemporary growth industry worldwide) [17•, 36, 68, 69]. Crimes of the less powerful are evident in crimes of desperation, and child soldiers and armed gangs will continue to flourish in conditions of welfare collapse and non-existent government support. Vulnerable people are being forced to flee their homelands and are frequently being criminalised for seeking asylum; others who stay end up fighting for dwindling resources in their part of the world. Communities are increasingly being pitted against each other, and industries against communities and current 'dog eat dog' policies and practices are contributing to profound ontological insecurities and fears that frequently translate into a 'fortress mentality' [60•]. In this context, law and order will be increasingly more difficult to maintain, much less enforce in other than repressive ways.

According to Mary Robinson, President of the Mary Robinson Foundation-Climate Change, and former Irish President and United Nations Commissioner for Human Rights, 'Climate change is a threat multiplier – it exacerbates poverty and water scarcity, it compounds food and nutrition insecurity and it makes it even harder for poor households to secure their rights'. To this list, we may well add the heightened threats of violence and crime. Moreover, she points out that 'In a world where climate change exacerbates the stresses of daily life on people already disenfranchised by poverty or social standing, radicalisation is very likely' [70]. The links between inequality, radicalisation and climate change are real and pressing [71]. Thus the crimes associated with the causes of global warming themselves beget further crimes—and, ultimately, none are immune from the effects of this violence.

Conclusions

This article has reviewed recent criminological and related literature on climate change and violence. As summarised in Fig. 1, criminological work has tended to focus on the consequences of climate change for criminal activity (i.e. the impacts of biophysical changes on social behaviour including violence) and the causes of global warming as themselves constituting a crime (in circumstances where there is foreknowledge of the harm stemming from certain practices). In each domain, the prospects do not look good.

A key conclusion is that ecocide—the human caused destruction of the environment—aptly describes the role of powerful interest groups in contributing to global warming. Those who are central in causing the problem are also those least likely (at least initially) to suffer the consequences of climate change. Violence and crime will pervade the lives of the less powerful and vulnerable people of the world. For the perpetrators of the harm, however, climate justice is yet to come. This, too, is part of the conundrum of climate change that is of major concern to criminology [58••, 62•].

Fig. 1 The climate change-crime nexus

Compliance with Ethical Standards This article does not contain any studies with human or animal subjects performed by the author.

Conflict of Interest The author states that he has no financial or personal relationships with any third party whose interests could be positively or negatively influenced by the article's content.

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