Green Votes not Green Virtues: Effective Utilitarian Responses to Climate Change

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Implementing strategies to address climate change confronts us with an enormous collective action problem. Dale Jamieson argues that in order to avoid large-scale defection and, therefore, the collapse of any cooperative effort to curb climate change, utilitarians should become virtue theorists. As a tool to combat climate change, virtue change faces severe obstacles. First, the non-contingent green virtues envisioned by Jamieson are highly implausible. Second, even if such virtues could function, their inculcation would take too long to make the approach viable. Third, given its inherent inflexibility, virtue change is ill equipped to deal with the great scientific uncertainty created by climate change. To combat climate change utilitarians are well advised to look elsewhere: green votes and state sanctions.

I. INTRODUCTION

In the absence of intervention on a monumental scale anthropogenic climate change will have devastating consequences. While it may no longer be possible to halt climate change altogether, a variety of strategies are available to slow the process and avert catastrophe. The most salient of these strategies is to reduce significantly the global emission of CO_2 so as to diminish its concentration in the atmosphere. Implementing this strategy confronts us with an enormous collective action problem. Abatement is costly. However, because each individual's contribution to the overall problem is small, the strategy only succeeds if a great majority cooperates. In light of these interdependencies and the costs of individual abatement, any individual may rationally conclude that her interests are best served by defecting from an agreement aimed at cooperatively reducing CO_2 emissions. Widespread defection would prevent successful intervention and bring us one step closer to suffering devastating consequences.

One possibility to resolve the collective action problem, which stands in the way of individuals cooperatively reducing the emission of CO_2 and other similar strategies of combating climate change, is to reframe individual payoffs. If individuals were to view actions that collectively contribute to climate change as morally unacceptable and if they were therefore to disregard altogether the option of defection, the collective action problem would vanish. A way to reframe individual payoffs that has become increasingly popular amongst climate ethicists is to

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promote the development and inculcation of green virtues targeted at protecting natural resources.[1]

This article aims to explore the specific challenges that result from addressing climate change by introducing and fostering green virtues. Its central thesis is that green virtues are an ineffective response to climate change and that utilitarians should focus on green votes and state action rather than virtue theory in order to bring about significant reductions in CO_2 emissions. To argue for this thesis section II presents a utilitarian understanding of virtues while section III investigates its feasibility. Section IV speaks to the challenge of inculcating virtues while section V discusses their vulnerability to scientific uncertainty. Section VI explores virtues and their specific content before section VII considers state sanctions as the obvious alternative to inculcating green virtues. Section VIII concludes.

II. WHAT (ARE) VIRTUES?

When aiming to combat climate change with green virtues a fundamental question arises: what are virtues? A traditional conception is offered by Julia Driver, who defines a moral virtue as 'a character trait that systematically produces or gives rise to the good'.[2] Dale Jamieson contends that this account may serve as a first approximation but still leaves much to be desired, such as a reflection about the importance of emotions for virtues.

However, when it comes to the implementation of green virtues to slow climate change, Jamieson believes that these specifics may not have to be explored in detail. He argues that in order to avoid large-scale defection and, therefore, the collapse of any cooperative effort to curb climate change, utilitarians must become virtue theorists. Thus, rather than arguing for the acceptance of virtues as being fundamental to morality, Jamieson proposes a multi-level theory according to which

[1] For recent developments see the anthology *Ethical Adaptation to Climate Change: Human Virtues of the Future*, ed. A. Thompson and J. Bendik-Keymer (Cambridge, 2012), and in particular D. Jamieson, 'Ethics, Public Policy, and Global Warming', *Science, Technology & Human Values* 17 (1992), pp. 139–53, and D. Jamieson, 'When Utilitarians Should Be Virtue Theorists', *Utilitas* 19 (2007), pp. 160–83. For an application to environmental ethics more generally also see R. L. Sandler, *Character and Environment: A Virtue-Oriented Approach to Environmental Ethics* (New York, 2007), as well as *Environmental Virtue Ethics*, ed. R. L. Sandler and P. Cafaro (Lanham 2005). A succinct overview of important works within environmental virtue ethics is offered by R. L. Sandler, 'Environmental Virtue Ethics', *International Encyclopedia of Ethics*, ed. H. LaFollette (Oxford, 2013), pp. 1665–74. For an early but to this day particularly well-known and influential work of environmental ethics see H. D. Thoreau, *Walden* (Boston, 1854).

[2] J. Driver, *Uneasy Virtue* (New York, 2001), p. 108; also quoted in Jamieson, 'Virtue Theorists', p. 171.

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utilitarians should apply virtues in order to achieve outcomes that are best from the perspective of utilitarianism.

In essence this entails, in Jamieson's view, a renunciation of making one's own actions contingent on 'beliefs about the behavior of others'.[3] According to Jamieson contingency and the resulting cynical calculations allow us to rationalize defection. Therefore, Jamieson argues that only non-contingent and thereby non-calculative approaches to climate change can be effective. Accordingly, he understands virtues as 'non-calculative generators of action'.[4]

To avoid confusion it is important to note that Jamieson's interpretation of virtues differs on many levels – in part deliberately – from the classical conceptions offered most notably by Plato and Aristotle. First, and as mentioned above, Jamieson offers a virtue theory rather than a version of virtue ethics. Thus, virtues are not basic to Jamieson's ethical theory. Second, in Aristotle's conception the virtuous agent must possess and apply *phronesis* (practical wisdom) in order to take into account the specific circumstances of any particular decision situation.[5] In Jamieson's view, however, it is central that we must disregard aspects of decision situations, namely our 'beliefs about the behavior of others'.[6] Lastly, ancient Greek virtue ethics entails the belief that acting virtuously contributes to *eudaimonia* (happiness).[7] Whether Jamieson's approach is able to uphold this link between virtue and the good life – in the context of combatting climate change – is at least doubtful. This is especially so if the virtuous agent is committed to stark reductions in individual emissions while climate change is propelled onward by most others. According to Aristotle we cannot be fully virtuous if we give away all our possessions.[8] For example, if we have no resources we cannot provide hospitality nor can we be generous. Still Jamieson argues that: 'Even if in the end one's values do not prevail, there is comfort and satisfaction in living in accordance with one's ideals.'[9] However, it is at least as plausible that having stuck to one's values at great personal cost and to no public benefit is especially discomforting and dissatisfying. In this context it is again

[3] Jamieson, 'Virtue Theorists', p. 167.

[4] Jamieson, 'Virtue Theorists', p. 172.

[5] For Aristotle's conception of *phronesis* see Aristotle, C. J. Rowe and S. Broadie, *Nicomachean Ethics: Translation, Introduction, and Commentary* (Oxford, 2002), book 6, esp. ch. 5.

[6] Jamieson, 'Virtue Theorists', p. 167.

[7] Aristotle, *Nicomachean Ethics*, book 1, esp. chs. 6 and 13. The idea that virtues are advantageous for the virtuous is also common within environmental virtue ethics. For examples see R. Carson, *The Sense of Wonder* (New York, 1965) and Thoreau, *Walden*.

[8] Aristotle, *Nicomachean Ethics*, book 10, ch. 8.

[9] Jamieson, 'Virtue Theorists', p. 179. For a supporting opinion see A. A. Schuessler, *A Logic of Expressive Choice* (Princeton, 2000).

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essential to note that the green virtues proposed by Jamieson are not meant to be fundamental to morality but rather meant as a means to the end of halting climate change. Therefore, it is unjustified to propose that these virtues or ideals remain comforting or satisfying while they simultaneously fail to fulfil their purpose.

However, these clear differences between Jamieson's virtue theory and ancient Greek virtue ethics do not present a problem in and of themselves. We merely need to be aware of them when considering the reversionary account. For while it is non-traditional and obviously imprecise, Jamieson's account is well suited as the basis of an exploration of the subject of a green utilitarian virtue theory.

Nevertheless, this working definition of what a virtue is, does not absolve us of eventually having to answer a second central question: what are the specific green virtues that might be up to the task of slowing – if not halting – climate change? Already in earlier work on the same subject Jamieson proposes that we 'nurture and give new content to some old virtues such as humility, courage, and moderation and perhaps develop such new virtues as those of simplicity and conservatism'.[10]

The development and inculcation of these non-contingent virtues is meant as an effective response to climate change. Assuming that non-contingent green virtues are possible and assuming that people successfully adopt them, the virtue theorist's approach to climate change could make a contribution to solving the climate change crisis. Unfortunately, the plan is strewn with traps.

III. ARE NON-CONTINGENT GREEN VIRTUES POSSIBLE?

As discussed above, Jamieson argues for non-contingency in any assessment of individual action with respect to climate change and understands virtues to be 'non-calculative generators of action'.[11] What does that mean in detail and how does it apply to specific choice situations?

Non-contingent choices are meant to circumvent the dangers of large-scale coordination problems by making our choice of action independent of our beliefs about what others are doing or going to do. The idea is that if we follow green virtues we act non-contingently and avoid utility calculations that would be likely to prevent us from slowing climate change.

However, if the content of green virtues is or must be defined contingently, non-contingence may merely be an illusion. Consider the

[10] Jamieson, 'Ethics', p. 151. Jamieson offers similar virtues in Jamieson, 'Virtue Theorists', pp. 181–2.

[11] Jamieson, 'Virtue Theorists', p. 172.

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green virtues of moderation and conservatism mentioned above. There is an important sense in which the content and action guidance of these virtues – and possibly those of any virtue aimed at slowing climate change – are fundamentally contingent on our beliefs about the behaviour of others.

To appreciate the necessity of contingency, consider the case of *urban transport*. Cara and nine others wish to travel a distance of 10 km. By default they will use ten individual cars emitting 1 kg of CO_2 each. If Cara chooses to take her bus rather than her car she can offer the others a ride. Independently of the number of passengers, the bus will emit 5 kg of CO_2. Cara has the goal of reducing CO_2 emissions and thereby slowing climate change. Given her goal, should Cara take the bus?

Total CO_2 emissions depend on transport choices. If everybody joins Cara and goes by bus, total emissions amount to 5 kg of CO_2. If ten individual cars are in use, total emissions amount to 10 kg. If Cara goes by bus but the others refuse to join her, total emissions amount to 14 kg. Therefore, in using her bus and offering others a ride, Cara can make things much better or much worse. Accordingly, whether or not Cara should take the bus depends on her beliefs about the behaviour of others. If she believes that at least five others will join her, Cara should take the bus.

This simplistic example easily generalizes to important questions of individual consumption and public policy. One such question is whether governments should mandate that the buses and trains used in public transport systems emit less CO_2 even if the associated costs will raise prices and lead some commuters to revert to using individual cars. However, whenever decisions are made about individual consumption or public policy in an interdependent world, it is only in the rarest of circumstances that such decisions can be made non-contingently. Accordingly, effective green virtues must rely on contingent components, making non-contingency altogether illusionary.

Some may argue that it should at the very least be possible to choose to cooperate non-contingently. Thus, independently of any beliefs about the behaviour of others, an agent could and should choose to cooperate within the context of the collective action problem of global environmental change. As long as such non-contingent cooperation does not make things worse, by causing greater CO_2 emissions if others do not cooperate, there may be value to this approach. Unfortunately, this variant of non-contingency is equally unavailable.

Once again consider the case of *urban transport*. What does it mean for Cara or one of her potential passengers to cooperate? This, again, depends on the actors' beliefs about the behaviour of others. If Cara

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assumes that the others will fail to take her up on the offer of a bus ride, leading her to ride the bus alone, Cara is hardly cooperating in the relevant sense. Rather, she should have resorted to driving her individual car. Note that, in contrast to the case of the prisoner's dilemma – where the choice of 'not confessing' (cooperating with the other player) would make things worse for Cara but consequently make things better for the other player – Cara is actually making things worse for everybody by taking the bus.

It should hardly be a surprise that in the context of the multitude of CO_2-abatement strategies to choose from in the real world, cooperating is a fundamentally contingent undertaking. Therefore, while green virtues are a real possibility, their non-contingent variants are not: all reasonable interpretations of green virtues must be contingent on the beliefs about the behaviour of others as non-contingent choices run the risk of virtue-worshipping and consequently of increased emissions.

IV. INCULCATING VIRTUES

Even appropriately contingent green virtues may pose significant challenges. Let us assume – at least for a moment – that we know which green virtues are best. Let us further assume that internalizing them is indeed the best tool significantly to slow climate change. Thus, the challenge is for a vast number of people rooted in many radically different cultures, political systems and histories to adopt a given set of virtues. These virtues are by no means tangential to everyday life. Rather, they revolutionize it. If in the end they lead us to reduce the emission of CO_2 they must alter the way of life of all citizens in industrialized countries on a very basic level.

Some may doubt that that is even possible. Virtues, values and emotions are not easily changed, and some may even be fundamental to human nature. However, others are culturally constructed and change over long periods of time. What was virtuous and valued in seventeenth-century France may no longer be accepted today.

This indicates a central complication: timing. Even if we know what green virtues are appropriate and even if it is in fact possible to inculcate them, that process may simply take too long. One difference between climate change and problems that have been successfully addressed by changing virtues and values in the past is that addressing climate change is not only extraordinarily important but also extremely urgent.

Proponents of a virtue-based solution may interject that in the case of climate change virtue change may come about more quickly – essentially adapting to the urgency and universality of the problem. This, some may claim, could be so because catastrophic climate change

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would harm everybody and manifest itself in severe weather events. On the contrary, while catastrophic climate change would negatively affect the great majority of people, minor climate change may well bring benefits to some, making them reluctant to accept what others call green virtues.[12] Further, even the onset of catastrophic climate change will be hidden from sight – simply because climate change is a severely lagged phenomenon. Therefore, rather than being an especially well-suited candidate for being addressed by virtue change, climate change brings along unusual obstacles, making the swift adaptation of virtues highly unlikely.

This is a very simple observation: it is unreasonable to expect to address an extremely urgent matter successfully at glacial speeds. Unfortunately the slow pace of virtue change also exacerbates its vulnerability to scientific uncertainty.

V. VULNERABILITY TO SCIENTIFIC UNCERTAINTY

Scientific uncertainty is one of the central challenges any strategy to combat climate change must face.[13] While it is virtually certain that anthropogenic climate change is already in motion and continues to be fuelled by the emission of greenhouse gases, such as CO_2, the specific cause-and-effect relationships remain little understood. Therefore, estimates regarding the level of CO_2 abatement necessary to achieve a specific goal of slowing climate change are uncertain and likely to change in the future. Any approach to combating climate change must be able to adapt to these changes.

So what are we to do if a new prediction forecasts a climate catastrophe although or precisely because we unwaveringly uphold our now outdated green virtues? As new and appropriate green virtues do not turn up out of the blue we must ascend to the critical level – within the context of Jamieson's two-level theory – and become flexible calculators in order to determine the content of new green virtues.

Until the new green virtues have been determined and inculcated two strategies appear applicable.[14] First, we may want to rely on our outdated virtues until the new virtues take effect. Second, we may want to abandon immediately the outdated virtues and become

[12] For an analysis of these heterogeneous impacts see, for example, R. Mendelsohn, A. Dinar and L. Williams, 'The Distributional Impact of Climate Change on Rich and Poor Countries', *Environment and Development Economics* 11 (2006), pp. 159–78.

[13] See, for example, S. M. Gardiner, 'Ethics and Global Climate Change', *Ethics* 114 (2004), pp. 555–600.

[14] Interestingly, proponents of two-level theories pay scant attention to this transition problem. For example see F. Feldman, 'True and Useful: On the Structure of a Two Level Normative Theory', *Utilitas* 24 (2012), pp. 151–71.

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moment-by-moment flexible calculators instead, until we have inculcated our new green virtues. Both strategies face significant difficulties. The first strategy leads to suboptimal decisions because it relies upon an outdated decision procedure, while the second strategy overwhelms the individual actors and similarly risks bad decision-making. Therefore, the necessity of transitioning from one set of virtues to another counts against combatting climate change on the basis of virtue theory.

While Jamieson does not consider the specific question of how to overcome outdated green virtues, he is deeply concerned with the general tension between the non-contingent green virtues he proposes and the utilitarian need to react non-complacently to changing circumstances.[15] His solution to this problem may well inform a utilitarian virtue theorist's approach to the challenge of overhauling outdated virtues.

Jamieson argues that: 'For a utilitarian, the commitment to non-contingency must include . . . an "escape clause".'[16] According to such an escape clause we must – in 'extreme cases' – use the 'test of utility' to assess whether following our virtues is appropriate.[17] For the obvious question of how we can recognize such extreme cases without resorting to calculations, Jamieson offers an equally obvious answer: 'we just do it'.[18] That answer is further elaborated:

> When the house is on fire, a child is screaming, atrocities are being committed and civilizations threatened, moral mathematics are not needed in order to see that the patterns of behavior that are generally best may not be up to it in the present case.[19]

In instances when the choice between faithfully following our previously established patterns of behaviour and resorting to calculative decisions is not this obvious, Jamieson believes that the virtuous green should simply follow the established virtues 'trusting in the overall utility-maximizing power of the green virtues'.[20]

There is much to be said for this view of the human ability to recognize moral catastrophe and Jamieson's proposal of how to build on it in order to reach optimal responses. This is especially true when considering the background of Jamieson's argument. As mentioned above, Jamieson correctly identifies as one of the main problems of his overall strategy the tension it creates between the non-contingency he believes to be

[15] Jamieson, 'Virtue Theorists', p. 172.
[16] Jamieson, 'Virtue Theorists', p. 175.
[17] Jamieson, 'Virtue Theorists', p. 175.
[18] Jamieson, 'Virtue Theorists', p. 175.
[19] Jamieson, 'Virtue Theorists', p. 175.
[20] Jamieson, 'Virtue Theorists', p. 175.

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necessary in order to combat large-scale collective action problems and the common demand for non-complacency. Here non-complacency is understood as requiring that we respond dynamically to changing conditions. While non-contingency is necessary to address collective action problems, Jamieson argues that apart from this context 'it is flexible patterns of behavior that generally are needed for utility-maximizing'.[21] To accommodate this dichotomy, Jamieson suggests a domain-specific approach to virtue ethics. When we are concerned with the domain of slowing climate change we should be inflexible and guided by our green virtues alone, while in other domains we 'should be flexible calculators'.[22]

The obvious problem of this account is that many or even most decisions that affect the climate are also relevant to other domains of life. As the need to emit CO_2 permeates all areas of industrialized consumption the climate change domain is quite literally ever-present. So what are we to do as virtuous greens if a decision that affects multiple domains is impending? We cannot simply resort to Jamieson's guidance to be inflexible within one domain while being flexible within the other. This situation is precisely where the 'escape clause' comes to the forefront. If the situation is obviously an extreme case we are to become flexible calculators, but if we have to calculate to determine whether the situation is extreme we should stick to our green virtues.[23]

Under certain circumstances this strategy may work like a charm. If a virtuous green committed to a minimum of CO_2 emissions is confronted with a screaming child in a burning building – who can be saved at a cost of additional emissions – the potential saviour could easily recognize this situation as providing all the necessary justification for disregarding green virtues. Under these sorts of circumstances Jamieson's response to the question of how we can recognize extreme cases without resorting to calculations is quite plausible: 'we just do it'.[24]

However, not only are there non-obvious catastrophes that arise within the intersection of different domains but there is also the potential for these catastrophes squarely within individual domains such as that of climate change. Therefore, the issue of non-complacency not only arises across but also within domains. It is here that any domain-specific virtue strategy must concede its limitations. It no

[21] Jamieson, 'Virtue Theorists', p. 174.

[22] Jamieson, 'Virtue Theorists', p. 174.

[23] Jamieson's theory is reminiscent of R. M. Hare's distinction between the critical and the intuitive level of morality. See R. M. Hare, *Moral Thinking: Its Levels, Method, and Point* (Oxford, 1981).

[24] Jamieson, 'Virtue Theorists', p. 175.

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longer suffices to be flexible within one domain or to recognize obvious catastrophes that overlap multiple domains in order to address the challenge of complacency. Once catastrophe looms within the climate change domain we must be non-complacent – at the latest.

So where does this leave us with respect to our question of how to respond to a process that invites a climate catastrophe while we uphold our green virtues? Unfortunately, we have made very little progress. First, we must recognize the catastrophe to break free from our now obsolete virtues. It lies at the heart of the challenge of climate change that such a catastrophe is concealed from our view. It is not the case that we either now or then would simply recognize it. Jamieson may respond that this is exactly the reason why we must inculcate green virtues, because only the shift towards a new moral paradigm will enable us to recognize what is now hidden from sight. Certainly green virtues will establish an understanding of the harmfulness of the emissions we now take for granted and, therefore, fail to identify as morally odious on a daily basis. However, the advent of a climate catastrophe is a scientific fact to be predicted by climatologists. None of it is obvious. All the effects of today's emissions lie in the far future and are highly dispersed. Our ability simply to recognize that it is time to break free from our formerly well-chosen virtues is severely hampered.

Nevertheless, one may want to claim that just as the climate change problem has been recognized now – at least by a significant number of people – it could be recognized in the future. Thus, the 'escape clause' would come into effect demanding that we become flexible calculators. However, in contrast to the case of the screaming child in the burning house – where we know exactly what to do – we once again enter a large-scale collective action problem, with the only difference being that the catastrophic consequences are nearer in the future. Thus, in order to address this challenge we must once again become virtuous greens, albeit with more stringent virtues. With each iteration of this process the challenges mount. Not only are the virtues we need to inculcate this time around more demanding, but we also have less of that crucial ingredient: time. Arguably, we will have too little time, which is precisely why we should reject the virtue-change approach in the first place.

VI. VIRTUES AND THEIR SPECIFIC CONTENT

With these limitations in mind I return to the essential question of how to interpret green virtues precisely so as to make them operational. A key role of any set of green virtues would be to guide towards responsible consumption decisions. Are they up to the task? To arrive at the proper green virtues Jamieson proposes the virtue-identification

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strategies of 'preservation, rehabilitation and creation'.[25] The one virtue he proposes to create is 'mindfulness'.[26] Jamieson elaborates:

> In order to improve our behavior we need to appreciate the consequences of our actions that are remote in time and space. A virtuous green would see herself as taking on the moral weight of production and disposal when she purchases an article of clothing (for example). She makes herself responsible for the cultivation of the cotton, the impacts of the dyeing process, the energy costs of the transport, and so on.[27]

While uncontroversial on a superficial level the proposed virtue of mindfulness harbours a number of complicated challenges. First, there is the challenge of imperfect information. In an industrialized society it is virtually impossible to determine the 'consequences of our actions that are remote in time and space'.[28] While we remain incapable of determining even our immediate CO_2 emissions it is preposterous to suppose that we could – at a reasonable cost – research and evaluate the more remote CO_2 emissions our consumption causes. However, these CO_2 emissions are essential costs of the production process which we must consider in any purchase.

The second problem remains even if we assume perfect information. Jamieson suggests that we take into consideration 'the energy costs of the transport' of any product we purchase.[29] That sounds reasonable. What does it mean? Should we consider the marginal or average energy costs of the transport of our products? If we subscribe to the view that marginal costs count we might as well order green beans from Africa because the plane delivering them will fly independently of our order.[30] If we prefer to consider average costs we might order the same beans delivered by ship, for given the vast volumes cargo ships transport the average energy costs per bean package are very low. They are lower than the average energy costs associated with procuring green beans from a local farmer because only few people order from local farmers. Not only does this example once again show the contingent and therefore calculative content of effective green virtues but it also

[25] Jamieson, 'Virtue Theorists', p. 181.

[26] Jamieson, 'Virtue Theorists', p. 181.

[27] Jamieson, 'Virtue Theorists', p. 182.

[28] Jamieson recognizes this point and believes that the virtue of mindfulness is therefore difficult to acquire; however, inexplicably mindfulness remains the one virtue he proposes to create.

[29] Jamieson, 'Virtue Theorists', p. 182.

[30] For a dissenting opinion see S. Kagan, 'Do I Make a Difference?', *Philosophy & Public Affairs* 39 (2011), pp. 105–41. For a critique of that position see J. Nefsky, 'Consequentialism and the Problem of Collective Harm: A Reply to Kagan', *Philosophy & Public Affairs* 39 (2011), pp. 364–95.

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demonstrates how challenging their application is even on paper – let alone in a real decision situation.

Maybe mindfulness would instead imply that we take into consideration the energy costs that would accrue if everybody was mindful. This could lead us to order green beans from our local farmer although the current average and marginal energy costs are large. That of course implies that – for the time being and in case others do not follow suit – we actually contribute *more* to climate change than without being mindful. If we extrapolate from this idea, mindfulness may drive us to abandon any scheme which is currently efficient – because a large number of people cooperate under it – for a theoretically even more efficient alternative, making any kind of collaboration or economies of scale unstable.

Green virtues are extremely challenging to interpret and therefore offer very little specific action guidance. One reason for this failure to be action guiding is that the interdependent structure of our society makes the content of green virtues fundamentally contingent. It is because of this contingency of green virtues that they are not well suited to address large-scale collective action problems. When analysed up close virtues such as mindfulness are just as vulnerable to the pitfalls of contingence, calculation and imperfect information as are direct act-utilitarian decision procedures.

VII. GREEN VOTES AND STATE SANCTIONS

The obvious alternative to inculcating green virtues are green regulations enforced by the state, such as cap-and-trade systems, taxes or laws mandating the use of specific green technologies. It is beyond the scope of this article to flesh out a positive proposal of how best to apply state sanctions to combat climate change. Nevertheless, a brief outline of the central advantages of approaches that mainly rely on state sanctions as opposed to virtue change may be well suited to bring home the criticisms developed in the previous sections.

While Jamieson recognizes the importance of state power he implies that the green virtues he prescribes would be a prerequisite to bringing about institutions that can address climate change:

> Legitimate states can only arise and be sustained among people who act, reason and respond in particular ways. The mere existence of a collective action problem does not immediately give rise to an institution for managing it, independent of the values and motivations of actors.[31]

As a generalization this statement rings true; however, it has no suitable application to the problem of designing institutions to manage

[31] Jamieson, 'Virtue Theorists', p. 170.

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climate change. Simply put: inculcating green virtues is much more demanding than voting for a green party. In the case where it is demanded of us that we inculcate and act on green virtues independently of what others are likely to do, we are asked to make significant sacrifices even if the chances of success are slim and we are potentially joined only by a few green crusaders. In contrast, when voting for a green party and for laws that will mandate all citizens to comply with green regulations, we are only committed to making these sacrifices in coordination with others and with a much greater likelihood of success justifying our actions. Therefore, the development of institutions for managing the collective action problem, caused by climate change on a national level, does not presuppose that we inculcate the green virtues prescribed by Jamieson. Rather, this development relies on a rational and voting public educated about the intricacies of climate change. These political grassroots are not easy to come by but educational programmes regarding climate change are much more feasible than timely virtue change.

Given that a world government is unlikely even in the further future, the collective action problem re-emerges on the supranational level, casting doubt on the claim that state sanctions are better suited to addressing climate change. However, while no single nation is able to prevent climate change by itself, not all nations are needed to slow the process significantly.

Under these circumstances the political tool of a *conditional mandate* could make significant contributions to addressing climate change: in each country citizens would be asked to vote non-green or green. Voting non-green signals support for the status quo and opposition to (further) emission reductions. Voting green signals support for (further) emission reductions conditional on the participation of a sufficient number of other countries. Thus, if the majority votes non-green in a national election no further emission reductions are implemented. However, if the majority in a national election votes green, emission reductions are implemented conditional on the fact that the electoral majority has voted green in a sufficient number of other countries.

In this voting format it is entirely rational to vote green for the great majority of the world's population. Further, it is rational to establish this voting format. Exceptions to the rule are, of course, citizens of countries that are projected to benefit from global warming or citizens who are likely to die before climate change becomes drastic and who have no interest in the welfare of future generations.

The main obstacle to the implementation of such a system today is that an insufficient number of people are convinced that laws mandating strict emission cuts are in their best interest. This problem can be addressed by educational campaigns. These campaigns are

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no simple undertakings but significantly more feasible than virtue change, for it requires not only the acquisition of knowledge but also fundamental changes in character.

Beyond feasibility, enforceability and the potential for timely implementation, state sanctions have the advantage of being rapidly adaptable to new scientific discoveries. Further, state sanctions are able to coordinate the actions of all citizens – thereby avoiding the fundamental challenges of contingency.

VIII. CONCLUSION

Combating climate change by relying on significant virtue change is ineffective. The attempt to achieve non-contingency to combat large-scale collective action problems is thwarted by the content of green virtues remaining fundamentally contingent. Therefore, green virtues fail to capitalize on what Jamieson advertises as their greatest strength.

Further, green virtues are challenging to inculcate and hard to change once adopted. Their introduction is too time-consuming, which also makes them especially vulnerable to scientific uncertainty. Given that climate change is an extremely urgent problem which confronts us with significant scientific uncertainty, this fact alone disqualifies virtue change from any pool of compelling strategies.

Successfully combating climate change requires state sanctions. At the same time the creation of institutions that administer these sanctions does not require virtue change. Rather, introducing the political tool of a *conditional mandate* and voting green in order to commit to protecting the climate are individually rational for the great majority of the world's population. Therefore, utilitarians should rely on green votes rather than green virtues.[32]

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