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OVERVIEW

Collective responsibility for climate change

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Abstract

Climate change can be construed as a question of collective responsibility from two different viewpoints: climate change being inherently a collective problem, or collective entities bearing responsibility for climate change. When discussing collective responsibility for climate change, "collective" can thus refer to the problem of climate change itself, or to the entity causing the harm and/or bearing responsibility for it. The first viewpoint focuses on how climate change is a harm that has been caused collectively. *Collective action problem* refers to an aggregation of individual actions which together produce an outcome that is not intended at the level of an individual action. It cannot be solved by any one agent acting unilaterally. Instead, climate change action must be enacted and supported by numerous agents. The second way to conceptualize climate change as a question of collective responsibility focuses on the collective entities that bear responsibility for climate change. As a global problem, climate change is linked to the realm of international politics, where states, governments, and intergovernmental organizations are the main collective entities. Other important agential collectives in terms of climate responsibility are corporations, including carbon majors who have produced the bulk of emissions. Climate change has also been theorized as a *structural injustice*, which combines elements from both the viewpoints on what is collective about responsibility for climate change.

This article is categorized under:

Climate, Nature, and Ethics > Ethics and Climate Change
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KEYWORDS

collective action problem, collective harm, collective responsibility, corporate responsibility, structural injustice

1 | INTRODUCTION

Climate change is a truly global problem that is linked to a vast number of agents across different countries. The effects of anthropogenic or human-induced climate change, which are dispersed both geographically and over time, have been caused collectively and cannot be addressed by any one agent unilaterally. Climate change actions and omissions impose burdens on some while benefitting others. The costs and benefits of the activities that cause emissions are

unequally spread across the globe and generations. The geography of some countries makes them more vulnerable to climate change impacts and the economic resources of a state will affect their capacity for adaptation.

Climate change can be construed as a question of collective responsibility from two different viewpoints: climate change being inherently a collective problem, or collective entities bearing responsibility for climate change. When discussing collective responsibility for climate change, "collective" can thus refer to the problem of climate change itself, or to the entity causing the harm and/or bearing responsibility for it. The first viewpoint focuses on how climate change is a harm that has been caused collectively. *Collective action problem* refers to an aggregation of individual actions which together produce an outcome that is not intended at the level of an individual action. It cannot be solved by any one agent acting unilaterally. Instead, climate change action must be enacted and supported by numerous agents. The second viewpoint has frequently been the focus of the debates over what should be done about climate change and by whom. It is standard practice to discuss the responsibilities of states, governments, intergovernmental organizations, corporations, and other collective agents.[1] But how do we identify the agency of those organized collectives that are responsible for emissions, and what does this mean for our practices of holding collective entities responsible?[2] While it is widely accepted that agential collectives (i.e., collectives that are themselves agents) can hold collective obligations, it is more controversial to attribute responsibility to non-agential collectives.

This article provides an overview of collective responsibility for climate change. Section 2 discusses the conceptual distinctions around responsibility that can help identify the specific challenges of addressing climate change. Section 3 examines the collective nature of climate change through the concepts of the collective action problem and *collective harm problem*. While doing so, it also looks at the responsibility of non-agential collectives. Section 4 explores collective responsibility of agential collectives, for example, highly organized entities, such as governments, corporations, and universities. Section 5 introduces the idea of climate change as a *structural injustice*, which combines elements from both the viewpoints on what is collective about responsibility for climate change.

2 | RESPONSIBILITY

"Responsibility" can be understood in many ways, with some of the most important notions being causal, moral, and legal responsibility. Moral and legal responsibilities are both forms of normative responsibility, meaning that there is a standard against which a subject is evaluated. While they do not require causal responsibility, such normative judgments are often influenced by causal considerations. A causal relation holds between something that happens or exists and the thing that partly or solely gave rise to it. A cause does not need to be an agent and can, for instance, be a natural phenomenon. Even so, although a hurricane or a tsunami can cause damage to persons or property, they cannot be held morally responsible for the destruction. It is standard to assume that moral responsibility implies moral agency. Only moral agents can, for instance, be held responsible for the socio-political or economic factors behind poor local infrastructure that increases the number of casualties when a hurricane or tsunami strikes.

2.1 | Causal responsibility

Causal responsibility plays a significant role in climate responsibility debates for several reasons. In terms of absorbing greenhouse gases (GHGs), the natural carrying capacity of the atmosphere has long been exceeded, meaning that there are no harmless emissions (Broome, 2019). Increased emissions lead to increased temperature effects and more harm. Therefore, when a state reduces its emissions, for example, it helps to reduce the ultimate level or risk of harm, regardless of what others do (Farber, 2008). As climate change harms encompass much more than just economic losses or increased healthcare costs, a broad understanding of loss and damage is required to assess potential climate impacts more comprehensively (McShane, 2017).

In international politics, the key question is to what extent industrialized states should provide compensation or incur adaptation or compensatory mitigation responsibilities in relation to their past GHG emissions (García-Portela, 2020; Meyer & Roser, 2010). On the legal side, many cases have already been brought against both state and corporate collective entities based on their emissions. The potential pool of defendants in climate change cases is vast. Marketers and extractors of fossil fuels are obvious targets, but corporations that manufacture products that consume fossil fuels and emit GHGs, such as car manufacturers and energy companies, could also be potential defendants (Olszynski et al., 2017). However, legal cases that have tried to prove analogies between climate change and other

environmental damage have run into difficulties because of the dispersed causal effects at work in climate change (Smith, 2013). In classic tort cases the victim and injurer are clearly identifiable, but with climate change we should accept that the harms are much more complex and relax the demands for a precise matching between individual wrongdoing and harm for finding liability (Farber, 2008). While the legal debates and implications of climate change are important, this review article focuses primarily on moral responsibility.

Aside from assigning responsibilities based on past emissions, another important question links causal responsibility to moral responsibility for climate change: Who should be allowed to produce emissions from this point on and in what volume? For example, Meyer and Roser (2006) have argued that previous above average emissions of richer countries cannot be used to justify a continuation of emissions at the same levels. Future emissions matter not only for international justice, but also for intergenerational justice. Shue (2021) argues that those alive today should make robust efforts to address climate change because it is very likely that future generations will face much greater climate burdens and dangers than us. Furthermore, these dangers are currently unlimited, especially if tipping points are crossed, leaving future generations with even more risks.

2.2 | Moral responsibility

While many discuss blame attached to a past wrongdoing when bringing up moral responsibility (an agent is to be blamed for something they did or omitted to do), moral responsibility can also refer to the normative responsibilities that we have, which can come with no blame attached. Normative moral responsibilities can be divided into general and special duties (Shue, 2017). General responsibilities or natural duties are owed to all human beings or other broad categories, such as all sentient beings. Special responsibilities or duties, in contrast, are owed to specific others based on our causal and other relations with them, for example, family members, relatives, friends, citizens, customers and shareholders. A duty is positive when it is toward committing a certain act and negative when it is about omitting to do something. Shue (2017) provides examples of how these distinctions can be found in widely shared common-sense principles of morality. Avoiding needless harm to others is a general duty (owed to everyone, regardless of relationships) that is negative (an omission) and forward-looking (in the sense that it is focused on what is yet to happen). In contrast, cleaning up your own mess is a special duty (owed to those affected by the mess) that is positive (requires action) and backward-looking (in the sense that it is based on a causal role). Failing to uphold the principle of do no harm will frequently translate to the responsibility of fixing the mess you have caused. The polluter pays principle (PPP) is an example of this type of responsibility and it can be either attached to blame or come without it.

In the context of climate change, attributions of responsibility grounded in backward-looking considerations address questions such as what is the responsibility of those who have produced the most emissions. Responsibility can also be grounded in considerations that have nothing to do with the past, such as who can afford to act to mitigate the negative effects of climate change or who can do it in the most cost-effective way. Such prospective responsibility flows from the position or the capacity one has to improve the situation; thus, the basis is an opportunity to provide help (Shue, 2017). More generally, duties only exist when there is a corresponding capability for their fulfillment. Moellendorf (2014) rejects responsibilities based on historic emissions and instead argues that mitigation and adaptation costs should be based on current capacities: affluent states with high human development measures should restrict their emissions and fund renewable energy infrastructure in poorer countries (pp. 164–180).

Many theorists have remarked on how the distinctly collective characteristics of the climate change problem might require new kinds of moral tools. For example, Jamieson (2010) notes that climate change harms do not share the characteristics of paradigm moral problems around which our standard moral theories have been built (i.e., being able to clearly identify an individual who acts intentionally to inflict identifiable harm on another identifiable individual). More generally, ethics based on individualistic ideologies have failed to observe how human beings affect each other in the many communities in which they are embedded (Shue, 2021, p. 60). Another example is Gardiner (2011), who argues that our ethical theories have failed to address climate change, just as our existing economic and political institutions have been ineffective. Carbon dioxide will take thousands of years to completely neutralize, so the impact of our current emissions will be felt far into the future. Gardiner sees the intergenerational asymmetry as the most conspicuous problem: future generations will be most affected by climate change, yet they cannot influence climate policy choices. Or as Heath (2021) puts it, while individuals benefit from the consumption of fossil fuels, their costs are diffused across time and geography and are usually borne by others in the future, which results in the absence of the most important interest group (p. 81).[3]

Arguments based on moral considerations can be found everywhere. To give a practical example from economics, when externalities (costs borne by others) are included in the price ("internalizing an externality"), the underlying principle is that those who have contributed to a problem bear the burden of implementing a solution (Shue, 1999). This is long overdue when it comes to fossil fuels. After all, they are inexpensive in part because of subsidies, but also because the harm that they cause has not being factored into their overall cost. Not only do externalities produce misaligned incentives, but it is also arguably unfair to permit ostensibly costless pollution, particularly when the costs of emissions are experienced by third parties (Mintz-Woo, 2022).

3 | THE COLLECTIVE NATURE OF THE PROBLEM

The climate change problem is inherently collective. Individual people and collective agents behave in ways that benefit themselves or the group but generate GHG emissions as an unintended (although foreseeable) side-effect. These emissions build up in the atmosphere over decades and centuries and, together with other emissions, cause climate change harms. To succeed, climate change action must be collective, as the problem is just too vast and complex for even the most powerful agents to tackle unilaterally. The collective nature of the climate change problem has been conceptualized in the literature most prominently as either a collective action problem or a collective harm problem. In collective action problems, an aggregation of individual actions together produces outcomes that are not intended at the level of an individual action. Collective harm problem is a species of collective action problems where individual actions are perceived to make no difference.

3.1 | Collective action problem

Collective action problems refer to "outcomes produced by the aggregation of independent individual actions where these actions are not intended to produce that outcome, such as causing climate change through cumulative greenhouse gas emissions" (Schwenkenbecher, 2021). As the atmosphere is a global commons, states do not benefit from taking unilateral action to reduce emissions. Heath (2021) argues that issues of intergenerational and distributive justice do not constitute the core of the climate change problem; rather, they merely follow on from that climate change is a collective action problem (p. 149).

In collective action problems, individual rationality leads to collective irrationality. Game-theory provides standard solutions to collective action problems as it offers tools to prevent freeriding and widespread sub-optimal outcomes. The game-theoretic approach to rationality is also discussed by economists as a possible solution to encourage support for international agreements on climate change among sovereign states (e.g., Chander, 2018). However, the applicability of game-theoretical models to climate change has been questioned because there is no possibility for a win–win situation due to the lack of possible reciprocal cooperation between past and future generations (Gardiner, 2011; Sagoff, 2011). Gardiner (2011) stresses that the intergenerational structure of the climate change problem makes it fundamentally different from intragenerational games, as the time scale and gradual changes undermines the motivation to act now, resulting in generational buck passing. According to Sagoff (2011), those who are alive today may struggle to see any direct benefit from reducing emissions and are, in fact, likely to lose more as individuals (but there is disagreement on this, see Broome, 2012). Additionally, Hourdequin (2010) has pointed out that commons problems presuppose that individual agents do not influence each other's decision-making or thinking in morally salient ways, but instead seek to maximize their own advantage as isolated, rational actors, an assumption that can be challenged.

3.2 | Collective harm problem

Climate change is often described in terms of a collective harm problem, which could be conceptualized as a subcategory of collective action problems. A collective harm problem involves agents acting in a way that collectively causes harm (or fails to prevent harm), but no individual act appears to make a difference on its own (Nefsky, 2019). Many climate ethicists have outlined the essence of the problem to be that when it appears that acting in a certain way makes no difference to an outcome, it is difficult to see how we might have a reason to act or choose to refrain from acting in such a way (e.g., Cripps, 2013; Cullity, 2015; Killoren & Williams, 2013; Sandberg, 2011; Spiekermann, 2014).

Johnson (2003) argues that it would be a mistake to view it as our obligation to unilaterally reduce our individual burden on the climate, as this has little chance of making any difference in the absence of a collective agreement on GHG reductions. Instead, we should seek a cooperation scheme to address the collective action problem.

If individual actions appear to have no effect on an outcome, it is difficult to see how individuals might take on climate-related duties.[4] The seeming mismatch between the enormous scale of climate change and the small scale of individual actions leads to duties either being under-demanding (requiring very little from an individual) or over-demanding (trying to make a difference by making large sacrifices) (Pinkert, 2018). It should be noted, however, that there is disagreement over whether individuals do make a difference. Broome (2019) has argued that the cumulative nature of the emissions and the very long time they stay in the atmosphere, combined with the butterfly effect, means that all individual emissions are expected to cause harm in the long run. Hourdequin (2010) has suggested that changing the framing of climate change from atomistic to relational problem can help us to appreciate how our personal choices have communicative and social functions, which means that individuals affect each other.

In any case, viewing climate change as a collective harm problem has led to a focus on collective obligations (e.g., Cripps, 2013; Cullity, 2015; Isaacs, 2011; Pinkert, 2018; Sandberg, 2011; Wringe, 2020), which have been raised as a possible solution to the seeming lack of capacity of individuals to halt climate change harms: the obligation is allocated to a group of individuals who could collectively make a difference. For instance, Cullity (2015) suggests that our relation to climate change might be one where a collective acts wrongly although no individual member does so. Although some writers defend a global obligation to act on climate change that fall on humanity as a whole (Wringe, 2020), most wish to ascribe collective obligations to more delineated, unorganized groups. An influential account has been provided by Cripps (2013), who identifies three non-agential collectives with climate-related responsibilities: *The Young*, *The Able*, and *Polluters*. The individuals within each category are required to organize themselves collectively to act on climate change.

3.2.1 | Collective duty to organize

If the only way to respond to a morally important duty is through collective action, but there is no collective agent to respond to that duty, the natural first step would be for individuals to organize themselves collectively to facilitate a response to the problem. Held (1970) argued influentially that a group of people can be held responsible for failing to cooperate with each other to prevent a harm when it is obvious to the reasonable person what the required action would be and the expected outcome of the action is evidently favorable. Several writers have suggested that individuals have a duty to do just that in relation to climate change. For instance, Shue (2021, p. 119) contends that making greener consumer choices is not enough, but that to make any significant difference, individuals "need to build social movements to attack directly the economic and political structures that with all their influence and guile are blocking comprehensive political measures to reduce carbon emissions." Similarly, Cripps (2013) argues that an individual's primary duty in relation to climate change is to try to get governments and other collective agents to take urgent action and to bring about collective action in situations where no effective collective agency exists. The basic idea is that if a collective-level solution is required, then individuals should try to realize such an outcome by coming together and organizing themselves accordingly.

As mentioned, Cripps (2013) discusses the responsibility of three kinds of non-agential collectives using the labels *The Young*, *The Able*, and *Polluters*.[5] Cripps (2013, p. 60) assigns a duty to individuals who belong to categories such as high polluters: they must organize themselves in such a way that they can collectively respond to climate change. Björnsson (2021) describes this approach as taking the activist's perspective: individuals are contributing to the development of a collective solution. However, he notes that this position seems to be contradictory, as it tries to ground individual obligations to contribute in a collective capacity to make a difference, even when no individuals can make a difference on their own. Furthermore, the collective the obligation is assigned to is not an agent, so it is unclear how such collectives could have obligations. Björnsson does present a solution: although such groups are not moral agents, they can have obligations because their members are moral agents. As for individuals' limited capacities, even though an individual might not affect the likelihood of a successful collective solution materializing, the basis for the shared collective obligation is a recognition that it is possible to answer the issue collectively. If an individual is appropriately invested in that they care enough, they are motivated to contribute to a collective solution when the contributing actions are fair and efficient.

Because climate change mitigation can only be secured through cooperation, *The Young* are mutually dependent on each other to mitigate the risk to their capabilities for living a flourishing life (Cripps, 2013, pp. 43–57). The younger

generations across the globe have a collective self-interest in mitigation and a duty to act together to secure it. Mitigation is an end attained for all members of the collective, so an active subset could achieve the goal for the benefit of all. *The Young* are of course also victims of the damaging effects of climate change. However, Cripps argues that in some situations the co-operation of victims is required to save them. Members of *The Able* are identified by their ability to contribute to adaptation and mitigation measures at a cost they can manage. According to Cripps (2013, p. 61), a set of human beings have a duty to cooperate to prevent the serious suffering of others if the cost for each person is not significant. *The Able* are not mutually dependent on each other like *The Young* are. Although there is overlap between the categories, some have little or no collective self-interest in climate change mitigation, as the more serious impacts are projected to emerge after their lifetimes. (Cripps, 2013, pp. 58–68). *Polluters* emit GHGs at a level that is not sustainable. Cripps (2013, pp. 68–77) argues that it is reasonable to expect *Polluters* to be aware of the harm caused by their individual emissions and that their overall consumption patterns could be reduced without losing a fundamental interest. The primary burden on mitigation falls on *Polluters* due to the no-harm principle and they bear the full weight of complying when it comes to adaptation and compensation. *The Able* come next: their duty is to avert the rest of the harm, or at least compensate for it. They also have a duty to "pick up the slack" if *Polluters* fail to act. *The Young* are only responsible for the mitigation that cannot be assigned to the *Polluters* (pp. 77–82). Of course, membership can overlap, but the idea is that the arguments are independent and complementary.

A difficult question for accounts based on collective obligations is what each individual should do to bring about the collective solution and when can they justifiably give up. Maltais (2013) argues that political duties cannot be too demanding for individuals: we should vote for green candidates, but not much more can be demanded of us, due to the low likelihood of success (Hourdequin (2010) disagrees). Some argue that collective accounts also face the problem of the disappearance of individual duties based on others' likely inaction (Cullity, 2015; Dietz, 2016; for a contrasting view, see Karnein, 2014). Dietz (2016) argues that if a collective has an obligation to act in a certain way, an individual has a corresponding reason to do their part only if others are doing their parts. This issue becomes even more pronounced in cases of unorganized, non-agential collectives in which individual emitters justifiably think that there will *not* be enough others to make the collective action possible (Wringe, 2020). However, it is debatable if this problem applies to climate change, as climate harms and risk increase with total emissions (Broome, 2019).

4 | RESPONSIBILITY OF COLLECTIVE AGENTS

The climate ethics literature has identified states, governments, and intergovernmental organizations as the main collective entities involved in the debate over responsibility for climate action. Other prominent agential collectives include corporations, universities, and other organized collectives (Umbers & Moss, 2021). In recent years, the United Nations Framework Convention on Climate Change (UNFCCC) has broadened its focus from the development of national emissions targets toward a model that includes a wider group of nonstate actors, including cities, sub-national governments, and businesses (Hale, 2016).[6]

Responsibility requires agency. Agential collectives are organized collective entities, of which corporations are a frequent example. The normatively bound roles of members in an organized group are embedded in the organizational structure (Ritchie, 2020). French (1979) influentially argued that collective agents have established a decision-making structure and a means of converting their decisions into actions. Their internal decision structure must include two components: the rules that cover procedures and policies, usually in the form of a corporate policy statement, and an organizational flow chart, which maps the corporation's internal roles and managerial lines. List and Pettit (2011) argue that to ensure agency, an entity must have representational states that describe how things are around it, motivational states that identify how things should be, and the capacity to process both of these states to facilitate interventions when there is a mismatch between the two. In addition, an entity requires a minimum degree of autonomy and rationality.

When philosophers discuss the obligations and duties that fall on collectives, they can mean either that the collective entity is the bearer of the obligation or duty, or that these distribute to the individual members (Wringe, 2020). This matters for questions of who we are holding responsible. For example, is a state's responsibility just the sum of the responsibility of its citizens; does holding a state responsible imply that its citizens are responsible? Some authors argue that collective moral obligations distribute to the members of a collective agent by virtue of their institutional roles. Miller (2011) argues that the responsibility of a government to act on climate change should be understood as the joint moral responsibility of its members. In contrast, when an obligation falls on everyone collectively, individual duties are derivative rather than distributive, meaning that the responsibility is borne by the collective itself (Wringe, 2020).

Francis (2021) argues that even when costs of climate action distribute to citizens through taxation or other means as duties of citizens, they are not personally accountable for a moral wrongdoing, that is, the moral responsibility is non-distributive. This is because the moral failures of states are very different from those of their citizens: states fail through their institutions, infrastructure, and policies.

4.1 | States and governments

States are widely perceived as the main actors in climate change. As a global problem, climate change is inextricably linked to the realm of international politics, where states are the core political entities, agents that take—or fail to take—action. For instance, states are parties to the international treaties within the UNFCCC. Correspondingly, climate justice literature and climate ethics have focused on the responsibilities of states (e.g., Broome, 1992, 2012; Caney, 2012; Moellendorf, 2012; Shue, 1992, 1999, 2014; Vanderheiden, 2008). Debates over responsibility for climate change are not solely theoretical, as they have very real practical implications. To give a prominent example, parties to the UNFCCC agreed that because industrialized countries have produced most of the GHG emissions, they should also lead the efforts to tackle climate change in response to concerns over equity (United Nations, 1992). Despite this unified approach, there has been ongoing debates over who should pay for the mitigation and adaptation costs and to what degree. Moreover, the parties involved have continued to question if compensation is required and by whom. In other words, there is disagreement between states within the UNFCCC over how the principle of "common but differentiated responsibilities" should be realized. This burden-distribution problem of justifying who should pay for climate action—and how much—has been described as the primary obstacle to the development of an effective climate regime, and as the central question of climate justice for scholars and activists (Vanderheiden, 2011).

Determining responsibility for historical emissions is a complicated issue for global justice. Many philosophers have argued that the industrialized, rich states that generate most of the emissions should bear the brunt of the mitigation and adaptation costs as a matter of distributive or corrective justice (e.g., Gardiner & Weisbach, 2016; Meyer & Roser, 2010; Shue, 1999, 2021; Vanderheiden, 2008).[7] Singer (2002) argues that distributive justice should allow poor nations to produce more emissions. The aim of distributive justice is to offer a fair allocation of costs and burdens that is based on the principle of equity. Under this system, the atmosphere (i.e., emissions shares) would be justly apportioned between countries (and present and future generations). In contrast, corrective justice assigns costs based on a liability for historical emissions that should be remedied. Corrective justice requires compensation for damage inflicted, but it does not presume the existence of a common resource. Distributive justice, on the other hand, is based on the presence of a common resource, but does not presume any damage beyond deprivation of an opportunity to use the said resource (Gardiner, 2004). While the requirements of distributive and corrective justice often overlap, they can also be in conflict. For example, Berkey (2017) discusses how the poor citizens of a previously high-emitting country should not bear burdens over behavior of people they had no control over.

Shue (1999) argues that those states that have both historically and currently been high emitters should correspondingly accept greater burdens. Different actors can, after all, have unequal burdensin terms of bearing the costs for addressing harms because of their differing contributions to the problem. Considerations of fairness can mean that wealthy industrialized states should initially cover the costs of climate change action, as they have taken an unfair advantage by imposing costs on others. Agents can be held responsible for the harmful effects of their actions even if the effects were unintended and to some degree unavoidable. Shue points out that considerations based on equity go further than those based on the PPP, which is satisfied if emissions costs are translated into prices. In contrast, Moellendorf (2012) argues that assigning fault to states for historical emissions is problematic, partly because assigning responsibility to states would in practice mean that the costs and the responsibility devolve to the citizens through taxes, many of whom cannot be personally at fault for those emissions, as they were born after they were made. Caney (2005) raises the possibility that states might not be the correct unit of analysis for assigning climate-related responsibilities in the first place, and that the responsibilities of other agents, such as individuals and corporations, might not collapse into it.

The climate-related responsibilities of states are usually settled in terms of justice, but there are exceptions. For example, Broome (2012, pp. 97–116) argues that states must mitigate emissions as part of their general duties to promote policies for the good of their citizens. He calls these *duties of goodness*, arguing that the obligation of governments to reduce their emissions is primarily a duty to promote the general good. Governments should therefore carefully compare the costs and benefits of their planned climate policies before their implementation. Broome also acknowledges

that governments have *duties of justice*, that is, special duties owed to certain agents, such as low-income farmers who have been harmed by the emissions of rich countries. However, the main emphasis of Broome's argument is that governments (with control over significantly more resources than individuals) have duties to promote the overall good, which is an obligation that does not fall on citizens. Broome (2012) argues that it is the duty of citizens to do what they can through political action to get governments to fulfill their climate change obligations (pp. 73–74). Similarly, Ludwig (2020) argues that because the most effective thing that an individual can do is to try to influence climate policy, our primary minimal duty is to contribute to collective efforts that focus on prompting effective government responses to climate change. Cripps (2013) calls these *promotional duties*: duties to promote collective action (see Section 3.2.1). Killoren and Williams (2013) suggest that citizens within industrial democracies constitute a group agent that could be morally obligated to reduce its emissions through governmental actions.

As discussed above, the debates on climate change frequently present the following position: industrialized states must take responsibility for their policies that have produced, and continue to produce, high emissions. What is less clear is how states are appropriately thought of as responsible; in other words, how we should conceptualize the state as a collective and as a moral agent? States can be designated as either citizen-inclusive (i.e., the democratic state acts in the name of its citizens) or citizen-exclusive (i.e., the government understood as including all the elected office-holders and employees in the key branches of government). For example, Parrish (2009) argues that democratic states are authorized to act in the name of their citizens. While citizens can mitigate their responsibility for their state's policy choices, it is difficult to eliminate it. He likens this to the responsibility of shareholders; citizens own their democratic state in a certain sense. Likewise, Stilz (2011) argues that the citizens of democratic states can share liability for what their state does. While the conceptualization of a state that includes its citizens has been the dominant model, Lawford-Smith (2019) argues that states are better understood as citizen-exclusive collective moral agents. Very broadly, her argument identifies the departments and agencies of the state as the loci of its agency, rather than the voters. While the voters do not form a collective agent, their preferences and desires still have explanatory significance and continue to inform the actions of the state (p. 95).

The question of how we conceptualize states as collective entities has, among other issues, a direct bearing on climate change responsibility. Pasternak (2021) describes policies as a product of "massive collective action," where citizens intentionally participate in their democratic state by willingly orienting themselves around the state's authority. The associated political obligation that is thus created means that the citizens in democratic states should accept a share of the remedial liabilities that flow from the state's inadequate climate policies. While there may be no blame, the responsibility of the state is to be distributed to its citizens. This point is not purely theoretical. Pasternak (2013) argues that if industrialized states expressed a readiness to accept a duty to fund compensation and support mitigation schemes in poorer states, the funds required would likely be paid by the citizens of the industrialized states through higher taxes or a reduced provision of public goods and services. Lawford-Smith (2019) denies that moral responsibility is to be distributed to ordinary citizens in democratic states, or that they are culpable for their state's harmful or unjust policies. Her claim is not that citizens can excuse themselves from any culpability by voting or protesting against a certain policy; instead, she argues that citizens are almost never morally implicated in their state's actions. The state, which is understood broadly as the government (including all public employees), carries the responsibility as a collective agent.

Baer et al. (2010) argue that it is problematic to assume that states are unitary actors, or that governments represent the interests of all citizens in climate negotiations. Instead, they suggest that climate rights and responsibilities should be explored from the viewpoint of their impacts on individuals or classes of individuals. After all, even though emissions rights and responsibilities are applied to the state, the effects on the state's citizens will vary according to their economic class and how equal the state is.

Lawford-Smith and Eriksson (2020) do not view states solely as proxy agents for all the emitters within its borders, that is, in the sense that the combined emissions of all actors can be attributed to the state. Instead, they argue that states are primary culpable emitters via the production of direct emissions through their branches, such as the military, and through companies they own, either partially or fully. In addition, indirect emissions are produced by certain state policies, including those linked to public transportation infrastructure. Consequently, Lawford-Smith and Ericsson argue that the responsibility of states to mitigate climate change is based on their culpable involvement in creating the problem: states have a strong obligation to rectify the harm, as obligations stemming from contributing to a harm are stronger than those that are only borne out by the capacity to take action.

4.1.1 | Intergovernmental organizations

Although there are many intergovernmental organizations that have acted on climate change, including the United Nations, the World Bank, the European Union, and the African Union, many commentators have been critical of the overall international and global coordination of climate action. For example, Gardiner (2011, pp. 24–29) has lamented that in the absence of an effective system of global governance, the existing institutions appear inadequate in their management of climate change. He has suggested that a global constitutional convention focused on future generations is required to address the tyranny of contemporary generations (Gardiner, 2014). Broome and Foley (2016) have suggested that a new international financial institution, a World Climate Bank, is needed to finance large-scale changes to the world economy and shift resources out of conventional investment and into the reduction of GHG emissions.

In addition to being assigned responsibilities, intergovernmental agencies and their spokespersons can also ascribe climate-related responsibilities to other collective entities. For example, the United Nations Office of the High Commissioner for Human Rights has stated that businesses are accountable for their climate impacts and have a duty to participate in climate change mitigation and adaptation efforts (Toft, 2020).

Erskine (2022) argues that while even rich and powerful countries cannot significantly mitigate climate change by acting unilaterally, they have moral responsibilities to coordinate effective responses in collaboration with other countries. The joint action required is sophisticated and involves deliberation, negotiation of common aims, open sharing of resources and research, and careful coordination of actions. By working together, countries can enhance their capacities through supporting, strengthening, and reforming intergovernmental organizations, such as the UN, so that they can fulfill their mandates regarding mitigation. According to Erskine, the existing intergovernmental organizations have been unable to respond effectively, or they are unfit for purpose. Therefore, countries have a shared responsibility in the short-term to help establish and then contribute in an ongoing capacity to an informal, purpose-driven "coalition of the obligated." Erskine states that countries can take impactful action by first establishing a coalition and then collaborating with other institutional agents to identify alternatives to existing solutions.

4.2 | Corporations and other for-profit businesses

Assigning mitigation duties to corporations is not necessarily controversial when the focus is on the development of low-emission activities (Toft, 2020). The overwhelming scientific consensus and the severity of the threat suggest that the precautionary principle alone should suffice for the inclusion of climate change mitigation in corporate responsibility (Hormio, 2017). Shue (2017) argues that while carbon producers do not have any special responsibilities toward future generations, like all other agents they nonetheless have a general, negative responsibility not to jeopardize decent living conditions for future societies. This responsibility to avoid harm constrains corporations' responsibilities to shareholders. Naturally, there are notable differences between companies and corporations in terms of the resources and capacities they have to go beyond the minimum requirements to address climate change. In this way, their abilities will affect their obligations. A business should go carbon neutral if it can meet the costs and maintain its competitiveness (Hormio, 2017).

Climate change has been conceptualized as a human rights issue that threatens, for example, the right to life (Caney, 2010). The UN Human Rights Council passed a resolution in 2008 asserting that the threat posed by climate change to people and communities around the world is immediate and far-reaching, and that it affects the full enjoyment of human rights. Toft (2020) argues that although states are the primary protectors of human rights, the corporations that have contributed to climate change are also responsible for the negative impacts on human rights. The duties of corporations regarding climate change should not be solely reduced to mitigation. Corporations also need to be involved in adaptation measures as well to decrease their own emissions. These duties are led by a corporate responsibility for human rights toward those vulnerable to climate shocks. The extent of these duties depends on the power, collective abilities, privilege, and interest of corporations. Furthermore, Toft argues that some corporations should also compensate for the loss and damage caused by their emissions. This type of responsibility has been highlighted in human rights litigation cases that have based restitutions for climate change harms on causal responsibility for historical emissions and possible culpable knowledge.

The vast majority of emissions have been produced by industrialized countries. Furthermore, two-thirds of historical emissions can be directly linked to only 90 industrial carbon producers (Heede, 2014). Shue (2021) notes that an additional complication for corporate responsibility is that many of the carbon majors are either state-owned or state-

controlled, or both (p. 122). Examples include Norway's Equinor, Russia's Gazprom, and Saudi Aramco. This means that corporate and state responsibilities sometimes merge. Shue (2017) argues that carbon majors have incurred a positive, special, and backward-looking responsibility with regard to climate change by knowingly continuing activities that have been identified as harmful. These actions have translated to obligations to finance adaptation measures and contribute to compensation for damage and loss that is in proportion to their conscious contribution to emissions. Moreover, Shue claims that carbon producers should undertake to do more than just avoid further harm and compensate for harm already caused as they have the resources, expertise, and political influence to actively participate in the transition toward clean and safe energy. Collins (2020) argues that the failure of states to regulate corporations away from high-emitting actions is an injustice, which has resulted in higher profits for carbon majors, who have thus incurred duties from benefiting from an injustice. According to Smith (2013), since the damage caused by climate change is unlike the harms associated with other airborne-emitted substances that fall under the PPP, the challenge is to find new ways to understand how corporations can be deemed responsible for these climate change harms.

States are responsible for introducing new emissions treaties and legislation that changes the business environment and makes it more feasible for corporations to invest in clean technology and other mitigation techniques, despite the additional costs. However, major fossil fuel companies have been actively engaged in lobbying activities against regulations and occupied leadership roles in influential U.S. trade associations (Frumhoff et al., 2015). Arnold (2016) argues that corporate political activity to defeat climate legislation cannot be ethically justified because theories about the legitimate role of corporations in society do not provide a basis for such lobbying activities. Frumhoff et al. (2015) depict these tactical choices as the industry creating a self-fulfilling prophecy: in the absence of carbon regulation, companies maximize shareholder profits by continuing to invest in fossil fuels and fund their research and development. It can be argued that the corporations involved are responsible for climate harm in virtue of their lobbying efforts, and this retrospective responsibility could have generated prospective responsibilities to compensate for ongoing and future climate harm (Hormio, 2017). The fossil fuel industry has also employed tactics adopted from the tobacco industry to manufacture doubt around climate science (Oreskes & Conway, 2010). Corporate-funded disinformation has played a significant role in delaying effective climate change mitigation action. McKinnon (2016) argues that despite the real urgency posed by the possibility of irreversible climate change, action has been delayed in part by disinformation that has generated mistrust between scientists and the public; thus, a case could be made for the introduction of emergency measures to prohibit industrial climate denial via legal means. Shue (2021, pp. 128–130) points out that the capital investment into greater fossil-fuel production through exploration is enabled by those banks, hedge funds, and other financial institutions who loan money to fossil-fuel companies. Such destructive banking practices should not go unchallenged.

5 | STRUCTURAL INJUSTICE

Recently, the theorizing about climate change responsibility has focused increasingly on the systemic nature of the problem (e.g., Eckersley, 2016; Sardo, 2020; Schwenkenbecher, 2021; Whyte, 2017). This literature combines elements from the two viewpoints on collective responsibility discussed in this article, as it highlights how climate change injustices are produced by the actions of groups of individuals related to each other through societal and institutional connections, and how corrective action is therefore required at the institutional, structural level. Many of these accounts utilize Young's (2011) influential account of structural injustice as their starting point and critically engage with her "social connection model" of political responsibility. Young (2011) argues that with climate change and other structural injustices, we should evaluate the background conditions that produce structural processes, and not isolate the perpetrators, as such responsibility is shared and can only be discharged through collective action (pp. 103–105). This approach to responsibility is focuses on what we can and should do from now on to prevent future structural injustice, without discussion of blame for past action or inaction.

According to Eckersley (2016), the primary structural injustice of climate change is that the worst impacts will be felt by many of the least economically affluent communities, despite the fact that they have not contributed significantly to increasing the problem. The marginal social structural position of these communities exposes them to most of the risks that are generated by the social structures, with very few benefits. The added injustice is that due to these structures, these communities are placed in a particularly weak position to coordinate the changes necessary to reduce their vulnerability. Whyte (2017) argues that we should not ignore historical injustices and how they have led to increased vulnerability to climate change harms for indigenous peoples. The injustice in their vulnerability is two-fold: the same institutions that facilitate carbon-intensive economic activities also interfere with indigenous peoples' capacity

to adapt to adverse climate impacts. Although conceptualizing climate change as a structural injustice is a relatively new strand of climate ethics, the historical-structural characteristics of the problem have previously been noted by some. For example, Shue (1999) observes that the contemporary surroundings and standards of living in industrialized states are still affected by the economic pursuits of the society's predecessors, meaning that the current generations are continuing to benefit from earlier industrial activity. As all generations are participants in enduring economic structures, Shue argues that the benefits and costs, as well as rights and responsibilities, pass through generations.

Schwenkenbecher (2021) distinguishes the broad, aggregative sense of a collective action problem (discussed in Section 3.1) from genuine forms of collective action, which are either actions of group agents, cooperative actions (highly interdependent collaboration between individuals), or *distributive actions* (individuals intentionally contributing to a shared goal). She suggests that the last one is the most relevant for understanding prospective responsibility to address structural injustices. According to her, individual can have massively shared obligations to contribute to large-scale distributive collective action, such as mitigating climate change, as long as there is some existing campaign that promote distributive actions and we share a belief that it is likely that some persons share the intention to contribute. Zheng (2018) argues that individuals are responsible for structural injustices through their social roles, and an understanding of these roles helps to identify why individuals are accountable, what they are accountable for and how much of an obligation they should assume.

6 | CONCLUSION

Although individual responsibility has consistently been the dominant ethical framework, climate change, and other global problems have challenged this. The inherently collective nature of the phenomenon means that the problems posed by climate change must be met with collective action. Investigating the concepts embedded in collective responsibility can help us to get a clearer view on the moral and practical issues involved.

The collective nature of the climate change problem has been conceptualized in the literature in many ways, most prominently as either a collective action problem or a collective harm problem. In collective action problems, an aggregation of individual actions together produces outcomes that are not intended at the level of an individual action. Individual agents behave in ways that benefit themselves or the group but generate GHG emissions as an unintended (although foreseeable) side-effect. These emissions build up in the atmosphere over decades and centuries and, together with other emissions, cause climate change harms. Collective harm problem is a species of collective action problems where individual actions are perceived to make no difference, which has led to a focus on collective obligations. However, there is disagreement over whether individual acts can make a difference.

The climate ethics literature has identified states, governments, and intergovernmental organizations as the main collective entities involved in the debate over responsibility for climate action. The way states are understood as collective entities has a direct bearing on climate change responsibility, with commentators disagreeing over whether collective duties distribute to citizens. Other prominent agential collectives include corporations, universities and other organized collectives, which have only begun to be properly included in climate ethics debates. Recently, the theorizing about climate change responsibility has focused increasingly on the systemic nature of the problem. The literature on climate change as a structural injustice combines elements from the two viewpoints on collective responsibility discussed in the article, and highlights how action is required at the institutional, structural level.

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Säde Hormio: Conceptualization (lead); formal analysis (lead); writing – original draft (lead); writing – review and editing (lead).

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RELATED WIREs ARTICLES

Climate change and individual duties

ENDNOTES

[1] The terms "state" and "country" are used synonymously throughout this article.

[2] Insofar as they are agents, they are collective agents: this is compatible both with a reading on which they are agents (the actions of which are constituted by the actions of groups of agents), and a reading on which they just are collectives (i.e., groups of agents).

[3] Those who are owed collective action on climate, such as young people and future generations, or the communities most at risk from adverse climate effects, can also be defined as collectives.

[4] For an overview of the issues, see Fragnière (2016).

[5] These *should-be collectives* are a set of individuals who would constitute a collectivity, were they to espouse some goal(s), which they have a moral duty to promote (Cripps, 2013, p. 60).

[6] This increased focus on middle-actors is also evident in the latest IPCC reports.

[7] For criticism, see Gardiner and Weisbach (2016).

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