Journal of
APPLIED PHILOSOPHY

Journal of Applied Philosophy, Vol. 42, No. 1, February 2025
doi: 10.1111/japp.12794

Special Issue on Procreation, Intergenerational Justice, and the Climate Crisis
Guest Editors: Serena Olsaretti and Isa Trifan

My Child, Whose Emissions?

SERENA OLSARETTI AND ISA TRIFAN

ABSTRACT *The Moral Equivalence Thesis claims that procreation in affluent countries and eco-gluttony are morally on a par, and that both are impermissible. We argue that this ambiguates between two different theses, the Strict and the Lax. On the Strict Reading of the thesis, procreation and eco-gluttony are both wrong for the same reasons, that is, because both involve individuals overstepping their carbon budget. We argue that this is false at least with regard to a certain number of children and a range of the costs of children. By contrast, a Lax Reading of the thesis is, we think, defensible. On this reading, procreation and eco-gluttony may both be wrong, but for different reasons and under different conditions. While eco-gluttony is wrong across a range of ideal and non-ideal conditions because it is a failure to live within one's fair carbon budget, having a child is only wrong, if it is wrong, under non-ideal conditions where prospective parents have weighty reasons, or an obligation, to pick up the moral slack of others.*

1. Introduction

Concerns about population pressure have garnered renewed attention in the context of the ongoing climate crisis. Both academic and public debates now frequently explore the idea that the choice of having a child has negative environmental externalities which must be measured and which bear on the moral permissibility of procreation.[1]

To introduce an argument that those concerns have given rise to, consider the following example:

> *Pat and Pam* are a 30-year-old, middle-class couple living in the US. They are environmentally minded and as well as voting Green they do what they can, through their individual actions, to help stop climate change. They recycle, give up their car, buy second-hand goods whenever they can, eat a plant-based diet, avoid transatlantic flights, and try to consume only what they need. Pat and Pam are now deciding whether to have their first child. They go ahead and have one.

The standard view is that Pat and Pam do nothing wrong by having a child, and that, in fact, they are admirably trying to live up to their climate justice obligations. Several philosophers argue this standard view is a mistake. They argue that Pat and Pam are in one important respect as much in violation of their climate justice obligations as:

> *Noa and Neil*, another 30-year-old US-based couple, are not environmentally minded. They do not recycle, drive everywhere in an SUV, buy large amounts

of newly produced clothes and other goods they do not need, regularly eat meat and dairy, often take transatlantic flights, and decide to not have children because they love their life as it is.

The view that the choice of Pat and Pam to have a child is as wrong as the choice of Noa and Neil to live an eco-gluttonous lifestyle is an expression of the *Moral Equivalence Thesis*, the thesis that (in affluent societies) having even just one child and eco-gluttony are morally *on a par* and both are impermissible.[2] As we characterise it, the argument for this revisionist thesis unfolds in the following steps.[3]

1. The emissions of having a child, as well as the emissions from one's own consumption, are part of the carbon footprint of the person who chooses to have a child and to consume. That is, those emissions belong to that person in a sense that is relevant for her moral responsibility (the Attribution Claim).

This first step of the case for the Moral Equivalence Thesis is consistent with believing that procreation and consumption are different in many respects. But it highlights that it is true of both the choice to have a child and the choice to consume goods and services that the emissions that predictably result from them are attributable to those who make those choices.

2. In an affluent society, the emissions of having a child are so high that a procreator's carbon footprint is as high as (or even higher than) the carbon footprint of an eco-glutton (the Measurement Claim).

'Eco-gluttony' is conspicuous consumption of the kind Noa and Neil engage in. To see why the Measurement Claim is made, consider this: according to recent studies, the choice of Pat and Pam to have a child will have a carbon footprint of 9,441 tCO2e (tonnes of carbon dioxide equivalent) if that child is like the average American and if we continue emitting as usual.[4] To get a sense of how high this is, note that while Pat and Pam's green lifestyle means they each reduce their yearly carbon footprint by roughly 4.5 tCO2e compared to the average American, if they chose not to have their child this could yield a yearly footprint reduction of 58.6 tCO2e.[5] As one study observes: 'a US family who chooses to have one fewer child would provide the same level of emissions reductions as 684 teenagers who choose to adopt comprehensive recycling for the rest of their lives'.[6]

3. The difference in value between procreation and consumption, if there is one, does not make a difference to whether a person fails to comply with her climate justice obligations by choosing one or the other (the No Difference Claim).

Procreation and eco-gluttony might appear to differ in evaluative terms. For example, procreation may realise fundamental interests while eco-gluttony might not. Or procreation may create something of intrinsic value and eco-gluttony may not. But according to the No Difference Claim, these differences are either illusory or irrelevant for determining whether someone is complying with their climate justice obligations when procreating or when consuming.

The No Difference Claim expresses the idea, often discussed in this debate, that 'procreation is not special'.[7] However, note that the idea that procreation is not special can also be used to mean two things other than the No Difference Claim. The first is that

we should not exempt procreative choice from an environmentally minded assessment of people's lifestyles. As MacIver writes, '[t]here is no credible reason to exclude procreative claims as such, merely because they are procreative'.[8] The second is the claim that eco-gluttony and procreation are morally *on a par* from the perspective of our climate justice obligations (i.e. what we here call the Moral Equivalence Thesis, which is the *conclusion* of the argument of which the No Difference Claim is a premise).

4. *Therefore, from the point of view of our climate justice obligations, procreation and eco-gluttony are on a par* (from 1, 2, and 3) and both are impermissible (the Moral Equivalence Thesis).

If the Moral Equivalence Thesis is justified, individuals in affluent countries should choose to abstain from having even just one child. This is assuming that principles of justice generate reasons for action for individual decision-making.[9] Additionally, or alternatively, some institutional implications might follow. The Thesis may justify governments' adoption of some incentives and deterrents that would be effective in discouraging procreation, compatibly with respecting fundamental rights. These measures would be justified just as a carbon tax for luxury goods or the withdrawing of subsidies for animal farming may be justified, rendering meat and dairy consumption more costly so people will engage in less of it.[10]

The Moral Equivalence Thesis is thus revisionist both in its assessment of the ethical status of individuals' choices and in its policy implications. Fertility rates are already dwindling in developed countries, and some are calling for measures to *increase* procreation. And yet in exactly those countries, the Thesis says that procreation is impermissible.[11]

The Moral Equivalence Thesis (henceforth MET) is the focus of this article. We believe that there is both something counterintuitive and something intuitive about this thesis. On the one hand, for example, it seems odd to think that my children's, and my grandchildren's, and my great-grandchildren's emissions are mine in any relevant sense. In terms of 'moral accounting', we may say, my child's emissions are my child's, not mine, just as my emissions are mine, not my parents'. On the other hand, it seems undeniable that the carbon legacy of an additional child, as Murtaugh and Schlax measure it, does identify something of moral relevance, namely, the very significant difference an adult can singlehandedly make to overall carbon emissions by having one fewer child.[12]

Our central aim in this article is to show that we can vindicate *both* these seemingly contradictory intuitions. It is possible to do this because, we argue, MET as it has been formulated thus far, both by its defenders and by its critics, ambiguates between two different claims, which it is important to distinguish in order to arrive at a sound view on the permissibility of procreation in light of climate justice considerations.[13]

On the first, *Strict Reading*, MET holds that procreation in affluent countries and eco-gluttony are both wrong *for the same reasons*, that is, they are both wrong as both involve *individuals overstepping their carbon budget*. On this reading, if eco-gluttony is wrong, then, by entailment, procreation is also wrong if it produces the same emissions as eco-gluttony and if there is no difference in value between them. It would be true of MET thus understood that the argument for it is 'analogical', and that 'consistency' and 'logical considerations alone' commit us to the conclusion that 'one should be opposed to both [procreation and overconsumption] or in favour of both'.[14] That is, if the Strict Reading is correct, we *must*

condemn procreation if we condemn eco-gluttony. Conversely, if we wish to condone procreation, then we must also condone eco-gluttony.

There is also a *Lax Reading* of MET, which defenders sometimes seem to be upholding, on which procreators in affluent countries, although they might remain within their carbon budget by having one child, violate an obligation they have, or at least act against weighty moral reasons they are under, because of the highly non-ideal circumstances they are in. We call this the *Lax* Reading of MET because it does not establish that procreation in affluent countries is wrong *for the same reasons* that eco-gluttony is wrong. Instead, when they are both wrong, eco-gluttony and procreation are wrong for different reasons and under different conditions. Accordingly, it is not necessarily the case that one should be opposed to both or be in favour of both, even if they produce the same emissions and even if there is no difference in value between them.

When these two different versions of MET are distinguished, we can better assess each one of them. Our view is that the Strict MET is false and that at least one version of the Lax MET is defensible. This conclusion matters both because, as mentioned earlier, it reconciles two seemingly contradictory responses to MET, and because it makes clear that insofar as it is true that procreation is wrong from the point of view of climate justice, this is not entailed by the truth of the claim that eco-gluttony is wrong. Offering this analysis is the central aim of our article.

Our article also accomplishes a second, corollary aim, which is to show how ostensibly empirical claims regarding the carbon footprint of an additional child in fact reflect various normative commitments, which need to be defended. We claim that there is no single, neutral measurement of what the 'carbon footprint' of procreation is. Rather, there are several possible measurements whose justified use depends on the normative task we are engaged in. In this context in particular, it depends on what exactly is meant when we say that a certain footprint is 'attributable' to the procreator, and what the conditions are for attributability in that sense.[15] In other words, we contend that the first step in the argument for MET, which we called the Attributability Claim, does crucial work in determining which measurement of the carbon footprint of procreation we are justified in using. Despite appearances, the Measurement Claim is not a purely empirical, neutral claim.

Our discussion proceeds as follows. In Section 2, we introduce some key concepts that allow us to distinguish between the Strict and Lax readings of MET. We critically examine MET in each of these readings in Sections 3 and 4 respectively.

Before moving on, some clarifications are in order, as they help defuse some worries about any argument for reducing population size, and *a fortiori*, about MET, which may otherwise distract us in the discussion below.

(i) No one in the debate at hand suggests that children lack value and that their claims should not be attended to; the argument for MET is an argument for why individuals in affluent countries should have fewer children out of regard for third parties (mainly, future generations), and not about what should be done for those children once they exist.

(ii) Defenders of MET are not defenders of compulsory sterilisation or of other rights-violating measures, and most of them oppose coercive measures altogether.[16] They are aware of the problematic history of population control measures and of its gender dimension and unjust impact on vulnerable groups (e.g. poorer, racialised groups). Instead, they mostly enjoin individuals to

voluntarily refrain from procreating, or defend the provision of widely available contraceptive methods and women's education. Some other proposals involve taxation for families with more than two children[17] – which could be income-sensitive, so as to avoid compounding injustice against the worse-off – or tradeable procreative entitlements.[18]

(iii) The scope of the application of MET, as intended by its defenders, is limited and does not extend to most procreation in non-affluent countries. The main reason for this is that an average individual's carbon footprint is extremely low in non-affluent countries and so, accordingly, is the carbon footprint of procreation. In contrast with the 9,441 tCO2e figure for an additional child in the US (under the constant emissions scenario), the footprint of a child in Mexico is 1,241 tCO2e, 721 tCO2e in Brazil, and as low as 56 tCO2e in Bangladesh.[19] Additionally, MET applies only to the children for whose existence one is morally responsible, whether by voluntary procreation or commissioned surrogacy.

(iv) It is not an argument against MET that it commits us to favouring human extinction which, we grant here, would be an implausible implication of the view. Defenders of MET can say that *some* procreation may and will permissibly continue to happen, in line with the restricted scope of the thesis.

(v) We think it is possible to formulate a version of MET that answers an unaddressed question in this debate which cries out for treatment, that of how to reconcile the injunction to stop having children in affluent countries with these countries' need for some demographic replacement. A one-sided focus on the latter issue animates many discussions of family policies in the social sciences, which often come down in favour of pro-natalist interventions.[20] Defenders of MET, by contrast, focus exclusively on the negative environmental externalities of procreation, overlooking that the continuation of any society requires demographic replacement. Both these tendencies are misguided.[21] The view we sketch below acknowledges affluent societies' need for demographic replacement.

(vi) The discussion of MET to date, and in what follows, proceeds within an anthropocentric framework and on the assumption that our obligations to curb emissions, whether by avoiding eco-gluttony or by not procreating, are ultimately owed to human beings. However, it is possible to formulate a revised, non-anthropocentric version of MET on which the obligation to curb emissions is also owed to non-human animals, and which registers mechanisms other than emitting whereby procreation and eco-gluttony harm both non-human and human animals (e.g. by destroying habitats and depleting natural resources that non-human animals depend on).[22] We are sympathetic to this possibility but do not develop it here.[23]

(vii) A few remarks are in order about some crucial empirical facts that bear on MET. (a) Some argue that reductions in population size cannot help us meet our immediate, most pressing climate goals.[24] We assume that even if this were true, a reduction in population size would be relevant nonetheless. It would help us maintain those goals, reach longer-term goals (e.g. beyond 2050), and minimise harm if we fail to reach the goals we should be implementing now. (b) We assume it is not certain that the addition of new people to the population will be rendered sustainably carbon neutral by other, non-population-based climate measures. (c) We assume it is not possible, or else not permissible, for a procreator to offset the carbon footprint of their procreative choice, that is, to make it the case that

emissions that are attributable to the procreator will be taken out of the atmosphere (e.g. through planting enough trees or through carbon capture technology) or cancelled out (e.g. as a result of the procreators funding wind energy for others).[25]

2. Carbon Emissions Attribution and Responsibility: Some Key Distinctions

To see that there are two different readings of MET, we need to introduce two related distinctions that have been overlooked when talking about the 'environmental impacts of different lifestyles'.[26] The first is a three-way distinction between different things we might be referring to when we say that a measure of emissions *is attributable* to someone in a sense that is relevant for their moral responsibility.

Individual carbon budget (*or allowance*): The amount of changes to total emissions in the atmosphere that each of us is assigned as a matter of right, that is, that each is morally entitled to make, compatibly with the relevant claims of others (where these claims are set, minimally, so as to avoid catastrophic climate change, but may be more demanding).

Individual carbon footprint (narrow): The amount of changes to total emissions in the atmosphere that is attributable to a person for the purpose of 'keeping tabs' on whether she is living within her carbon budget or whether she is above it; this is the amount of changes to total emissions that should be paid out of her budget.

Individual carbon footprint (broad): The amount of changes to total emissions in the atmosphere that a person is answerable for causing or not causing, or for allowing or not allowing to be caused, even though this does not count as using up her carbon budget.

The second distinction it is helpful to introduce is between three different claims we might be making when we refer to individuals' *moral responsibility* for their choices, including choices which result in a certain amount of emissions' being attributed to them.[27]

Fair shares liability: Someone can be morally responsible in the sense that she should *bear or internalise some costs of the choices* she makes, lest she encroach on other people's fair shares (of resources, opportunities, etc.). For example, to say that I am morally responsible for my gambling losses is to say that it is fair that *I* bear those losses, and relatedly, that it would be unfair to others to make them share those losses with me. In the case we are interested in, I can be morally responsible for my emissions in the sense that I am liable, that is, must pay the costs of those emissions from my carbon budget, so as to respect everyone's fair shares to some amount of emissions.

As should be clear, judgements about fair shares liability implicate the notions of *carbon budget* and of *carbon footprint (narrow)*. To arrive at judgements regarding someone's fair shares liability, we need to know both what her carbon budget is, and what carbon emissions it is justifiable to charge to her budget and why: this is what her carbon footprint (narrow) identifies. Judgements of fair shares liability are thus the upshot of several normative, as well as empirical, considerations. We elaborate on this point in the next section.

Answerability for choices (other than fair shares liability): Someone can be morally responsible in the sense that they are answerable, morally speaking, for doing or failing to do many things other than staying within their fair shares. Sometimes we even have weighty moral reason to do something that involves acting *in violation* of our fair share. For example, I may have to externalise the costs of my choices in order to avert serious harms, for example, by stealing so I can avert serious harm. Sometimes – more pertinently for our

discussion below – I may be required to act in a certain way in order to avoid harm even though I would not be exceeding my share if I failed to act this way.

As illustration of this, imagine a fantastical example in which I am the only person who can press a button that allows new natural resources to fall from the sky, and that pressing this button has no cost for me. I am clearly *answerable* for pressing or not pressing that button; I am morally responsible for pressing that button in that sense.

As should be clear, *this sense* of moral responsibility is at issue when we talk about people's carbon footprint (broad).

The two senses of moral responsibility we have identified so far differ from a third one.

Praiseworthiness and blameworthiness: I may be justifiably praised or blamed if I comply, or fail to comply, respectively, with the requirement to internalise the costs of my choices so as not to encroach on others' fair shares. I may also be justifiably praised for doing what I am answerable for doing, or blamed for failing to do this.

In what follows, we leave this sense of responsibility aside, as we do not think that it should be the central concern of MET, though some philosophers may also have this kind responsibility in mind. From now on we only focus on the first two senses of moral responsibility, and will refer to them as liability and answerability *simpliciter*.

This brief discussion of different senses of responsibility is enough to see how the attribution of a certain amount of emissions to someone – the Measurement Claim – is normatively loaded. More specifically, it is normatively loaded in two related ways. First, the amount of emissions we are justified in ascribing to someone depends on the sense of responsibility that the attribution is relevant for (whether it is fair shares liability or answerability); second, the amount of emissions that constitutes someone's carbon footprint (narrow and broad, respectively) will reflect a particular, substantive view of what fair shares liability, or answerability, requires. That is, which particular amount of emissions constitutes someone's carbon footprint (narrow) and carbon footprint (broad) depends on our substantive moral view about what people are liable for in fairness to others, and on our view about what they are answerable to do or not do besides staying within their fair share of emissions.

3. The Strict Reading of the Moral Equivalence Thesis

With these distinctions in mind, we can now offer a fuller characterisation of the first reading of MET. The Strict Reading of MET holds that procreation in affluent countries and eco-gluttony are both wrong *for the same reasons*. The reasons why both are wrong is that both involve *overstepping our carbon budget*. The Strict Reading tells us that by having a child and by engaging in conspicuous forms of overconsumption we are overstepping our budget, thereby violating others' claims to their fair shares, that is, to their carbon budgets. Both choices are, therefore, impermissible.

The argument goes as follows:

1* The emissions of having a child, as well as the emissions from one's own consumption, are part of one's carbon footprint (narrow), that is, they should be covered by the carbon budget of the person making the procreative and the consumption choice.

2* In an affluent society, the emissions of having a child are so high that a procreator's carbon footprint (narrow), just like the carbon footprint (narrow) of an eco-glutton, exceeds their carbon budget (by at least the same amount).

3 The difference in value between procreation and consumption, if there is one, does not make a difference to whether a person fails to comply with her climate justice obligations by choosing one or the other.

4* Therefore, from the point of view of our climate justice obligations, procreation and eco-gluttony are on a par (from 1*, 2*, and 3) and both are impermissible (the Strict Moral Equivalence Thesis).

Thus understood, MET clearly rests on an analogical argument, such that one could not consistently condemn eco-gluttony but condone procreation (this, as mentioned above, is what Young means by referring to the argument as 'analogical'). This section unpacks the assumptions behind this reading of MET and shows why it is indefensible. To anticipate: we do not take issue with 3. Instead, we argue that 1* is unjustified, at least regarding a certain number of children and a certain range of the costs of children; and accordingly, 2* is also unjustified. We think that our claims likely apply to having one child and to the costs of giving that child their fair share of the carbon budget: with regard to these costs, it is not the case that they should be attributed only to the procreator, and it is also not the case, therefore, that the procreator oversteps her carbon budget by having even just one child. 4*, then, is unjustified.

The judgement that Noa and Neil live in excess of their carbon budget presupposes, first, that each person is assigned a fair share of emissions. Just how large this budget is depends on several considerations, including partially empirical ones about what the total amount of emissions is that humanity can produce at any given point, compatibly with protecting relevant human and non-human interests now and in the future; and about how it is fair to apportion that total amount of emissions to persons now and in the future. Here, principles of justice that specify what entitlements present and future persons have – for example, entitlements to having enough, or to fare equally in some sense – will be invoked and need defending.[28] Without entering discussions about these considerations here, it is safe to assume that each individual's budget will include those emissions that, under specified conditions,[29] are necessary for the consumption of goods involved in meeting basic needs, and some more or less generous, but limited, amount of consumption above that. That is the budget which Noa and Neil, and Pat and Pam, are assumed to have.

Second, the judgement that Noa and Neil's lifestyle choices are in violation of their climate justice obligations also presupposes that we have an account for determining the share of emissions created in producing, transporting, and delivering the goods and services they consume that are *justifiably attributable to* Noa and Neil, that is, charged to their budget. Consider, for example, the emissions created by the flights that Noa and Neil take. An account of fair shares liability will attribute some of those emissions to Noa and Neil, and some to other individuals, including to producers such as airline owners and their employees, and to other consumers. The grounds for charging a certain amount of emissions to individuals could invoke the fact that they chose to engage in activities they knew produced those emissions, or that they benefited from those activities, among others.[30]

With eco-gluttony of the kind Noa and Neil indulge in, it appears obvious that the emissions they are justifiably asked to cover exceed their carbon budgets – this is what we arguably imply when we characterise their consumption levels as 'eco-gluttonous'.[31] Noa and Neil are, then, encroaching upon the fair shares of others, and are in violation of their climate justice obligation to live within their budget.

Now consider what making a comparable claim about procreators presupposes. First, it presupposes that each individual's budget, while it includes, as noted above, some amount of permissible emissions for consumption, does not include an allowance of emissions specifically to cover some procreation. Second, the claim at hand presupposes that the emissions that will be produced by Pat and Pam's child, including those which that child will have a right to produce, should be paid for *entirely* out of Pat' and Pam's budget.[32]

To see this claim more clearly, compare it to the claim that all people who now exist and those who will come into existence are entitled to a basic income stipend and that the costs of providing that basic income stipend should be paid by each person's procreators, rather than by everyone.[33] If prospective procreators cannot internalise the full costs of providing their child with a basic income stipend, they should not on this view have a child, as to do so would be to wrongfully externalise the costs of their choices onto others. The defender of the Strict Reading of MET makes a similar claim about procreators' liability for the environmental, rather than the financial, costs of procreative choice.

Some defenders of MET explicitly make the (undefended) assumption that all of the emissions that a child will likely foreseeably cause should count as part of the parents' carbon footprint (narrow). Young's version of MET is an example of this: in making the case for the outsized environmental impact of procreation in an economically developed country like the US, Young attributes to parents the *full* lifetime environmental impact of their children.[34] Other commentators can be read as making a similar assumption.[35] In addition to the lifetime emissions of one's child, some commentators attribute to the procreator a gradually diminishing share of the lifetime emissions of further descendants, reflecting the initial procreator's diminishing degree of genetic relatedness to them.[36] Finally, some defenders of MET argue that the carbon footprint of procreation should include a subset, rather than all, of the lifetime emissions of the children. For example, MacIver argues that parents should be held responsible only for those emissions that children (both when they are children and after they become adults) have no choice but to make if they are to live a decent life, and perhaps also for those emissions that they must produce if they are to participate 'normally' in their society without facing significant hardship.[37]

These differences between defenders of the Strict MET do not undermine our point. Insofar as these views assume that *at least* the emissions that newcomers have a right to produce – their carbon budget – ought to be covered by procreators' own budget, these views, we think, should be rejected, for reasons that are easier to see now that the assumptions that undergird the thesis are fully in view.

The Strict MET assumes a particular view of how the costs of children should be distributed. It assumes that for *any* child, only its procreators are fairly liable for all, or nearly all, the emissions that this child will foreseeably produce. It is by dint of assuming this view of fair shares liability with regard to the costs of children (expressed in 1*) that the Strict MET can affirm that *procreators*' carbon footprint (narrow) exceeds their carbon budget just by having one child (as 2* asserts). We think this view is mistaken: *at least for a certain number of children*, *non-procreators as well as procreators are liable* for *some* of the costs of children. More specifically, we submit, for that number of children that constitutes demographic renewal that benefits everyone, non-procreators as well as procreators should be liable for the emissions that those children will *have a right to produce*. To support this

claim, we first elucidate it and then show that the convictions it expresses are presupposed by other, intuitively plausible claims about individuals' carbon footprint and budget.

A defensible account of fair shares liability, as several scholars have argued, must be sensitive to considerations about how to treat fairly those who produce public goods, goods which, while only some individuals produce them, benefit others too.[38] Those who benefit from the production of at least some such goods – those that everyone has reason to want, or those that are necessary for the continuation of society and the maintenance of just institutions – are liable for some costs of their production. Demographic replacement, and therefore some procreation, is one such public good: new waves of generations are necessary to maintain institutions that serve non-procreators', as well as procreators', interests. An interest in welfare provisions, including pensions, immediately springs to mind here, but in fact, *all* welfare provisions require new waves of taxpayers and workers. So it is not just when we are old that we benefit from demographic renewal: we benefit throughout our lives.[39] It would be unfair to procreators if only they were required to cover the costs of beneficial demographic replacement.

There is a dispute about what level of demographic replacement is beneficial. We cannot settle this here as it would require addressing several complex questions, including the question of what level of demographic replacement is optimal, desirable, or legitimate, and the possible reliance on so-called replacement migration as an alternative source of demographic replacement.[40] However, this much can be said: it is implausible to hold that no amount of local procreation in affluent societies counts as beneficial. This is because every society needs younger generations to maintain its socio-economic and political institutions, and it is unrealistic to think that any society could achieve its needed level of demographic replacement by relying wholly on the one alternative source of demographic replacement, that is, immigration. Some amount of local procreation will always be needed in affluent societies, as well as anywhere else. We think we can assume, then, that one child per family, for a declining but stabilising population, is likely to be licensed by fair demographic replacement. (Defenders of MET, who do not even address this point, do not show otherwise.) For that number of children and the costs of giving them their carbon budget, *everyone* should be charged, not just those children's procreators.[41]

Accordingly, it is a mistake to claim that, when they procreate, *only* Pat' and Pam's carbon footprint would increase. Instead, Noa and Neil's carbon footprint will also be affected, as will be the footprint of all other non-procreators, who benefit from the public goods that Pat and Pam's child helps produce. What justifiably registers as an increment to Pat and Pam's footprint of creating a child, then, will be much more limited than the defender of the Strict MET assumes. More specifically, in fact, if Pat and Pam's child will be as environmentally minded as her parents are, Pat and Pam's carbon footprint will remain considerably lower than that of Noa and Neil even after the former have a child, as *all* four adults should share in the costs of giving the new child the carbon budget she will live within. Under these assumptions, the intuitive judgement that Pat and Pam do nothing wrong by having a child while Noa and Neil do something wrong by living their eco-gluttonous lifestyle stands vindicated.

The claim we are defending about fair liability for public goods provision is in line with other familiar and plausible claims. Consider the claim, accepted by environmentalists, that each person's carbon footprint (narrow) also includes 'those GHG emissions that are necessary to run a country's main collective institutions and infrastructures … public emissions that have to be shared out between all citizens, but are not directly tied to that

individual's behaviour and consumption activity'.[42] This too is a claim that has its justification in an account of how it is fair to distribute the costs, as well as benefits, of public goods production, and which we are applying to demographic renewal.

Furthermore, the view that the environmental costs of at least some number of children should be shared across everyone, not just procreators, is, in fact, *implicit* in how we standardly determine individuals' carbon budgets. To illustrate: when we assign to Pat and Pam and Noa and Neil a carbon budget, we *assume*, and *rightly* so, that their carbon budget is *constrained* by the fact that they are among a number of individuals who exist *now and in the future*; this is *why* we do not assign to Pat, Pam, Nora, and Neil *all* the atmospheric capacity there is to be used up.[43] We implicitly assume that they have to share atmospheric capacity with members of future generations, that is, with someone's children (and not necessarily their own children); this is why their carbon budget must be a *sustainable* budget.[44]

4. The Lax Reading of the Moral Equivalence Thesis

We believe a more plausible reading of MET is available. On this reading, procreation and eco-gluttony may be morally on a par, but only in the lax sense in which both may be wrong from a climate justice standpoint. Crucially, even if both are wrong, they are wrong for different reasons and under different conditions. Eco-gluttons, we have seen, are guilty of overstepping their carbon budgets. By contrast, procreators in affluent countries, although they might remain within their carbon budget by having a child, violate a weighty reason or obligation they have under non-ideal conditions to prevent the emissions associated with their procreative choice.

The argument for this different reading of MET goes as follows.

1** The emissions of having a child are part of one's carbon footprint (broad), that is, they are emissions that one has weighty moral reasons, or an obligation, to prevent, even though, unlike the emissions of one's consumption, they are not part of one's carbon footprint (narrow).

2** In an affluent society, the emissions of having a child are so high that a procreator's carbon footprint (broad) is as high or higher than the emissions that constitute the carbon footprint (narrow) of an eco-glutton.

3 The difference in value between procreation and consumption, if there is one, does not make a difference to whether a person fails to comply with her climate justice obligations by choosing one or the other.

4** Therefore, from the point of view of our climate justice obligations, both procreation and eco-gluttony are impermissible (from 1**, 2**, and 3) (the Lax Moral Equivalence Thesis).

To anticipate: we think this argument for the Lax MET is plausible but do not defend it in full here. In what follows, we offer some support for the weaker formulation of its normative premise (1**, which we call the Broad Attribution Claim), which establishes that prospective parents have weighty reasons to have one fewer child. We show that this premise does not overgeneralise and does not rely on an implausible view of answerability, and we explain why the measurement claim (2**) is justified here. Whether these weighty reasons amount to an obligation to have fewer children will remain an open question. Our

main concern is to bring to view that the nature and the conditions for the purported obligation to have one fewer child are different from those for the obligation not to overconsume. We show that, at least for people like Pat and Pam, their purported obligation is to pick up the slack for eco-gluttons like Noa and Neil. It therefore must rest on a different argument from that given for why Noa and Neil have an obligation not to overconsume. It is not the case, with the Lax MET, that consistency and logical considerations alone commit us to the conclusion that we should be opposed to both procreation and overconsumption or in favour of both. (The Lax MET, then, cannot deliver what defenders of MET like Young wish for.)[45]

Note that, as before, we leave 3 (the No Difference Claim) unchallenged. We think that potential differences between procreation and consumption that rely on perfectionist value judgements, even if they exist, are not suitable grounds in an argument about our justice obligations.

The argument for the Broad Attribution Claim starts with the basic idea that if we are well placed to help avoid or reduce harm, we ought to do so, at least when this is not unreasonably burdensome for us.[46] It is widely accepted that unchecked climate change would involve significant harms befalling a great many people. The failure to secure key climate goals such as keeping warming to 1.5 degrees by 2100 would involve not only harms, but widespread violations of human rights, which makes avoiding this outcome especially morally urgent.[47] If choosing to have one fewer child, even if this child would be one's only child, is not unreasonably burdensome, and if acting this way can be expected to contribute to reducing the risk of harm to some individuals, prospective parents may thus have weighty reasons or an obligation to do so. (We say a bit more about the burdensomeness issue later.) Crucially, this is the case even on the assumption that prospective parents are already doing their fair share in tackling climate change: the claim that individuals may have reason or an obligation to alleviate harms by refraining from having a child does not rely on the claim that they are morally responsible for causing that harm in the first place. Rather, it can be sufficient that they are particularly well placed to alleviate harms.

The paradigmatic illustration of this kind of weighty reason or obligation involves someone who comes across a child drowning in a pond.[48] The passer-by, by dint of being near the pond at the right time and capable of rescuing the child, has an obligation to do so, assuming the costs to him are not unreasonable. Similarly, if I find myself at the edge of the Amazon rainforest just as a fire takes hold, and I have the ability to stop it from spreading at no unreasonable cost to myself, I have weighty reason or an obligation to do so even if I have not caused the fire. The Lax MET says something similar about Pat and Pam: they are especially well placed to prevent or reduce environmental harm by refraining from having a child and, as a result, have weighty reason, possibly even an obligation, to do so.

A would-be procreator is especially well placed, both practically and morally, to prevent 100% of the emissions of their child and of further descendants because, by contrast to most other individual choices that can reduce global emissions, the choice to refrain from having a child is one that we are (i) morally permitted to make, (ii) uniquely (justifiably) legally entitled to make, and such that (iii) we are able to singlehandedly *ensure* that a chain of emissions is not produced. To elaborate: (i) is the widely held assumption that individuals are under no moral duty to have children.[49] Moreover (this is point (ii)), it is relevant, we think, that they enjoy a protected sphere of authority over their procreative choices. Each one of us alone holds the morally justified, legally protected prerogative to decide whether or not to have a child. (Recall that we are assuming that coercive measures that

make it impossible for individuals to have a child are impermissible.). Third, each procreator has the ability to be singlehandedly successful at preventing the emissions their children would cause by not procreating. No one else's agency is required for me *to succeed in preventing* all the emissions that would flow from *my* procreative choices.

To illustrate the relevance of these three features for the reasons for actions that individuals have, we can compare the position of procreators to that of IVF doctors, or others who 'aid' procreation. Even if an IVF doctor is allowed to abstain from providing treatment to a prospective procreator, the latter retains the right to try and procreate in other ways (by turning to another IVF clinic, or by continuing to have sexual intercourse in the hope they might conceive). Relatedly, the doctor's refusal to provide IVF treatment cannot guarantee that the chain of emissions that this prospective procreator's choice would set in motion is halted. No IVF doctor, then, has the morally and legally protected prerogative to make a choice that is guaranteed to prevent a very long chain of emissions from being set in motion. The procreator thus has an opportunity to prevent harm that others lack. This is why she has a weighty reason, and perhaps an obligation, to not have a child. This is also why, as mentioned at the start of this section, the argument here is not subject to the objection that the procreator's obligation would overgeneralise.[50] The Broad Attribution Claim tracks parents' unique moral and practical power to prevent emissions, not merely their causal role in setting them in motion. We agree with others[51] that mere causal responsibility is insufficient for establishing an obligation or even a weighty reason to prevent emissions. We agree, further, that mere ability to make a difference to total emissions is also insufficient.[52] The argument sketched here, rather, points to the difference to total emissions that procreators are *morally answerable for* in virtue of the unique and final moral authority they have over their own procreative choices.

Let us now turn to the second step in the case for the Lax MET, the Measurement Claim. Recall that this states that in an affluent society the emissions of having even just one child are at least as high as the emissions of eco-gluttony. As we noted earlier, which measurement of the emissions that result from having a child it is appropriate to use depends on what sense of attributability is in question. In the previous section, we argued that if attributability as fair shares liability is at issue, the Measurement Claim is false. It is not true that, by dint of having even one child, a person's carbon footprint (narrow) is so significantly increased. By contrast, if the purpose is to measure the emissions someone is answerable for preventing, the Measurement Claim is correct. In fact, on our view, the range of emissions attributable to a person for this purpose is larger than typically thought.

As mentioned earlier, some defenders of MET assume that we may attribute to procreators the full lifetime consumption costs of children.[53] More recently, others go further and adopt the view that each procreator is responsible not only for 50% of their child's lifetime emissions, but also for 25% of their grandchild's lifetime emissions, and so on, following a principle of discounting for degree of genetic relatedness.[54] On our view, however, the carbon footprint (broad) of procreation is even greater, everything else being equal. This is because the emissions that are attributable to a person on the Broad Attribution Claim include all the emissions they are especially well placed, both practically and morally, to prevent. By deciding not to have a child each of us is especially well placed to prevent not only *some subset* of our descendants' emissions, but *all* of our children's and further descendants' emissions, all by making a choice that we have unique moral authority to make. To emphasise: we are saying there is no good reason to discount for genetic relatedness if our purpose is to identify the range of emissions that we are well placed to

prevent. Saying this is compatible with holding that when we turn to other senses of responsibility – fair shares liability; praiseworthiness and blameworthiness – we *do* share responsibility with others, including our own child and others down the line.

What we have said thus far offers some support for the Lax MET. The potentially substantial chain of emissions that prospective procreators have the opportunity to prevent, and their unique practical ability and moral authority to do so, together establish a strong *pro tanto* case for the weighty reason to have one fewer child.

For reasons of space, we cannot defend the further claim according to which these reasons amount to a moral obligation to have one fewer child. This requires, among other things, defending an account of non-ideal obligations, that is, our obligations to pick up the slack for others who have not done or are not doing what they ought to. One view holds that we have an obligation of justice to do more than our fair share if this is necessary to assist those in dire need.[55] Another holds that we do not have obligations of justice to pick up the moral slack for others but may have a 'humanitarian obligation' to do so, when it is necessary to avoid serious human rights violations.[56] It is beyond the scope of this article to take a stance between these two accounts. But showing that this kind of debate is required to establish the wrongness of Pat and Pam's procreative choice is in itself significant because defenders of MET, who see themselves as offering an analogical argument, have failed to notice this.

So, we believe the Lax MET can be defended and is importantly different from the Strict MET. On the Lax version, procreation and eco-gluttony may both be wrong, but if so, they are wrong under different conditions and for different reasons. Noa and Neil's eco-gluttony would be wrong even under ideal conditions in which most people lived, like Pat and Pam, within their carbon budgets. Pat and Pam's procreative decision, by contrast, is only wrong, if it is wrong, under conditions of widespread non-compliance where, due to individuals like Noa and Neil failing to do their fair share, it may become incumbent upon Pat and Pam to do more than their fair share. As for the reasons why Pat and Pam's procreative choice is wrong, if it is wrong, this is because of their failure to do more than their fair share when they are especially well placed to alleviate climate harms. Noa and Neil's obligation, by contrast, is grounded in their obligation to live within their fair share (i.e. their carbon budget).

Before concluding, let us briefly address a potential tension between our argument for the Lax MET and our rejection of the Strict MET: how can the Lax MET be right in saying that Pat and Pam have reason, or an obligation, to forgo having the same child that we argued earlier is an important public good?

What we argued above is that the beneficial consequences of Pat and Pam's child certainly have significant normative implications – namely, for who has distributive liability for that child's emissions. But this is not to say that the fact that children would be public goods provides procreators with a positive reason or an obligation to have those children. In a nutshell, we can have reason to forgo having a child in order to help reduce significant harm, but not a reason to have a child in order to benefit third parties. Our rejection of the Strict MET is therefore compatible with our defence of the Lax MET.

If something along these lines is correct, it is compatible to say both that Pat and Pam have strong reasons, perhaps an obligation, to forgo having even one child, and that procreation is not wrong in the same way in which eco-gluttony is.

Serena Olsaretti, ICREA and Department of Law, Universitat Pompeu Fabra, Barcelona, Spain

Isa Trifan, Department of Government, University of Essex, Colchester, UK. isabella.trifan@essex.ac.uk

Acknowledgements

For helpful comments and discussions of this article we thank David V. Axelsen, Paul Bou-Habib, Hannah Carnegy-Arbuthnott, Paula Casal, James Christensen, Andrée-Anne Cormier, William Gildea, Riccardo Spotorno, and Andrew Williams. We are also grateful to participants at the Ethics of Family and Upbringing Workshop at the University of Manchester (31 March 2023), the Political Theory Workshop at the Universitat Pompeu Fabra (12 June 2023), the Centre for Studies in Planetary Well-Being seminar at Universitat Pompeu Fabra (27 June 2023), the Political Theory Seminar at the University of Essex (22 November 2023), and the Colloquium Series of the Philosophy Department, University of York, UK (13 December 2023). Thanks also to fellow speakers and audience members at the Climate Justice and the Carbon Footprint of Procreation panel we co-organised at the 2023 Society for Applied Philosophy Annual Conference. We are grateful to two anonymous reviewers for probing and extensive feedback. Work on this publication has been supported by grant CEX2021-001169-M (funded by MICIU/AEI/10.13039/501100011033).

NOTES

1 Philosophical contributions to the environmental case against having children that have appeared over the last two decades include Burkett, "Legacy"; Conly, *One Child*; Goodwin, "Having Children"; Hedberg, "Duty"; Hedberg, *Environmental Impact*; MacIver, "Procreation"; Overall, *Why Have Children?*; Rieder, *Toward*; Vance, "Procreation"; Young, "Overconsumption." During this same period, two key papers by environmental scientists that measure the carbon impact of having a child (Murtaugh and Schlax, "Reproduction"; Wynes and Nicholas, "Climate") support 'having one fewer child' and have spurred public discussion in many countries. See, for example, Crist, "Is It OK?"; Gallón, "No tener"; Talignani, "Volete"; Kolbert, "Case"; Wong, "Baby Emissions." For some recent philosophical responses to the case against having children and these measurements of procreation's carbon footprint, see Grill, "Procreation"; Kukla, "Whose Job"; Mariana, "Overconsumption"; Pinkert and Sticker, "Procreation"; Robeyns, "Is Procreation Special?"; Stanbury, "What to Do"; van Basshuysen and Brandstedt, "Comment." Alongside this debate, there is an ongoing and older debate on the need to reduce population size on environmentalist grounds; for example, Barry, "Sustainability"; Bayles, *Morality*; Cafaro, "Climate Ethics"; Cafaro, "Just Population Policies"; Heyward, "Growing Problem?"; Caney, "Human Rights, Population"; Cripps, "Climate Change"; Hickey *et al.*, "Population"; Meijers, "Citizens"; Kates, "Reproductive Liberty"; Daily *et al.*, "Optimum." For overviews of the recent treatment of the population question in philosophy, see Andersson *et al.*, "Review Article"; Coole, "Too Many Bodies?"

2 Note that this argument focuses only on how procreation affects *third parties*. Like others, here we assume that from the perspective of those whom procreation causes to exist, standardly, procreation is permissible.

3 Our reconstruction here takes as a reference point the arguments offered by Young, "Overconsumption," who we think offers the best-developed case for the Moral Equivalence Thesis. We do not summarise Young's own argument but offer our own formulation of it, which we think captures the most plausible points Young makes. In so doing, we bring in terminology Young himself does not employ. He talks, throughout, of 'environmental impact' which is wider than the now commonly used notion of carbon footprint and can register other ways in which we affect the environment other than by emitting. This difference does not matter for our arguments in this article. Parallel distinctions to the ones which, we argue in sect. 3, can and should be drawn when we focus on emissions can and should be drawn with regard to environmental impact. The views of others in this debate

(for example, Burkett, "Legacy"; Hedberg, "Duty"; MacIver, "Procreation"; Vance, "Procreation") can also be seen as endorsing the case for the Thesis as we reconstruct it here.

4 Murtaugh and Schlax, "Reproduction," 18. The argument extends to individuals in other affluent societies (e.g. Canada, Australia, Europe), and very wealthy individuals from poorer societies. Throughout, we talk of 'carbon emissions' to refer to CO2 emissions but also other greenhouse gases.

5 Wynes and Nicholas, "Climate."

6 Ibid., 3.

7 E.g. Robeyns, "Is Procreation Special?"

8 MacIver, "Procreation," 122.

9 For a defence of individual obligations to reduce emissions, see, for example, Baatz, "Climate Change"; Broome, "A Reply"; Broome, "Against Denialism"; Caney, "Climate Change, Human Rights"; Caney, "Climate Change and the Duties"; Caney, "Two Kinds"; Cullity, "Climate Harms." For arguments against individual obligations to reduce emissions, see Kingston and Sinnott-Armstrong, "What's Wrong"; Maltais, "Radically Non-Ideal"; Sinnott-Armstrong, "It's Not My Fault."

10 The correctness of the Moral Equivalence Thesis is not a necessary condition for the justifiability of these policies. These may be justified as the best means to achieve, as a society, our climate justice goals, even if it is not true that individuals have obligations to refrain from procreating in order to reduce their carbon footprint. This is the argumentative strategy of the older debate on population and climate (see n. 1). Thank you to Andrew Williams for raising this suggestion, which we do not object to but which is not our focus in this article.

11 This raises the thorny question of how these societies may remain economically sustainable. We come back to this in sect. 3.

12 Murtaugh and Schlax, "Reproduction."

13 Our analysis of MET and criticism of its Strict Reading differ from the views of other critics of MET and, we think, shed light on why some of those critics' objections do not indict MET. See the discussion of others' views in sects. 3 and 4 and n. 41.

14 Young, "Overconsumption," 183, 184.

15 This point applies to our measurements of the carbon footprint of any choice, not just of procreation.

16 The exceptions are Kates, "Reproductive Liberty"; Cafaro, "Just Population Policies"; Conly, *One Child*. See Räikkä, "Coercive"; Hickey *et al.*, "Population"; Bognar, "Overpopulation"; and Hedberg, *Environmental Impact*, for a defence of measures supposedly compatible with liberal constraints. For concerns about any policies aiming at reducing fertility on 'excess children', see Anderson, "What the State Owes"; Heyward, "Growing Problem?"

17 Walters, 2007.

18 De la Croix and Gosseries, 2009.

19 Murtaugh and Schlax, "Reproduction." To say this is compatible with claiming that there are weighty reasons, for the sake of sustainable growth and increased standards of living, for fertility to come down in non-affluent societies (see Barry, "Sustainability"). But these are different arguments, not given by MET.

20 E.g. Longman, *Empty Cradle*.

21 For an exception, see Grill, "Procreation."

22 On this point, see Wynes and Nicholas, "Reply"; Young, "Overconsumption."

23 Thanks to an anonymous reviewer for pressing us on this point. We are also sympathetic to the related but different point that we have obligations beyond those of climate justice to non-human animals, the violation of which likely worsens, the larger the human population. See Hedberg, *Environmental Impact*, chap. 10, for discussion of the case for a lower human population size that is sensitive to the interests of non-human animals and of all living things.

24 See Stanbury, "What to Do"; and Kates, "Reproductive Liberty," *contra* Wynes and Nicholas, "Climate"; Hedberg, "Duty"; and Hedberg, *Environmental Impact*.

25 For discussion of the morality of carbon offsetting, see Spiekermann, "Buying Low"; Hyams and Fawcett, "Ethics"; Barry and Cullity, "Offsetting."

26 E.g. see Young, "Overconsumption."

27 We assume that *causal* responsibility for an outcome can affect, but is neither sufficient nor necessary for, moral responsibility for that outcome in any of the three senses of moral responsibility we mention. We briefly come back to this in sect. 4.

28 By invoking these principles, it might be argued that everyone's carbon budgets should be identical, or that they should vary in line with different needs. Further issues which principles of justice help settle are whether the size of these budgets should be set in isolation from, or by contrast, taking into account, how advantaged individuals are in other respects (e.g. in financial terms). For this integrationist approach, see Caney, "Climate

Change" (2018). What we say here is compatible with different stances regarding how these issues are resolved.

29 For example, assuming the cleanest technology available and justly accessible to the population at hand.

30 A full discussion of which of these grounds should be employed and why must await another occasion. The public goods argument we endorse below assumes that, under certain conditions, benefiting from an activity is a ground of fair liability.

31 Young ("Overconsumption," 191) writes: 'the concept of sustainable eco-gluttony is wishful thinking'.

32 Note that giving someone who engages in activity *X* a larger budget that covers some of the emissions costs of *X*, and attributing to that person a smaller footprint (narrow) when she does *X*, are two different ways of ensuring that the costs of *X* do not fully fall on that person, but are shared with others. To illustrate: suppose P's medical need requires emissions-producing medications. The emissions of meeting P's needs could be shared either by assigning P a larger carbon budget, or by assigning P and everyone else the same budget, and then registering the amount of changes to total emissions in the atmosphere required to produce the medications P needs as being part of *both* P's and others' footprint (narrow).

33 Rakowski 1993.

34 Young, "Overconsumption," 184–5.

35 E.g. Hedberg, "Duty."

36 Murtaugh and Schlax, "Reproduction"; Wynes and Nicholas, "Reply."

37 MacIver, "Procreation," 116–7.

38 See George, "Who Should Bear"; Folbre, *Valuing*; Olsaretti, "Children as Public Goods?"

39 Olsaretti, "Children as Public Goods?"

40 For some discussion of the former, long-debated issue, see Atkinson, "Optimum"; Meijers, "Citizens." For discussion of the possibility of adjusting to an ageing population, see Harper, "Concerns." For the latter, not-widely-discussed issue, see Bou-Habib and Olsaretti, "Children"; Bou-Habib, "Case"; Earl *et al.*, "Fertility"; Gosseries and Zwarthoed, "Generations."

41 Our view, then, is diametrically opposed to MacIver's ("Procreation"), who counts children's subsistence emissions as part of the procreator's carbon footprint (narrow). We think it is a virtue of our reconstruction of MET that it avoids objections that others have raised against the Thesis. One of these is the double counting objection (van Basshuysen and Brandstedt, "Comment"; Pinkert and Sticker, "Procreation"): the Strict MET as we formulate it does not commit problematic double counting by saying both that procreators should be charged all their child's emissions, and that the emissions the child makes should be paid for by the child's own budget. We can say that each of A and B uses up the same atmospheric capacity, if A's use of it, in the relevant sense (i.e. for the purpose of 'charging' her carbon budget), *consists in gifting* that atmospheric capacity to B, who then uses it in a different way (i.e. by burning fossil fuel). Consider: we are no more double counting here than we are when we ask A to cover the costs of B's medical expenses by paying B's medical insurance, and then charge B's insurance for the medical expenses B incurs. Our reading of the Strict MET also avoids the objection that the child's own footprint would remain the same regardless of whether they attempt to reduce their emissions (van Basshuysen and Brandstedt, "Comment"). This is not the case: A can pay more in insurance fees to cover B's foreseen medical needs than B perhaps spends and should spend.

42 Fragnière, "How Demanding." Interestingly, Young ("Overconsumption," 191) himself notes the significance of the fact that *production* generates benefits when briefly considering whether it is morally equivalent to eco-gluttony. He denies it is, on the grounds that the former 'creates jobs and goods which may justify some environmental damage'. Oddly, he does not note this about procreation. Even with regard to production, Young is not formulating a public goods argument about how it is fair to share the environmental costs of production, but only suggesting that the benefits of production outweigh its costs, unlike with eco-gluttony.

43 In this case, then, none of Pat, Pam, Noa, and Neil would have their carbon footprint (narrow) affected as a result of Pat and Pam's child's using up her budget – instead, their initial carbon budget would register as smaller in view of the fact that a budget must be set aside for future individuals like Pat and Pam's child. As noted above (see n. 32), in terms of normative book-keeping, budget setting and carbon footprint (narrow) attributions are two different ways of distributing the costs of emissions.

44 See Olsaretti, "Egalitarian Justice."

45 Young, "Overconsumption."

46 Singer, "Famine."

47 Caney, "Human Rights, Population"; IPCC, *Global Warming*; WHO, "Climate Change."

48 Singer, "Famine," 231.

49 For two exceptions to this view, see Gheaus, "Could There Ever"; Smilansky, "Is There a Moral Obligation?"

50 Cf. Pinkert and Sticker, "Procreation," 309–14.
51 van Basshuysen and Brandstedt, "Comment," 2.
52 Pinkert and Sticker, "Procreation," 315.
53 Young, "Overconsumption."
54 Murtaugh and Schlax, "Reproduction," 14; this view is adopted by Burkett, "Legacy"; Conly, *One Child*; Rieder, *Toward*; Wynes and Nicholas, "Climate."
55 Stemplowska, "Doing More."
56 Miller, "Taking."

References

Anderson, Matthew Lee. "What the State Owes 'Bastards': A Modest Critique of Modest One-Child Policies." *Journal of Applied Philosophy* 37, no. 3 (2020): 393–407.
Andersson, Henrik, Eric Brandstedt, and Olle Torpman. "Review Article: The Ethics of Population Policies." *Critical Review of International Social and Political Philosophy* 27, no. 4 (2021): 635–658.
Atkinson, Anthony B. "Optimum Population, Welfare Economics, and Inequality." In *Is the Planet Full?* edited by Ian Golding, 23–45. Oxford: Oxford University Press, 2014.
Baatz, Christian. "Climate Change and Individual Duties to Reduce GHG Emissions." *Ethics, Policy & Environment* 17, no. 1 (2014): 1–19.
Barry, Brian. "Sustainability and Intergenerational Justice." *Theoria: A Journal of Social and Political Theory* 89 (1997): 43–64.
Barry, Christian, and Garrett Cullity. "Offsetting and Risk Imposition." *Ethics* 132, no. 2 (2022): 352–381.
Bayles, Michael D. *Morality and Population Policy*. Tuscaloosa: University of Alabama Press, 1980.
Bognar, Greg. "Overpopulation and Procreative Liberty." *Ethics, Policy & Environment* 22, no. 3 (2019): 319–330.
Bou-Habib, Paul. "The Case for Replacement Migration." *Journal of Political Philosophy* 27, no. 1 (2019): 67–86.
Bou-Habib, Paul, and Serena Olsaretti. "Children or Migrants as Public Goods?" *Political Studies* 72, no. 4 (2024): 1313–31.
Broome, John. "A Reply to My Critics." *Midwest Studies in Philosophy* 40, no. 1 (2016): 158–171.
Broome, John. "Against Denialism." *The Monist* 102, no. 1 (2019): 110–129.
Burkett, Daniel. "A Legacy of Harm? Climate Change and the Carbon Cost of Procreation." *Journal of Applied Philosophy* 38, no. 5 (2021): 790–808.
Cafaro, Philip. "Climate Ethics and Population Policy." *WIREs Climate Change* 3, no. 1 (2012): 45–61.
Cafaro, Philip. "Just Population Policies for an Overpopulated World." *Ecological Citizen* 5, no. 1 (2021): 55–64.
Caney, Simon. "Climate Change." In *The Oxford Handbook of Distributive Justice*, edited by Serena Olsaretti, 664–688. Oxford: Oxford University Press, 2018.
Caney, Simon. "Two Kinds of Climate Justice: Avoiding Harm and Sharing Burdens." *Journal of Political Philosophy* 22, no. 2 (2014): 125–149.
Caney, Simon. "Climate Change, Human Rights, and Moral Thresholds." In *Climate Ethics*, edited by Stephen M. Gardiner and Catriona McKinnon, 163–177. Oxford: Oxford University Press, 2010a.
Caney, Simon. "Climate Change and the Duties of the Advantaged." *Critical Review of International Social and Political Philosophy* 13, no. 1 (2010b): 203–228.

Caney, Simon. "Human Rights, Population and Climate Change." In *Human Rights and 21st Century Challenges: Poverty, Conflict, and the Environment*, edited by Dapo Akande, Jaakko Kuosmanen, Helen McDermott, and Dominic Roser, 348–370. Oxford: Oxford University Press, 2020.

Conly, Sarah. *One Child: Do We Have a Right to More?* Oxford: Oxford University Press, 2015.

Coole, Diana. "Too Many Bodies? The Return and Disavowal of the Population Question." *Environmental Politics* 22, no. 2 (2013): 195–215.

Cripps, Elizabeth. "Climate Change, Population, and Justice: Hard Choices to Avoid Tragic Choices." *Global Justice: Theory Practice Rhetoric* 8, no. 2 (2015): 1–22.

Crist, Meehan. "Is it OK to Have a Child?" *London Review of Books* 42, no. 5 (2020): 9–14.

Cullity, Garrett. "Climate Harms." *The Monist* 102, no. 1 (2019): 22–41.

Daily, Gretchen C., Anne H. Ehrlich, and Paul R. Ehrlich. "Optimum Human Population Size." *Population and Environment* 15, no. 6 (1994): 469–475.

Earl, Jake, Colin Hickey, and Travis N. Rieder. "Fertility, Immigration, and the Fight against Climate Change." *Bioethics* 31, no. 8 (2017): 582–89.

Folbre, Nancy. *Valuing Children: Rethinking the Economics of the Family*. Cambridge: Harvard University Press, 2008.

Fragnière, Augustin. "How Demanding is Our Climate Duty? An Application of the No-Harm Principle to Individual Emissions." *Environmental Values* 27, no. 6 (2018): 645–663.

Gallón, Angelica. "No tener hijos para no contribuir a la *debacle* ambiental." El Pais, September 25, 2022. https://elpais.com/america-futura/2022-09-25/no-tener-hijos-para-no-contribuir-a-la-debacle-ambiental.html#.

George, Rolf. "Who Should Bear the Cost of Children?" *Public Affairs Quarterly* 1, no. 1 (1986): 1–42.

Gheaus, Anca. "Could There Ever Be a Duty to Have Children?" In *Permissible Progeny?: The Morality of Procreation and Parenting*, edited by Sarah Hannan, Samantha Brennan, and Richard Vernon, 87–106. Oxford: Oxford University Press, 2015.

Goodwin, Kianna. "Having Children: Reproductive Ethics in the Face of Overpopulation." *Macalester Journal of Philosophy* 20, no. 1 (2012): 29–59.

Gosseries, Axel, and Danielle Zwarthoed. "Generations and Global Justice." In *Global Political Theory*, edited by David Held and Pietro Maffetone, 281–304. Cambridge: Polity Press, 2016.

Grill, Kalle. "Procreation vs. Consumption: Harms and Benefits." *Environmental Ethics* 45, no. 3 (2023): 265–286.

Harper, Sarah. "Concerns over Population Ageing: Still a Contested Space." *Journal of Population Ageing* 16 (2023): 815–18.

Hedberg, Trevor. "The Duty to Reduce Greenhouse Gas Emissions and the Limits of Permissible Procreation." *Essays in Philosophy* 20, no. 1 (2019): 42–65.

Hedberg, Trevor. *The Environmental Impact of Overpopulation: The Ethics of Procreation*. Abingdon and New York: Routledge, 2020.

Heyward, Clare. "A Growing Problem? Dealing with Population Increases in Climate Justice." *Ethical Perspectives* 19, no. 4 (2012): 703–732.

Hickey, Colin, Travis N. Rieder, and Jake Earl. "Population Engineering and the Fight against Climate Change." *Social Theory and Practice* 42, no. 4 (2016): 845–870.

Hyams, Keith, and Tina Fawcett. "The Ethics of Carbon Offsetting." *WIREs Climate Change* 4, no. 2 (2013): 91–98.

IPCC (Intergovernmental Panel on Climate Change). "*Global Warming of 1.5 C*." Special Report 2018. https://www.ipcc.ch/sr15/.

Kates, Carol A. "Reproductive Liberty and Population." *Environmental Values* 13, no. 1 (2004): 51–79.

Kingston, Ewan, and Walter Sinnott-Armstrong. "What's Wrong with Joyguzzling?" *Ethical Theory and Moral Practice* 21, no. 1 (2018): 169–186.
Kolbert, Elizabeth. "The Case Against Kids." New Yorker, April 2, 2012. https://www.newyorker.com/magazine/2012/04/09/the-case-against-kids.
Kukla, Rebecca. "Whose Job Is It to Fight Climate Change? A Response to Hickey, Rieder, and Earl." *Social Theory and Practice* 42, no. 4 (2016): 871–78.
Longman, Philip. *The Empty Cradle*. New York: Basic Books, 2004.
MacIver, Corey. "Procreation or Appropriation?" In *Permissible Progeny?: The Morality of Procreation and Parenting*, edited by Sarah Hannan, Samantha Brennan, and Richard Vernon, 107–128. Oxford: Oxford University Press, 2015.
Maltais, Aaron. "Radically Non-Ideal Climate Politics and the Obligation to at Least Vote Green." *Environmental Values* 22, no. 5 (2013): 589–608.
Mariana, John. "Overconsumption, Procreation, and Morality." *Ethics in Progress* 5, no. 1 (2014): 52–65.
Meijers, Tim. "Citizens in Appropriate Numbers: Evaluating Five Claims about Justice and Population Size." *Canadian Journal of Philosophy* 47, no. 2–3 (2017): 246–268.
Miller, David. "Taking Up the Slack? Responsibility and Justice in Situations of Partial Compliance." In *Responsibility and Distributive Justice*, edited by Carl Knight and Zofia Stemplowska, 230–245. Oxford: Oxford University Press, 2011.
Murtaugh, Paul A., and Michael G. Schlax. "Reproduction and the Carbon Legacies of Individuals." *Global Environmental Change* 19, no. 1 (2009): 14–20.
Olsaretti, Serena. "Children as Public Goods?" *Philosophy & Public Affairs* 41, no. 3 (2013): 226–258.
Olsaretti, Serena. "Egalitarian Justice, Population Size and Parents' Responsibility for the Costs of Children." In *The Oxford Handbook of Population Ethics*, edited by Gustaf Arrhenius, Krister Bykvist, Tim Campbell, and Elizabeth Finneron-Burns. Oxford: Oxford University Press, 2022.
Overall, Christine. *Why Have Children? The Ethical Debate*. Cambridge: MIT Press, 2012.
Pinkert, Felix, and Martin Sticker. "Procreation, Footprint and Responsibility for Climate Change." *Journal of Ethics* 25 (2020): 293–321.
Räikkä, Juha. "Coercive Population Policies, Procreative Freedom, and Morality." *Philosophy & Geography* 4, no. 1 (2001): 67–77.
Rieder, Travis. *Toward a Small Family Ethic: How Overpopulation and Climate Change Are Affecting the Morality of Procreation*. London: Palgrave, 2016.
Robeyns, Ingrid. "Is Procreation Special?" *Journal of Value Inquiry* 56 (2022): 643–661.
Singer, Peter. "Famine, Affluence, and Morality." *Philosophy & Public Affairs* 1, no. 3 (1972): 229–243.
Sinnott-Armstrong, Walter. "It's Not *My* Fault: Global Warming and Individual Moral Obligations." In *Climate Ethics: Essential Readings*, edited by Stephen Gardiner, et al., 332–346. Oxford: Oxford University Press, 2010.
Smilansky, Saul. "Is There a Moral Obligation to Have Children?" *Journal of Applied Philosophy* 12, no. 1 (1995): 41–53.
Spiekermann, Kai. "Buying Low, Flying High: Carbon Offsets and Partial Compliance." *Political Studies* 62, no. 4 (2014): 913–929.
Stanbury, Craig. "What to Do About Overpopulation?" *Journal of Applied Philosophy* 39, no. 5 (2022): 841–856.
Stemplowska, Zofia. "Doing More than One's Fair Share." *Critical Review of International Social and Political Philosophy* 19, no. 5 (2016): 591–608.
Talignani, Giacomo. "Volete salvare la Terra dall' Effetto Serra? Fate meno figli." La Repubblica, July 13, 2017. https://www.repubblica.it/ambiente/2017/07/13/news/_volete_salvare_la_terra_dall_effetto_serra_non_fate_figli_-170692889/.

van Basshuysen, Philippe, and Eric Brandstedt. "Comment on 'The Climate Mitigation Gap: Education and Government Recommendations Miss the Most Effective Individual Actions'." *Environmental Research Letters* 13 (2018): 1–3.

Vance, Chad. "Procreation is Immoral on Environmental Grounds." *Journal of Ethics* 28 (2024): 101–124.

WHO (World Health Organization). "Climate Change and Health Fact Sheet." 2023. https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health.

Wong, Sam. "Baby Emissions Fuel Global Warming." Guardian, August 5, 2009. https://www.theguardian.com/science/blog/2009/aug/04/population-climate-change-birth-rates.

Wynes, Seth, and Kimberly A. Nicholas. "The Climate Mitigation Gap: Education and Government Recommendations Miss the Most Effective Individual Actions." *Environmental Research Letters* 12 (2017): 1–9.

Wynes, Seth, and Kimberly A. Nicholas. "Reply to Comment on 'The Climate Mitigation Gap: Education and Government Recommendations Miss the Most Effective Individual Actions'." *Environmental Research Letters* 13, no. 4 (2018): 1–3.

Young, Thomas. "Overconsumption and Procreation: Are They Morally Equivalent?" *Journal of Applied Philosophy* 18, no. 2 (2001): 183–192.