If You Polluted, You're Included: The All-Affected Principle and Carbon Tax Referendums[1]

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Abstract

In this paper, we argue that the All Affected Principle generates a puzzle when applied to carbon tax referendums. According to recent versions of the All Affected Principle, people should have a say in a democratic decision in positive proportion to how much the decision affects them. Plausibly, one way of being affected by a carbon tax referendum is to bear the economic burden of paying the tax. On this metric of affectedness, then, people who pollute a lot are *ceteris paribus* more affected than people who don't, because the former stands to pay more in carbon taxes than the latter. Consequently, people who pollute a lot receive large voting power, while people who pollute a little receive little voting power. This is a puzzling distribution of voting power for several reasons. First, it is instrumentally counterproductive if the goal is to rectify damages to the climate. Second, it introduces prudential incentives for everyone to pollute more to gain voting power. Third, the relative difference in voting power between people who pollute a lot and people who don't is puzzling from a desert-based point of view, since the former often make a serious effort to avoid polluting, while the latter don't.

Keywords: all-affected principle; polluter pays principle; democratic boundary problem; carbon tax; democracy

I. Introduction

As part of the Paris Agreement of 2015, the government of Switzerland committed to reducing its greenhouse gas emissions by 50 percent before 2030, compared to its emissions levels of 1990. To make it more likely that the goal was reached, the government decided to implement a carbon tax. The proposal was explicitly to let citizens of Switzerland pay a carbon tax that follows the logic of the so-called Polluter Pays Principle (PPP)—a well-known principle from the literature on climate justice.[2] This would mean that the citizens of Switzerland should pay a carbon tax in positive proportion to how much they pollute individually.[3] The tax revenue could then be

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[2] For a discussion of PPP, see Caney (2010); Duus-Otterström and Jagers (2011); Kingston (2014); Moellendorf (2012).

[3] Throughout the paper, when we talk of pollution, we mean emissions of greenhouse gasses unless specified otherwise. Of course, there are many other types of pollution, but since we are primarily

allocated to "green investments", such as climate mitigation (e.g. replacement of fossil fuels with renewable energy sources), climate adaptation (e.g. building sea walls or dams to protect climate-vulnerable people), or climate compensation (e.g. replanting of rainforests).[4] However, opponents of the carbon tax managed to collect enough signatures to trigger a national referendum through Switzerland's system of direct democracy, hoping that a majority would vote to defeat the proposal. The referendum took place on June 13, 2021, and was the first national carbon tax referendum ever. The proposal was eventually defeated by a small majority, with only 51.6 percent of the votes.[5] While the carbon tax referendum in Switzerland was the first national one in history, there have been several smaller ones taking place in other countries. For example, Initiative Measure No. 1631 in Washington was a state referendum in 2018 on whether to implement a local carbon tax. This proposal too was defeated by a small majority.[6] While we have only seen a few carbon tax referendums yet, other countries and other states are currently flirting with the idea too.[7]

The new phenomenon of carbon tax referendums like the one in Switzerland generates a novel puzzle related to the well-known 'boundary problem' in democratic theory.[8] We argue that carbon tax referendums have a particular structure that generates a puzzle if one wants to solve the boundary problem by complying with the so-called 'All-Affected Principle' (AAP). The puzzle is the following. If we distribute voting power in positive proportion to how much people stand to pay in carbon taxes, then it implies that people who pollute a lot receive a lot of voting power, while people who pollute a little receive little voting power. This is a puzzling distribution of voting power for reasons that we shall spell out throughout the paper.

The democratic boundary problem refers to the problem of deciding who should have a say in any given democratic law-giving entity. As a solution to the boundary problem, democratic theorists often propose the AAP.[9] This principle holds, roughly, that those, and only those, whose interests are affected by a given democratic decision ought to be included in that decision-making process (Dahl 1971; Goodin 2007). More recently, some theorists have suggested, convincingly to our mind, that since

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concerned with carbon tax referendums in this paper, we restrict our focus to pollution constituted by greenhouse gas emissions.

[4] Usually, revenues from carbon taxes are either (1) allocated specifically to climate mitigation, adaptation, or compensation, (2) spent on reductions in income taxes, or (3) used to supplement general government budgets.

[5] See https://www.swissinfo.ch/eng/switzerland-votes-on-controversial-co2-law-/46695016.

[6] See https://www.sos.wa.gov/_assets/elections/initiatives/finaltext_1482.pdf.

[7] See https://www.carbontax.org/states-_-new/.

[8] For a classic description of the boundary problem, see (Whelan 1983). This problem is also sometimes referred to as the problem of constituting the demos (Arrhenius 2005; Goodin 2007) or the problem of inclusion (Dahl 1989).

[9] The AAP and other proposed solutions to the boundary problem have produced an extensive body of literature in democratic theory. See for example Arrhenius, (2005; 2018); Bengtson 2020; Bengtson and Lippert-Rasmussen (2021); Koenig-Archibugi (2020); Lippert-Rasmussen and Bengtson (2021); Maltais et al. (2019); Miller (2009; 2020); Owen (2012); Saunders (2012); Song (2012); Whelan (1983). As an alternative to the AAP, the All-Subjected Principle (ASP) has recently gained momentum as a solution to the boundary problem (Andrić 2021; Bengtson 2021). In its generic version, the principle holds that everyone who will be subject to the laws enacted ought to have a say on them (Goodin 2016: 368).

affectedness is a scalar phenomenon, the AAP should allow for a weighted voting scheme that distributes voting weights in linear positive proportion to people's levels of affectedness (Angell and Huseby 2020; Brighouse and Fleurbaey 2010; Miller 2009; Rosenberg 2019). We will turn back to the theoretical foundations of the AAP in section II.

The resulting demos, and the distribution of voting power between voters, depends in turn on how we spell out the notion of 'affectedness'. As anyone familiar with the literature knows, there are many competing ways of doing so.[10] For present purposes, however, we want to focus on two notions of affectedness that are particularly relevant for carbon tax referendums.[11] In a carbon tax referendum like the one in Switzerland, an obviously relevant way of being affected is to be affected by *climate change itself*. If we think of affectedness this way, we can then distribute voting power accordingly, so that those who are only affected a little by climate change get little voting power; those who are much affected get more voting power, and so on. While this approach is theoretically appealing, it is practically infeasible to determine how affected people will be by climate change in the future—at least if we want the calculation to be accurate enough to be meaningfully implementable in real referendums. Another reason why it is practically infeasible to distribute voting power in accordance with how affected people will be by climate change is that people in other countries will plausibly be affected too. The demos of the Swiss referendum, for instance, would no longer be restricted to Swiss citizens, because foreigners too are affected by the greenhouse gas emissions of Swiss citizens (Goodin 2007; Näsström 2011; Schaffer 2012). Moreover, and perhaps more problematically, the demos would also no longer be restricted to people living right now because greenhouse gas emissions from currently living Swiss people also affect dead people, and people of future generations (Arrhenius 2015; Bengtson 2020; Jensen 2015; Rose 2019; Tännsjö 2007). Finally, the demos would no longer be restricted to adult citizens, because children are likewise affected by climate change itself too—arguably even more so than older people (Angell 2020).

However, most theorists think of the AAP as an *ideal-theoretical* principle that is more or less unconstrained by feasibility constraints (Erman & Kuyper 2020). Yet, since our aim in this paper is to discuss how the principle might apply to real world carbon tax referendums to approximate the ideal of the principle, it seems suitable to take feasibility considerations into account. For, as Robert Goodin notes, "If [enfranchising everyone everywhere, red.] is wildly impractical then we need to begin thinking what arrangements might best approximate that ideal in some practice that is feasible" (Goodin 2007, 64).[12] From a practical point of view, distributing voting power in accordance with how affected people will be by climate change itself is infeasible.

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[10] Robert Goodin, for instance, makes the relevant distinction between "all *actually* affected interests", and "all *possibly* affected interests" (Goodin 2007: 52-55). See also (Owen 2012) and (Angell 2020).

[11] Plausibly, there are more than these two notions available, even when we focus exclusively on carbon tax referendums. However, we focus on these two for the sake of brevity, and because they seem to be the most obvious ones when it comes to carbon tax referendums in particular.

[12] See (Räikkä 2014) for good discussions of the problems related to approximating practically infeasible ideals.

This does not retract from the *ideal-theoretical* plausibility of the AAP, but it should decrease our *credence* for thinking that the boundary problem in real carbon tax referendums like the one in Switzerland will be solved by applying the AAP. Perhaps there will one day be a practically feasible way to determine how affected people are going to be by climate change itself. Meanwhile, however, we want to set aside the issue of being affected by climate change itself in this paper, and instead focus on a type of affectedness that seems more practically feasible to determine, and which is unique to carbon tax referendums. We will, however, return to the question of being affected by climate change itself at the end of the paper.

The type of affectedness we have in mind is the economic affectedness of having to pay the carbon tax. In a carbon tax referendum, one obvious way of being affected is to stand to pay the carbon tax, if the law is enacted. This type of affectedness is much easier to measure, because of existing ways of measuring the carbon footprint of individuals.[13] Moreover, this type of affectedness is quite unique to carbon tax referendums. Of course, similar types of economic affectedness are at play in any referendum concerning who should bear the economic burden of rectifying some damage. But because referendums rarely deal directly with questions of who is going to bear such economic burdens, the issue we will address is quite unique to carbon tax referendums. The carbon tax referendum in Switzerland is a clear example of a case in which people have different stakes and in which proponents of the AAP agree that people should have unequal influence. If the carbon tax policy is enacted it will be felt the most by some specific set of individuals, that is, those who are polluting the most. However, as we will see, those who are polluting the most will be granted the most voting power. Accordingly, the carbon tax referendum raises issues of climate justice that seems problematic for friends of the AAP.

The paper proceeds as follows. In section II, we roughly sketch out the theoretical framework of the AAP and its proportionality-sensitive version. In section III, we unfold the puzzle generated by complying with the AAP in carbon tax referendums. In section IV, we discuss and reject a possible solution to the puzzle. In section V, we make a few concluding remarks.

II. The All-Affected Principle and Proportionality

The most widely endorsed solution to the boundary problem is, arguably, the All-Affected Principle (AAP). In its generic version, the AAP says that those affected by a given (collective) decision—understood as better or worse off—ought to be included in the making of that decision. Although the AAP takes the extent to which someone is affected by a decision as necessary and sufficient conditions for inclusion in the demos, the formulation is underspecified in various ways. First, a person is likely to be affected in numerous ways. It is usually assumed that being affected is to have one's interests

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[13] There exist many online carbon footprint calculators that individuals can use to get an approximate idea of what their individual carbon footprint is. We can imagine that the state used something similar to these calculators as part of the input when they determine how affected individual voters will be by having to pay a proportionate carbon tax. See e.g. https://www.nature.org/en-us/get-involved/how-to-help/carbon-footprint-calculator/.

influenced by a given decision (Arrhenius 2005; Goodin 2007). Second, there is the question of whether, to have a claim for inclusion, one must be *actually* affected or whether it suffices that one is *possibly* affected (Goodin 2007; Owen 2012).

Three reasons have been put forward in the literature for why we should accept the idea of that a person who are affected by a certain collective decision should also have the opportunity to influence those decisions[14] (Bengtson and Lippert-Rasmussen 2021). First, the interest protection rationale (a) claims that if an individual is affected by a certain democratic decision, she ought to be granted a vote in the making of that decision to protect her interests (Goodin 2007; Miller 2009). Second, some defend the self-government rationale (b) on grounds that if an affected individual's interests are affected by a certain democratic decision, then she is self-governing if, and only if, she is included in making that decision. To remain self-governing, the individual must be democratically included to avoid that others solely decide on her behalf. Lastly, some others defend the utilitarian rationale (c), according to which the reason affected individuals must be included is that it maximizes welfare (Andrić 2017; Whelan 1983).

A recent theorem presented by Brighouse and Fleurbaey (2010) put forward a prioritarian criterion of the AAP. Roughly put, they argue that voting power should be "distributed in proportion to people's stakes in the decision under consideration" (Brighouse and Fleurbaey 2010: 137-138). Put differently, Brighouse and Fleurbaey defend a system of unequal, but proportional, decision-making power based upon assigning a weight to people's vote that reflects the measure of how their relevant interest are affected in different scenarios. To motivate this claim, Brighouse and Fleurbaey argue that a person's stake in a certain decision is determined by the differential between her current level of advantage and the level of advantage to which she is entitled from the viewpoint of social justice. This means that they measure stakes in accordance with a prioritarian principle, implying that the worse-off you are, the larger stakes you have and the more weight you are granted in the decision (Christiano 2016; Miller 2009: 216). In this way, the theoretical argument for this principle is essentially a welfarist argument. If there is more at stake in a decisionfor a person than for others, the welfare of the person is greater advanced when they have a larger say in those issues in which they have a greater interest.

The theorem presented by Brighouse and Fleurbaey and friends has attracted some objections. Some critics (Angell and Huseby 2020) point out that the proportionality principle undercuts the autonomy of citizens. Indeed, this is the case if people are excluded from partaking in a decision-making, they will have their autonomy seriously undermined. Secondly, they maintain that it is questionable whether the principle can secure the intended justice-promotion since it is uncertain that those who are granted more voting power will vote for policies that reflect the correct account of social justice (Angell and Huseby 2020: 376).

Moving forward, when we talk about the AAP, we have the linearly proportionality-sensitive version sketched out above in mind. This brings us to the next

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[14] See Bengtson and Lippert-Rasmussen (2021) for a discussion of these three underlying reasons.

section, where we show how the AAP generates a puzzle when applied to carbon tax referendums.

III. The Puzzle

Before turning to the puzzle that emerges if we distribute voting power in a way that approximates the ideal of the AAP in a carbon tax referendum, let us first make two preliminary remarks. The first preliminary remark concerns the content of the PPP, and how the proposed carbon tax in Switzerland follows the logic of the PPP. In its generic version, the PPP holds that polluters should bear a suitable proportion of the burdens of climate change, reflecting how much they have polluted individually (Lippert-Rasmussen 2015: 123). The PPP is a proportionate principle, meaning that those who have polluted the most should bear the largest part of the burden, while those who have polluted the least should pay the smallest part of the burden, and so on. The proposed carbon tax in Switzerland follows the logic of the PPP since it ties the carbon tax to the consumption of certain carbon-heavy goods so that the more one consumes these goods, the more one pays in carbon taxes. One intuitively appealing feature of a carbon tax that follows the logic of the PPP is that it ensures that people who are *morally* responsible for causing the problem of climate change are also the ones who are held *legally* responsible for rectifying the problem. Many theorists have found the generic version of the PPP to be an attractive principle for incurring rectificatory duties on polluters by obligating them to bear an economic burden, which can then be spent on climate mitigation, climate adaptation, or climate compensation (Gosseries 2004; Neumayer 2000).[15]

The second preliminary remark concerns the temporal role of pollution. Returning to the Swiss referendum, there is a relevant distinction to be made between *retrospective* pollution and *prospective* pollution. Distributing voting power in the Swiss referendum based on *retrospective* pollution entails that voting power is distributed in proportion to how much people have polluted prior to the referendum. Distributing voting power based on *prospective* pollution, on the other hand, entails that voting power is distributed in proportion to how much people expectedly pollute after the referendum. In the Swiss referendum, the proposal was, among other things, to increase taxes on car fuel and flight tickets, which entails that people would effectively be taxed based on their consumption of these goods prospectively–after the referendum had taken place. But, since it would be impossible to determine how much of these

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[15] However, as Simon Caney has famously pointed out, if we strictly follow the PPP, it will likely worsen the poverty of those who are already poor and push others into poverty who are already at the brink of poverty. For example, strict compliance with the PPP at a global level will affect major developing countries, such as India, to bear an enormous burden of climate rectification. India's per capita emissions in 2020 were 1.7 tonnes of CO_2 as opposed to the US's staggering 14.2 tonnes of CO_2 emissions per capita (Ritchie and Roser 2020). But since the standard of living is so low for many people living in India, imposing climate rectification duties on the citizens of India might prove to jeopardize their ability to secure a decent standard of living in the future. As a solution to this problem, Caney argues that the PPP should be supplemented with an addendum, stating that "Persons should bear the burden of climate change that they have caused so long as doing so does not push them beneath a decent standard of living" (Caney 2010: 218).

goods people will consume in the future, distributing voting power in proportion to how much people are going to pay in carbon taxes would probably have to be calculated retrospectively–assuming that people will consume roughly the same amounts of goods as they did in the past while controlling for the fact that the goods will become more expensive because of the carbon tax. To wit, the more people have polluted in the past, the more they stand to pay in carbon taxes, and therefore the more voting power they enjoy in the carbon tax referendum. With these preliminary remarks out of the way, let us now turn to the puzzle.

To illustrate what the puzzle consists in, it is useful to consider an example:

> ***Family Dinner.*** Suppose that Virtuous Vera and Polluter Paul both live in Switzerland. Vera and Paul are cousins. They meet up at Vera's place every year to enjoy a family dinner. Vera is a climate activist. She does everything in her power to pollute as little as absolutely possible. Her total carbon footprint is significantly lower than that of her family members and the per capita emissions of her fellow citizens. Polluter Paul, on the other hand, does not care about climate change at all. Reflecting his general lifestyle, Paul flies in to family dinner every year, rents the biggest Hummer truck he can find at the airport, and drives it around before dinner time just for fun. By any measure, Paul pollutes much more than his "fair share". Both Vera and Paul are economically quite well off, and equally so. The family dinner takes place on June 13, 2020– exactly a year before the referendum is announced to take place. Vera and Paul start arguing about how they should vote in the referendum, and like always, they do not agree. Vera will vote in favor of the carbon tax, while Paul will vote against it.

What does it imply for Vera and Paul if Switzerland decides to distribute voting power in accordance with the AAP in the upcoming referendum? Consider first the case of Virtuous Vera. Since the PPP holds that an individual should bear a suitable proportion of the economic burden of climate change reflecting their greenhouse gas emissions, Vera will have to bear a small economic burden reflecting her low carbon footprint, *if* the carbon tax is enacted. According to the AAP, Switzerland should distribute voting power in positive proportion to voters' affectedness by the decision. Because of the PPP, however, Virtuous Vera will only be minimally affected by the decision, and she will therefore receive little voting power. So, what could Vera do to gain more voting power? Vera has the prudential incentive to excessively increase her emissions in the next year leading up to the referendum. Come referendum day, her retrospective pollution would be bigger, and she would therefore receive more voting power in the referendum. Suppose that at the moment, she lives on a plant-based diet, only buys local food, solely transports herself by public transportation or by bike, demands to host family dinners to avoid traveling, and exclusively purchases second-hand goods. However, if she intends to gain more voting power a year from now, she has an incentive to give up these sustainable ways of living and instead begin to significantly increase her carbon footprint. Presumably, this would be awfully troubling for Vera's

conscience. But if she wants to gain more voting power to increase the likelihood of enacting the carbon tax, it is rational for her to temporarily change her climate-friendly way of living and begin to pollute excessively.

Now consider the case of Polluter Paul. He already has an enormous carbon footprint. He is against any sort of climate policy that makes his ways of living more expensive or more difficult. Paul is economically well-off and, considering his enormous carbon footprint, he is obligated to bear a large economic burden according to the PPP if the carbon tax is enacted.[16] Since Paul stands to be significantly affected by the carbon tax, he stands to gain a lot of voting power in the carbon tax referendum. The more Paul has to pay in carbon taxes, the more voting power he will have. How can Paul then increase the likelihood of the carbon tax being defeated? According to the AAP, the weight of Paul's vote is determined by, and only by, the degree to which the carbon tax affects his interests. Paul can decide to risk bearing an even larger economic burden to increase his voting power in the decision by beginning to pollute even more excessively than he already does, so that he stands to bear an even larger economic burden if the carbon tax is enacted. He has enough money and might happily risk having to spend some of it later to "buy" voting power now, to prevent the carbon tax from being implemented in the first place. Thus, like Vera, Paul has a prudential incentive to increase his pollution even more.

All of this should strike the reader as puzzling, and for several reasons. First, the distribution of voting power between Vera and Paul is instrumentally counterproductive if the goal is to rectify damages to the climate. The distribution of voting power makes it—all else being equal—less likely that the electorate as a whole decides to enact a carbon tax. In a close referendum like the one in Switzerland, the fact that proponents of the carbon tax have less voting power than opponents of the carbon tax–as small as the difference might be–can make the whole difference. Instrumentally speaking, distributing a lot of voting power to polluters in a carbon tax referendum is as counterproductive as distributing a lot of voting power to people who like to speed in a referendum on deciding the size of speeding tickets. It stacks the deck of cards heavily in favor of the opponent's side.

Second, the distribution of voting power creates prudential incentives for friends and foes of the carbon tax alike to pollute excessively–and even to convince like-minded voters to do the same. Whoever pollutes the most gets the most voting power. This means that, *ceteris paribus,* the group who succeeds in polluting the most gets to determine whether there is going to be a carbon tax at all. It effectively becomes a race to the bottom. Perhaps neither friends nor foes of the carbon tax end up following the incentive to pollute excessively. But since the behavior of people can normally not be predicted with certainty in advance, it is generally a bad idea to create policies that introduce bad prudential incentives because, as behavioral economics tells us, people tend to go where the incentives take them. The government of Switzerland wanted to

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[16] Note that in Family Dinner, we stipulated that Vera and Paul are equally well-off economically. We did so to sidestep the complicated questions of how to measure the relative economic affectedness of paying a proportionate carbon tax if Paul Vera and Paul were unequally well-off. For further discussion of this, see (Angell & Huseby 2020, 372).

implement the carbon tax as a way to make it *more* likely that the goal of complying with the Paris Agreement is reached. But introducing an incentive for everyone to pollute more makes it *ceteris paribus* less likely that the goal is reached.

Third, the *relative* distribution of voting power between Vera and Paul is puzzling from a desert-based point of view. Vera has done everything in her power to pollute as little as absolutely possible, while Paul intentionally pollutes excessively. It is quite odd that a voter who knowingly and intentionally decides to pollute as much as he absolutely can, like Paul, is awarded a lot of voting power, while a voter who does everything in her power to pollute as little as she absolutely can, like Vera, is awarded only little voting power. If it makes sense to talk about desert in this context at all, it seems that if anyone deserves less voting power, it is Paul. And, if anyone deserves more voting power, it is Vera.

Indeed, since proponents of the AAP warrant that "power should be distributed in proportion to people's stakes in the decision under consideration" (Brighouse and Fleurbaey 2010: 137-138) for social justice aims, it seems counterproductive to disenfranchise those worst off and grant stronger voting power to those well-off.

IV. A Possible Solution to the Puzzle

Arguably, the most simple way to resolve our puzzle would be to find a way to distribute voting power in a way that is not too ad hoc, but still gives people like Polluter Paul less voting power, and gives people like Virtuous Vera more voting power. There is a *prima facie* attractive but ultimately mistaken way to achieve this.

To see what this solution consists in, let us begin with an uncontroversial assumption: it is generally unjust to benefit from one's *own* wrongdoing. It is unjust in itself to steal money from others, but it is arguably a *further* injustice to spend the stolen money in a way that benefits you further. One thing is to steal the money and, say, donate it to charities. Let us just assume for the sake of argument that doing so is wrongful in itself because it violates property rights. But spending the stolen money on, say, buying political influence for yourself, is plausibly a further injustice. The idea of benefitting from wrongdoing is well-known in the literature. Some theorists have defended the view that there is a principled moral reason not to maintain benefits gained by wrongdoing (Lindstad 2021; Parr 2016; Pasternak 2016). Proponents of this view often argue that *innocent* beneficiaries of wrongdoing incur special duties to the victims of said wrongdoing (Barry & Wiens 2016; Butt 2014; Gosseries 2004; Page 2012). To initially steelman the solution to our puzzle, however, it is important to note that it is much less controversial to say that it is unjust to benefit from one's *own* wrongdoing than it is to say that it is unjust to benefit from the wrongdoing of *others*. Everyone should accept that it is generally unjust to benefit from one's own wrongdoing–regardless of one's view on benefitting from the wrongdoing of others. *Ceteris paribus*, it is worse to be a guilty beneficiary than an innocent beneficiary.

So, how can the idea of benefitting from one's own wrongdoing be used to resolve our puzzle? The basic idea is that when we prospectively distribute voting power in accordance with the AAP, we discount the interests of people enough so that they no

longer benefit from their own wrongdoing. To see how this works, let us consider some examples unrelated to carbon tax referendums. If we take the AAP at face value, it implies, for instance, that a homophobe who happily harasses gay people might have more voting power than straight people in a referendum on gay marriage. Likewise, a pedophile who happily rapes children might have more voting power than a non-pedophile in a referendum on whether to outlaw pedophelia; a thrill killer might have more voting power than a non-killer in a referendum on whether to outlaw murder, and so on. After all, the homophobe, the pedophile, and the thrill killer are, in one way at least, more affected than the rest of us by the referendum on whether to outlaw these horrible actions. Presumably, *one* problem with distributing more voting power to these groups of people is that it implies that they benefit democratically from their own wrongdoing. Their voting power is increased *because* of their wrongdoing. An obvious solution might therefore be to simply discount the interests of these groups of people to the extent that they no longer benefit from their own wrongdoing.

Perhaps the solution of discounting interests also works for our puzzle. Polluter Paul benefits democratically from polluting excessively. He already benefits just by having a lifestyle that involves polluting more than his fair share, whatever that amounts to exactly. But benefitting democratically by gaining voting power as a *consequence* of his excessive pollution might be considered a *further* injustice. If Paul's excessive pollution is indeed wrongful (we are not saying that it is), then it follows straightforwardly that Paul benefits from his own wrongdoing.[17]

Mimicking the solution to the problem of assigning too much voting power to the homophobe, the pedophile, and the thrill killer, one solution to our puzzle might then be to simply discount the interests of Polluter Paul. The Swiss government could discount Paul's interests exactly enough so that he is left with the voting power that he would have had, were it not for his excessive pollution. In other words, they could discount Paul's interests so that he is left with exactly enough voting power that he does not benefit from his own wrongdoing. For instance, suppose that Paul's fair share of pollution (again, whatever that amounts to exactly)–and the carbon tax bill that comes with it–entitles Paul to a voting power of 1. But suppose that because Paul pollutes more than his fair share–and that he therefore stands to pay a lot more in carbon taxes–Paul's voting power is now boosted to 5. But he has benefitted 4 points because he stands to pay a lot in carbon taxes as a result of his excessive pollution. Discounting his interests enough so that Paul does not benefit from his own wrongdoing would result in a subtraction of exactly 4 points from Paul's voting power so that he is back at 1 again. This at least decreases the voting power of Paul in a way that does not seem unreasonable, and that is not too ad hoc.

However, there are several reasons why the proposed solution does not work for *our* puzzle. Discounting the interests of the homophobe, the pedophile, and the thrill killer, may indeed be a simple way to avoid that these groups of people receive disproportionately large voting power. Even so, our puzzle is different. The first reason

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[17] For theorists arguing that polluting more than one's fair share indeed constitutes a wrong, see Baatz (2014); Bell (2013); Duus-Otterström (2014).

why the solution does not work for our puzzle is that discounting Polluter Paul's interests might not be sufficient to bring his voting power down to that of Virtuous Vera's. To see why, recall that Vera pollutes much *less* than her fair share. So, prospectively allocating voting power in accordance with the AAP still results in Vera's voting power being lower than that of Paul's. Arguably, part of the puzzle consists of the *relative* difference in voting power between Paul and Vera. But this difference persists even if we discount Paul's voting power so that he does not benefit from his own wrongdoing. Discounting may result in the difference being smaller, but there still is a difference. Moreover, in the Swiss referendum, the proposal was that people who *reduce* their total carbon footprint would be exempted from paying the carbon tax.[18] Under the Swiss carbon tax scheme, it would be impossible for the voting power of Paul and Vera to be on par, as long as Paul does not reduce his total carbon footprint while Vera does, because Vera's voting power would be exactly zero, and Paul's would be non-zero.

The second reason why the proposed solution does not work for our puzzle is the following. Paul does in fact not benefit from his own *wrongdoing*. The proposed solution presupposes that Paul benefits from his own wrongdoing–a wrongdoing consisting in polluting "more than his fair share", whatever that amounts to exactly. Surely, Paul benefits democratically from polluting, but it is far from clear that his pollution is wrongful–as excessive as it might be. For example, it is far from clear that Paul wrongs other people by his pollution, given that the problem of climate change is a collective action problem, and that Paul's pollution considered in isolation makes little to no difference. This is a hot topic of debate in the literature, and we have no intentions of settling it here. But there is also another factor that makes it unclear why we should regard Paul's excessive pollution as wrongful. The reason is that it is not clear why it is wrongful to pollute excessively under a carbon tax scheme that follows the logic of the PPP. To fully appreciate this point, remember that under such a scheme, every ton of greenhouse gas emitted is fully compensated for.[19] When Paul pollutes a ton of greenhouse gas, he also pays exactly enough to rectify the damages caused by his pollution. As long as he pays a proportionate carbon tax where the revenue is effectively directed at climate rectification, Paul can in principle pollute as much as he likes, and his pollution would still not be wrongful.

Now, one might object that our reasoning here is too quick and that it is not true that one can wrong other people as much as one wants to, as long as one fully compensates the victims. You cannot permissibly steal $100 from someone's wallet as long as you make sure to compensate the victim with $100 or something with the cash equivalent of $100. Stealing $100 from the wallet is wrongful, even if it is fully compensated. So why think that Paul can permissibly pollute as much as he likes, as long as he fully compensates for his pollution by paying a proportionate carbon tax?

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[18] See https://www.swissinfo.ch/eng/switzerland-votes-on-controversial-co2-law-/46695016.

[19] At least in some countries, such as Japan and France, 100 % of the revenue from carbon taxation is allocated to green investments (Carl and Fedor 2016).

To see why, note that denying that Paul can pollute as much as he likes as long as he compensates fully for his pollution, is incompatible with the very reasoning behind a carbon tax scheme that follows the logic of the PPP. The very idea of the carbon tax is to allow people to pollute, as long as they compensate fully for their pollution. That is what a carbon tax is meant to do. Denying that Paul can pollute as much as he likes as long as he compensates for his pollution is to reject the idea of having the carbon tax in the first place. Granted, one reason for introducing a carbon tax is to incentivize people to pollute *less*. But it is difficult to see why it matters how much people pollute, as long as they fully compensate for their pollution–presuming of course that the tax revenue is spent effectively.[20] So, to charge that Paul cannot permissibly pollute as much as he likes even if he fully compensates for his pollution requires a positive argument that does not itself imply that there should be no carbon tax scheme in the first place.

A rejoinder to this reply might be that regardless of whether the carbon tax is enacted, Paul has benefitted democratically in the referendum by having increased voting power, without compensating for his *historic* pollution at all. After all, the referendum takes place before Paul ever pays any carbon taxes. However, an easy fix to this problem would be to implement–prior to the referendum–a one-off retrospective carbon tax in addition to the prospective one on the ballot in Switzerland, so that historic pollution going back to some predefined period is fully compensated, regardless of the outcome of the referendum. This would prevent Paul from benefitting democratically from his historic pollution. This would also square nicely with the common view that the PPP is a retrospective or "backward-looking" principle, as Simon Caney calls it (Caney 2010: 205). Similar solutions involving retrospective one-off carbon taxes have already been tested in some of the 27 countries that currently have carbon tax laws in place.[21] A combination of a one-off retrospective carbon tax and a consumption-based prospective carbon tax would effectively block any objection to the effect that Paul does in fact benefit from his own wrongdoing, and that his interests should therefore be discounted to reduce his voting power.

V. Concluding Remarks

In this paper, we have argued that the AAP generates a puzzle when applied to carbon tax referendums. The puzzle, in a nutshell, is that people who pollute a lot receive more voting power than people who don't. This is puzzling for several reasons. First, it is instrumentally counterproductive if the goal is to rectify damages to the climate. Second, it introduces prudential incentives for everyone to pollute more to gain voting power. Third, the *relative* difference in voting power between people who pollute a lot and people who don't is puzzling from a desert-based point of view, given that the former often make a serious effort to avoid polluting while the latter don't.

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[20] One might think that this rejoinder requires that the carbon tax revenue is spent on climate *compensation* (such as replanting rainforests), rather than climate *adaptation* (such as building sea walls or dams). If this is a deal breaker, then an easy solution would be to start spending the carbon tax money differently.

[21] For examples, see https://earth.org/what-countries-have-a-carbon-tax/#:~:text=Carbon%20Tax%20Countries,%2C%20the%20UK%2C%20and%20Ukraine.

Before closing the paper, let us briefly return to an issue we set aside in the introduction. We noted that there are several relevant metrics of affectedness in a carbon tax referendum. One metric is being affected by *climate change itself*. Another metric is to be economically affected by *having to pay the carbon tax* if it is enacted. Throughout the paper, we have focused exclusively on the latter metric. However, things may look completely different if we instead focus on the former. If, for instance, Virtuous Vera is more affected by climate change than Polluter Paul–perhaps because she lives closer to the sea, or because she is younger than Paul–the distribution of voting power would suddenly look less puzzling. We noted in the introduction that being affected by climate change itself is practically very difficult to determine–much more so than being affected by having to pay a carbon tax. Moreover, it is difficult to deny that affectedness in terms of having to pay a carbon tax should at least play *some* role when voting power is distributed in accordance with the AAP. But, even if we were to count both metrics of affectedness, it would still be puzzling, we think, that Paul would *gain* voting power relative to Vera by polluting excessively. It seems questionable at best that *because* Paul has polluted a lot, he gains more voting power than Vera on one metric of affectedness, even if Vera ends up having more voting power than Paul *all things considered*.

Disclosure statement

The authors report there are no competing interests to declare.

References

Andrić, V. (2017). How do Affected Interests Support Global Democracy? *Journal of Global Ethics, 13*(3), 264-278.

Angell, K. (2020). A life plan principle of voting rights. *Ethical Theory and Moral Practice*, *23*(1), 125-139.

Angell, K. & Huseby, R. (2020). The All Affected Principle, and the weighting of votes. *Politics, Philosophy & Economics*, *19*(4), 366-381.

Arrhenius, G. (2005). The boundary problem in democratic theory. In: *Democracy unbound: basic explorations I*, 14-29.

——, (2015). *The All Affected Principle and Future Generations*. Mimeo 151105. Stockholm University, Department of Philosophy.

——, (2018). The democratic boundary problem reconsidered. *Ethics, Politics & Society*, *1*, 34-34.

Baatz, C. (2014). Climate change and individual duties to reduce GHG emissions. *Ethics, Policy & Environment*, *17*(1), 1-19.

Barry, C. & Wiens, D. (2016). Benefiting from wrongdoing and sustaining wrongful harm. *Journal of Moral Philosophy*, *13*(5), 530-552.

Bell, D. (2013). Does anthropogenic climate change violate human rights?. In *Climate Change and Liberal Priorities*, 15-40, Routledge.

Bengtson, A. (2020). Dead People and the All-Affected Principle. *Journal of Applied Philosophy*, *37*: 89-102.

Bengtson, A., & Lippert-Rasmussen, K. (2021). Why the All-Affected Principle Is Groundless. *Journal of Moral Philosophy*, *18*(6), 571-596.

Brighouse, H. and Fleurbaey, M. (2010) Democracy and proportionality. *Journal of Political Philosophy, 18*(2), 137–155.

Butt, D. (2014). A doctrine altogether new and untenable': defending the beneficiary pays principle. *Journal of Applied Philosophy, 31*(4), 336–348.

Caney, S. (2010). Climate change and the duties of the advantaged. *Critical Review of International Social and Political Philosophy*, *13*(1), 203-228.

Carl, J., & Fedor, D. (2016). Tracking global carbon revenues: A survey of carbon taxes versus cap-and-trade in the real world. *Energy Policy*, *96*, 50-77.

Christiano, T. (2016). The tension between the nature and the norm of voluntary exchange. *The Southern Journal of Philosophy*, *54*, 109-129.

Dahl, R. (1971). *After the Revolution? Authority in a Good Society*. New Haven and London: Yale University Press.

——, (1989). *Democracy and Its Critics*. New Haven and London: Yale University Press.

Duus-Otterström, G. & Jagers, S. V. (2011). Why (most) climate insurance schemes are a bad idea. *Environmental Politics*, *20*(3), 322-339.

Duus-Otterström, G. (2014). Individual climate obligations and non-subsistence emissions. *Ethics, Policy & Environment*, *17*(1), 27-30.

Erman, E., Kuyper, J. (2020). Global democracy and feasibility. *Critical Review of International Social and Political Philosophy*, *23*(3,) 311-331.

Goodin, R. E. (2007). Enfranchising all affected interests, and its alternatives. *Philosophy & public affairs*, *35*(1), 40-68.

⸺, (2016). Enfranchising all subjected, worldwide. *International Theory*, *8*(3), 365-389.

Gosseries, A. (2004). Historical emissions and free-riding. *Ethical Perspectives*, *11*(1), 38-62.

Jensen, K. K. (2015). Future generations in democracy: representation or consideration? *Jurisprudence*, *6*(3), 535-548.

Kingston, E. (2014). Climate justice and Temporally Remote Emissions. *Social Theory and Practice*, *40*(2), 281-303.

Koenig-Archibugi, M. (2020). Who Are the People? Defining the Demos in the Measurement of Democracy. *Political Studies*, 1-23.

Lindstad, S. (2021). Benefiting from Wrongdoing and Moral Protest. *Ethical Theory and Moral Practice*, *24*(3), 753-765.

Lippert-Rasmussen, K. (2015). A just distribution of climate burdens and benefits: a luck egalitarian view. In: *Climate change and justice, Cambridge University Press, Cambridge*, 107-128.

Lippert-Rasmussen, K., & Bengtson, A. (2021). The Problem (s) of Constituting the Demos: A (Set of) Solution(s). *Ethical Theory and Moral Practice*, *24*(4), 1021-1031.

Maltais, A., Rosenberg, J. H., & Beckman, L. (2019). The Demos and Its Critics. *The Review of Politics*, *81*(3), 435–457.

Miller, D. (2009). Democracy's Domain. *Philosophy & Public Affairs*, *37*(3), 201–228.

⸺,(2020). Reconceiving the democratic boundary problem. *Philosophy Compass*, *15*(11), 1-9.

Moellendorf, D. (2012). Climate change and global justice. *Wiley Interdisciplinary Reviews: Climate Change*, *3*(2), 131-143.

Näsström, S. (2011). The challenge of the all-affected principle. *Political Studies*, *59*(1), 116-134.

Neumayer, E. (2000). In defence of historical accountability for greenhouse gas emissions. *Ecological economics*, *33*(2), 185–192.

Owen, D. (2012). Constituting the polity, constituting the demos: on the place of the all affected interests principle in democratic theory and in resolving the democratic boundary problem. *Ethics & Global Politics*, *5*(3), 129-152.

Page, E. A. (2012). Give it up for climate change: a defence of the beneficiary pays principle. *International theory*, *4*(2), 300-330.

Parr, T. (2016). The moral taintedness of benefiting from injustice. *Ethical Theory and Moral Practice*, *19*(4), 985-997.

Pasternak, A. (2016). Benefiting from wrongdoing. *A companion to applied philosophy*, 411-423.

Ritchie, H. & Roser, M. (2020). India and USA: CO2 Country Profile. Our World in

Data. Retrieved January 26, 2022, from https://ourworldindata.org/co2/country/india?country=IND~USA

Rose, M. (2019). All-affected, Non-identity and the Political Representation of Future Generations: Linking Intergenerational Justice with Democracy. In *Intergenerational Equity*, 32-51. Brill Nijhoff.

Rosenberg, J. H. (2019). Equality, Proportionality, and the All-Affected Principle. *Democratic Theory*, *6*(1), 73-96.

Saunders, B. (2012). Defining the demos. *Politics, Philosophy & Economics*, *11*(3), 280-301.

Schaffer, J. K. (2012). The boundaries of transnational democracy: alternatives to the all-affected principle. *Review of International Studies*, *38*(2), 321-342.

Song, S. (2012). The boundary problem in democratic theory: why the demos should be bounded by the state. *International Theory*, *4*(1), 39-68.

Tännsjö, T. (2007). Future people, the all affected principle, and the limits of the aggregation model of democracy. *Hommage à Wlodek. Philosophical Papers Dedicated to Wlodek Rabinowicz*.

Whelan, F. G. (1983). Prologue: Democratic theory and the boundary problem. *Nomos*, *25*, 13-47.