

Citizens in appropriate numbers: evaluating five claims about justice and population size

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ABSTRACT

While different worries about population size are present in public debates, political philosophers often take population size as given. This paper is an attempt to formulate a Rawlsian liberal egalitarian approach to population size: does it make sense to speak of ‘too few’ or ‘too many’ people from the point of view of justice? It argues that, drawing on key features of liberal egalitarian theory, several clear constraints on demographic developments – to the extent that they are under our control – can be formulated. Based on these claims, we can clarify both the grounds and content of our obligations to future generations.

ARTICLE HISTORY Received 23 January 2016; Accepted 18 January 2017

KEYWORDS Demographic change; Rawls; just savings principle; intergenerational justice; liberal egalitarianism

1. Introduction

Does justice require that we attempt to change demographic developments in a certain direction? Suppose that justice requires an emphasis on preventive medicine, the promotion of gender equality, and relatively open borders. Implementing these proposals (or any alternative) will influence how many people there are on a territory by affecting longevity, fertility, and migration, respectively. And, although affecting population size is not the goal of these policies (the goal is to act on the demands of justice); change in population size is an important effect.

Yet, there are several reasons to think that population size itself should be a matter of concern. According to the UNFPA (2012) medium projection, world population is projected to grow from well over 7 billion today (in 2016) to over 10 billion in 2100. One may worry that with this many people, it will be difficult (if not impossible) to provide all with enough resources to lead good (enough)

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lives sustainably. Barry (2005, 256–257), for example, argues first, that issues of poverty and global inequality are harder to solve if there are more people to be lifted out of poverty; and second that a larger world population makes it harder to lower the total amount of emissions. *Ceteris paribus*, the more people the larger the environmental impact.¹ Could there be too many people? The reverse claim, that there are too few people is less often made. But the number of people can become so low that a society (or humanity) threatens to go extinct. Massive depopulation may have severe consequences for those who live it through (see e.g. Gheaus 2015). These are both worries about the absolute size of a population.

Not only the *absolute* size of a population can be a worry. Steep drops in fertility levels combined with increased longevity (like in Japan, Germany or Italy) means that the percentage of old age dependents grows. A small number of economically active ‘young’ are to provide (financially, in terms of care, etc.) for a relatively large group of dependent old. This puts pressure on welfare states, e.g. for funding healthcare, old age benefits, and pensions.² Some fear an elderly bias in democratic decision-making through the ‘grey vote.’³ Reversely, very high fertility comes with large numbers of young dependents, requiring considerable investment in terms of education, healthcare, and care, which may put pressure on society and the economy.⁴ In either case, one may worry about the relative size of successive generations, and that there are too many or too few (new) people.

This paper does not claim that all these worries are actually justified. The question is whether such worries about ‘too few’ and ‘too many’ make sense to begin with from the point of view of justice?

The literature on justice between generations and sustainability has grown considerably over the last decades, but the question of the right number of people has received far less attention in the justice literature.⁵ Population is often taken either as a given (exogenous) or constant.⁶ Demographic change is not completely ignored. Some point to the *demo-sensitivity* (Gaspard and Gosseries 2007, 205; Gosseries 2009, 138) of the Rawlsian savings principle that describes our obligations to future generations. If we have an obligation of justice to establish or maintain just institutions, and if the amount of resources required to act on this duty fluctuates with the size of the population, it follows that the size of the population determines the size of intergenerational transfers. Population, on such a view, is not a variable we should change, but relevant information for determining how much should be transferred to future generations. It does not, at first sight, offer guidance on which demographic developments should be pursued.

Yet the question which demographic developments we should pursue makes sense: they have a significant impact on how well peoples’ lives go.⁷ This may be a necessary condition for considerations of justice to apply, but it is not sufficient. Natural disasters also affect peoples’ lives, but non-human caused disasters are

neither just nor unjust.⁸ Rather the way we respond to them is a question of justice. Demographic change is not always like this. Taking population as constant or given is (in many cases) either a simplification or a mistake. Considering closed societies, procreation is especially important here: *new* people do not arrive, to paraphrase Rakowski (1991, 170), by storks, but are the results of the aggregation of actions and decisions on the individual and policy level.⁹ The size of future generations depends to a large extent on the proactive decisions we take now.¹⁰

But pointing to the fact that we *can* influence demographic developments is not enough to show that we should. This paper moves population size to center stage. The key question is whether liberal egalitarian theories of justice impose requirements on population size, by drawing (mostly) on John Rawls' work. By presenting the sparse remarks he made on this issue in a systematic way, I ask whether theories of justice can make sense of intuitions about 'too many' or 'too few' people. Should we take demographic change as a given, or should we attempt to change them in a certain direction? I defend the latter position. This exercise helps us to clarify and specify obligations of intergenerational justice. Although some of the remarks may be of exegetical interest, the goal of this paper is to formulate the most plausible, philosophically strongest, Rawlsian approach to demographic justice. Whether we should *endorse* all the elements of this view is another question, but it is important that we look at what Rawls' views entail in this domain.

This paper proceeds as follows. First, I ask whether population size is subject to the demands of justice, and argue on the grounds of national responsibility in this context that it is Section 2. I then argue two negative points: that there is no 'optimum population' from the point of view of justice of Section 3; and that a plausible view cannot be based on aggregative principles of Section 4. Section 5 defends a minimal threshold, whereas Section 6 argues for a higher threshold: stable just institutions. Section 7 concludes with a discussion of constraints on population policies, their relation to the principles of justice and the just saving principle, and some possible objections.

2. Responsibility for population size

In *The Law of Peoples*, Rawls explicitly takes position on questions of population size:

An important role of people's government, however arbitrary a society's boundaries may appear from a historical point of view, is to be the representative and the effective agent of a people as they take responsibility for their territory and its environmental integrity, as well as for the size of the population. As I see it the point of the institution of private property is that, unless a definite agent is given responsibility for maintaining an asset and bears the loss for not doing so, that asset tends to deteriorate. In this case the asset is the people's territory, and its capacity to support them *in perpetuity*; and the agent is the people themselves as politically organized. (Rawls 1999, 38–39)

There are two ways to understand the claim that *the government is responsible for the size of the population*. First, it could be responsibility understood as *moral* responsibility. In this sense, 'X is responsible for Y' means that X would be morally blameworthy if she fails to comply with Y. A claim of this kind is that 'this employer is blameworthy for engaging in racial discrimination in hiring.'

The second sense of 'responsibility' is outcome responsibility: 'X is responsible for decisions Y' means that X is the person who should bear the consequences (positive or negative) of her decision Y (e.g. Miller 2007, chap. 4; Lippert-Rasmussen 2009, 112–113). This is responsibility in about what we have to do – or not – for others. An example of such a claim would be 'if John loses a large part of his fair share of resources in the casino, John is the person who bears this loss: others do not owe him compensation for the bad (option) luck he suffered.' This is not necessarily a moral evaluation of the action itself (gambling may be an unproblematic activity), but only tells us who can expect what from whom. It is crucial to keep these two types of responsibility separate, because the liability for demographic change and the moral responsibility to steer it in a certain direction may not always fall on the same agent, as we will see.

Although, as I will point out below (Sections 5 and 6), the government can also have *moral* obligations, like Rawls (in his reference to bearing the loss) I focus on responsibility as outcome responsibility. Rawls' resistance to open borders as an answer to population pressure in this light can be clarified. He says that:

[p]eople must recognize that they cannot make up for their irresponsibility in caring for their land and its natural resources by conquest in war or by migrating into other people's territory's without their consent. (Rawls 1999, 8)

In other words, if a country ends up with a larger population than it can or wants to support, it cannot expect others to solve the problem for them, for example by opening their borders.

This argument can be supported by appeal to an argument Rawls gives elsewhere. Imagine two countries. I will use Miller's (2007, 70–72) names for these countries. At time T1 they are equally prosperous. Due to cultural differences both countries go through different demographic developments. One reaches a stable population (*Condominium*), whereas the other country's (*Procreatia*) population continues to grow. Some decades later *Condominium* is much richer than *Procreatia* although both are internally just (Rawls 1999, 117). Cosmopolitan distributive principles would call for distribution. Rawls finds this implausible because peoples' are 'free and responsible, and able to make their own decisions.'¹¹ Requiring migration or distribution, Miller argues, 'seems to undermine national self-determination by nullifying its inevitable effects.' The idea of national responsibility means that 'we are responsible for what we collectively decide to do, and we should bear the outcome, for better or worse' (Miller 2011, 15).

Limiting national responsibility, Miller argues, limits national self-determination. This leads to the question why national self-determination matters. This is too big a question to answer here, but the appeal to national responsibility here may be quite uncontroversial. Many liberal egalitarians doubt that responsibility can be meaningfully ascribed to collectivities, because it seems to be in tension with moral individualism (e.g. Tan 2004, 73).¹² Although collective responsibility may arise in some contexts, in cases involving the intergenerational transfer of responsibility this is at least problematic. Holding people responsible for their ancestors' actions even though they did not even exist at the time the decision was taken, is incompatible with moral individualism.

By distinguishing between the instrumental and intrinsic justifications for national responsibility, we can render Rawls' claim more palatable for more cosmopolitan minded egalitarians. The justification appealed to here is instrumental in nature.

Seemingly echoing the argument of *The Tragedy of The Commons* (Hardin 1968), Rawls argues that if nobody is responsible for the state of the environment, the land will deteriorate. If we assign responsibility to a government, it will take better care of the land as the representative of its' people: the success of their own intergenerational collective project is at stake.¹³ Similarly, Barry argues that: 'the existing regime of closed borders creates pressure on governments to introduce policies to control population growth. This pressure would be weakened if faster population growth in a country could be offset by faster emigration' (Barry 1992, 282). In other words, open borders or cosmopolitan egalitarian principles limit national responsibility by taking away both the capacity to and the motivation for states (and those they represent) to act in a sustainable way.¹⁴

This instrumental justification for inequalities is not incompatible with many egalitarian cosmopolitan views: individual citizens of a society are not morally blameworthy for, or that they were in control of, the state's policies. Responsibility acts as an incentive, like higher monetary rewards in some professions. On a Rawlsian view inequalities are justified not because they are *deserved*, but as far as they are to the maximum advantage of the well-off (e.g. Parijs 2003). Responsibility plays a similar role here: people are held responsible for the decisions of their government for efficiency reasons: the alternative would be worse for everyone (e.g. Holtug 2011, 157).

One may object that this argument is too hasty. Suppose that the incentive fails in a particular case, and a state fails to control population, resulting in poverty several generations later. Should the descendants be held responsible and are they, hence, without any claim to support? Not necessarily. First, some are rather optimistic about the possibility of solving problems arising from population pressure.¹⁵ But a case for support can be made as well: this countries should be treated as historically burdened societies, to which liberal peoples have a duty of assistance. This duty requires that setting up just institutions becomes

possible, e.g. through international transfers or by supporting the evolution of the political culture (Rawls 1999, chap. 15).

What does this discussion of national responsibility tell us about population size? It tells us little about how many people there should be. But it shows there is such a requirement. The need for national responsibility as an incentive shows that some demographic developments are better (or worse) from the point of view of justice than others. Second, it tells us that a population principle will leave room for national discretion with regard to population size (see Section 3).

On the basis of this discussion, we can formulate a principle of national responsibility for population size. This principle applies insofar as it is true that there are good instrumental reasons to allow for national self-determination:

Claim 1. Responsibility Principle: *The responsibility for population size lies with the national government, and they are to carry the consequences (positive and negative) that result from demographic change.*

This principle plays the role of a secondary principle. As with individual decisions on the national level, within the range of permissible options people carry the consequences for the choices they make. You are free to do with your primary goods as you see fit, but you are responsible for the consequences. This does not tell us *what* falls within the range options compatible with justice. The same is true for demographic developments: we have identified the agent who carries the responsibility for the decisions taken among the range of permissible actions, but not which courses of action are permissible. For this, we need to look elsewhere.

3. No optimum

Some welfare economists use the notion of an optimum population. A population is optimal for a given territory if and only if no possibly population for that territory does better terms of certain criteria: e.g. GDP or utility. There are different populations that perform equally well. One could think that there could be an optimum population from the point of view of justice. Is this what the incentives discussed in the previous section should aim for? Rawls' disagrees:

I do not use the term 'overpopulation' here since it seems to imply the idea of optimal population; but what is that? When seen as relative to what the economy can sustain, whether there is population pressure is a clear enough question. (Rawls 1999, 109)

There are two key ideas in this passage. First, Rawls seems to suggest that there is no such thing as an optimum population, no value in reference to which a population can perform best. Rawls is consistent in his rejection of this idea. In a letter to Phelps he writes:

I am somewhat doubtful that the view I suggest can be applied to population growth, that is, to determine optimum population size; I hadn't meant it to apply to this but rather to savings, taking population size as more or less given, and possibly increasing, or whatever.¹⁶

There are two possible explanations for Rawls' rejection of the idea of an optimum. Roemer offers the first possible reason:

The question of what is the best population size for the world is not, strictly speaking, one of distributive justice, for given any population size, there should exist a just distribution of resources. If the distribution is just in each of two worlds with different population sizes, I do not think we can further say that one world is more just than the other. (Roemer 1996, 153)

Roemer's claim is that whatever the size of a population is, principles should point to a fair distribution of resources among those with legitimate claims. Although the division of goods may have an effect on how many people there are (through effects on natality, longevity and migration) the claim cannot be that it is better *because the population is bigger/smaller*. No meaningful comparison can be made. Suppose two alternative worlds, world A where there are many people with very high levels of well-being and world B where there are only a few people with very low levels of well-being. Both are internally just. On what grounds can we claim that one world is more just than the other? Roemer's doubt seems legitimate. It would be odd to claim that a just society is *more just* by virtue of it being more populous. But although the size of the population *right now* is given, future population size is not. Even in a closed society one can influence population size over time. Rejecting the optimum does not imply the acceptance of complete *laissez-faire*.

The second reason one may want to reject the notion of an optimum population is an appeal to liberal principles. Rawls' tale of two countries is relevant again. Both provide 'equal justice for women' but the latter one 'happens to stress these elements' (Rawls 1999, 117) while the former does not because of 'its prevailing religious and social values freely held by its women'. As a result, one country has high population growth and the other not, and the latter ends up twice as wealthy. Rawls points out that a global egalitarian principle would require redistribution, the duty of assistance does not because 'both societies are liberal [...] and their peoples free and responsible, and make their own decisions' (Rawls 1999, 118).

This passage aims to show the counterintuitive results of cosmopolitan views, but what is important for our discussion is that one development is not seen as better or worse by Rawls.¹⁷ *Condominium* cannot be more just than *Procreatia* if both have internally just institutions. They simply have different cultures and priorities. Requiring *Procreatia* to act as *Condominium* would violate liberal neutrality. Some peoples value economic development over procreation, whereas others may place a greater value on large families than on economic growth. The second reason, then, to reject the notion of an optimum population is that requiring a specific demographic development would significantly limit peoples' self-determination, which is instrumental in allowing different peoples' to pursue their respective collective plans among which liberal theories are neutral.

From this discussion, we can infer the following claim:

Claim 2. No Optimum: *Egalitarian justice does not require those demographic developments that optimize a particular value; and liberal considerations exclude settling on one particular optimum (or set of optima).*

In the passage at the start of this section Rawls seems to reject the idea of ‘overpopulation,’ because he thinks this implies the existence of an optimum. Overpopulation on such a possible definition means *too many people in reference to an optimum*. We could use it more loosely to refer to the idea that there are too many people - implied by Rawls’ use of the term ‘population pressure.’ This is the second key idea of the passage cited. The rejection of an optimum does not imply the rejection of the possibility of there being too many people, as Rawls suggests:

About intergenerational maximin, I guess I don’t think it’s feasible. But each nation could follow maximin within its borders and adjust its population to its natural resources and endowments, taking into account gains from trade, etc. Of course, all that’s rather utopian but it seems to work out alright.¹⁸

Although the difference principle takes population as a given, there may be reasons (which will be worked out below) to *adjust* population over time. The conclusion of this section is negative: there is no *optimum* population from the point of view of justice. But the rejection of an optimum does not mean the rejection of all limits or all reasons for adjustments – there *can* be too many people. The rest of the paper will focus on the identification of such limits.

4. Rejection of aggregation

In *A Theory of Justice* Rawls points to the tendency of total utilitarianism to demand an increase in population size, similar to Parfit’s *repugnant conclusion* (Parfit 1984, chap. 16):

The classical principle requires that so far as institutions affect the size of families, the age of marriage, and the like they should be arranged so that the maximum of total utility is achieved. This entails that so long as the average utility per person falls slowly enough when the number of individuals increases, the population should be encouraged to grow indefinitely no matter how low the average has fallen. In this case the sum of utilities added by the greater number of persons is sufficiently great to make up for the decline in the share per capita. As a matter of justice and not of preference, a very low average of wellbeing may be required. (Rawls 1971, 162–163)

The claim is that in cases where population is a variable (rather than constant) the demands of (impersonal) total and average utilitarianism diverge. Total utilitarianism demands an increase of the number of people up to the point where adding another individual would detract more utility than it would add. In Parfit’s words: ‘the greatest mass of milk might be found in a heap of bottles each containing only a simple drop’ (1984, 388). The contracting parties in the original position would reject such a principle, because ‘it would appear more rational to agree to some sort of floor to hold up average welfare’ (Rawls 1971, 163).

Claim 3. No aggregative principles: *the principle regulating demographic change cannot be based on aggregate principles that disregard the distribution of wellbeing in the population.*

This claim is linked with the discussion above: total utilitarianism is rejected because it puts everything and everyone in the service of the optimum. Whatever it is that justice requires with regard to population size, it cannot endorse an increase of the population in order to maximize the aggregate welfare. This should come as no surprise to those familiar with the Rawlsian framework. This claim does not tell us what population size to should strive for, but it offers a negative constraint. A principle that recommends increasing the population to the point where people would lead lives barely worth living, or one that allows the suffering of some to be offset by the flourishing of others, would be unacceptable.¹⁹ It is on this latter ground that average utilitarianism should be rejected. Like total utilitarianism, it does not offer a real minimum floor. It allows for a trade-off between different people – it does not take seriously the ‘distinction between persons’ (Rawls 1971, 27). It treats everyone in function of reaching the highest average. This is why average utilitarianism is rejected in favor of justice as fairness (Rawls 1971, chap. 29), which is especially concerned with those who have the least. What kind of *floor* does this view imply?

5. Minimal threshold

Liberal egalitarian theories of justice presuppose a minimal threshold, and Rawls hints at a link between population and this threshold:

Crucial is also the country's population policy: it must take care that it does not overburden its land and economy with a larger population than it can sustain (Rawls 1999, 108).

This is an explicit reference to limiting population size in order to make sure the population can be ‘sustained.’ But what does it mean for a population to be sustainable? The first element Rawls refers to, is that it should not ‘overburden the land’ and, in the letter to Phelps, that it should ‘adjust [the] population to its natural resources endowments.’ This resembles what ecologists call *carrying capacity*, defined as ‘the maximal population size of a given species that an area can support without reducing its ability to support the same species in the future’ (Daily and Ehrlich 1992, 762). Thinking about population in these terms makes sense given the open-endedness of societies: ‘political society is always regarded as a scheme of cooperation over time indefinitely’ (Rawls 1993, 463) which ‘produces and reproduces itself and its institutions and culture over generations and there is no time at which it is expected to wind up its affairs’ (Rawls 1993, 18).

At what level should individuals, at the minimum, be supported? Rawls defends a basic needs threshold lexically prior *even* to the first principle of justice (Rawls 1993, 7; Casal 2007, 323–325; Gardiner 2011, 133). This threshold protects the necessary conditions to make effective use of the liberties (protected by

the first principle).²⁰ At the very minimum, we should understand ‘to sustain a human population’ to refer to basic needs, which includes food, shelter, some education and the like.

This claim implies that demographic developments that undermine the capacity of the natural world to provide for future people up to this threshold is unacceptable, setting an upper limit to the absolute size of the population. Moving from conditions of moderate scarcity to a situation of extreme scarcity leads to collapse at best and violent conflict at worst.

Natural carrying capacity is not fixed. The number of people that can sustainably live on a territory depends on how they interact with it. A population with a resource intensive way of life, without ways to mitigate their impact and without sustainable technology, will reach the limits of the carrying capacity with a smaller size, than a population which use less resources and have developed green technology. The world can support more tree-planting-vegetarians-on-bikes than golf-playing-carnivores-in-SUV’s. The way we treat the environment also affects the carrying capacity: e.g. depleting non-renewable resources, irreversible desertification, or deterioration of fresh water sources all have a negative impact carrying capacity.²¹

Rawls does not only refer to *natural* carrying capacity, but to *social carrying capacity* as well: the demographic change which the economy and institutions can sustain. When population increases to the point where the natural environment can no longer support it, neither can the economy.²² Too few people may be possible as well, although it is perhaps less likely. Even very small communities may (in reasonable favorable conditions) be able to meet their members’ basic needs. But complex modern societies depend on high degrees of technology and specialization, which requires a rather large number of people.

Demographic shifts, rapid depopulation (resulting in aging), and rapid growth (resulting in many dependent young) creates pressure as well. In an extreme version of the former, there are not enough people to care (financially, medically, and personally) for the dependent elderly. In an extreme case of the latter, the labor market might not be able to absorb the large amounts of new people, or per capita investment in education may fall (e.g. May 2012, chap. 5).

It is thinkable that this may lead to a violation of a plausible minimal floor:

Claim 4: Minimal Floor. *Demographic developments should fall within the range of options compatible with a) the capacity of the environment or the economy to support each individual to the basic needs level (subsistence constraint) and b) the capacity to meet this threshold indefinitely (open-endedness constraint).*

Does sustainability require that the number of people that can be sustained remains constant (i.e. that the carrying capacity goes *unaffected*)? Consider:

The Wasteful generation. 10 million people inherited a rich world from their ancestors. They like a good party and spend everything they inherited on hedonistic pleasures like champagne and fireworks. They leave a world in which a population of 1 million people can live in a sustainable way. They regulate procreation in such a way the next generation (G2) to consist of 1 million people.

Can we condemn the *Wasteful Generations* (intuitively bad) behavior? Although it limits the carrying capacity of the land, it also adjusts the population so that it can be sustained indefinitely. Does the minimum floor imply that the carrying capacity should be able to accommodate a population of the *same size* (i.e. a maintained carrying capacity)? Or is it enough to leave act so that future generations basic needs are met?

There is no good reason to opt for the former understanding of sustainability. Liberal theories do not attach intrinsic value to there being more or less people. A world with more people living lives above the threshold is not necessarily better than one with less. What matters is that whoever lives, has their basic needs met. But, as I argue below, there are other reasons to condemn the *wasteful generation's* decisions in most circumstances.

6. Stable just institutions

Rawls argues that the principles of justice do not apply across generations and across nations (e.g. Gosseries 2014), but obligations to future people do not stop at the provision of basic needs. What we owe to future generations is expressed in terms of the just savings principle, which is a threshold conception like the duty of assistance. The just savings principle is a two-stage model. In the accumulation stage, savings (transferring more than received from previous generations) is required for the establishment of just institutions. Once these are firmly established, the duty to save no longer applies:

Real savings is required only for reasons of justice; this is, to make possible the conditions needed to establish and to preserve a just basic structure over time. (Rawls 2001, 159)

The savings principle is taken to be *demo-sensitive*, taking fluctuations in population size (both of relative adjacent generations as the absolute numbers) into consideration. The amount intergenerational transfers required depend on the number of future people:

Thus the savings rate as a constraint on current consumption is to be expressed in terms of aggregate capital accumulated, resources use forgone, and technology developed to conserve and regenerate the capacity of the natural world to sustain its human population. (Rawls 1999, 107)

The goal of the just savings principle is to *support the capacity of the natural world to sustain its human population*. Again, this is a reference to some sort of carrying capacity, but the threshold lies higher than in claim 4, aiming not just at the continued possibility of meeting basic needs, but at the continued existence of *just institutions*. How much is needed for this depends on how many people there are in the future. This argument for demo-sensitivity can be summarized as follows:

- (1) We have a duty to create (accumulation phase) and uphold (steady state) just institutions.
- (2) The transfers needed to establish/uphold just institutions fluctuates with the size of the population.
- (3) Thus, the size of intergenerational transfers depends on the size of the (future) population.

But as Heyd and others (e.g. Dasgupta 1994, 100) point out, the relationship between savings and population is:

deeper than hinted at by Rawls: it is not only that the (expected) numbers of future people should affect our savings policies as some sort of relevant background data; these numbers might very well be a crucial part of, or indeed the very subject of these policies. And as population trends have become something over which we – the present generation – have gained some control, we cannot avoid articulating normative principles for making those choices. (Heyd 1994, 42)

Population – insofar as it affects establishment and maintenance of just institutions – should be taken seriously by those genuinely committed to the idea behind the savings principle. Of course, population is not the only variable that matters for the possibility of stable just institutions. Levels of consumption, the possibility of mitigation, and the ability to use resources efficiently play an important role as well. A genuine commitment to sustainable just institutions requires a commitment to all the necessary preconditions for such institutions. Some demographic developments will, no matter how much we save, (generate an impermissible risk to) undermine just institutions. Each nation has an obligation from justice not to create a situation in which they are being held responsible for more than they can afford. If demographic changes undermine just institutions there are reasons from justice to (try) and alter them. Drawing on this argument, we can make sense of Rawls' reference to the reproductive labor:

The family is part of the basic structure, since one of its main roles is to be the basis of the orderly production and reproduction of society and its culture from one generation to another [...] Thus, reproductive labor is socially necessary labor. [...] The family must ensure the nurturing and development of such citizens in appropriate numbers to maintain an enduring society. (Rawls 2005, 467)

Creating citizens in *appropriate numbers to maintain an enduring society* should be understood as a requirement that demographic developments are compatible with the (establishment of) stable just institutions over time. This implies a reformulation of the argument for demo-sensitivity. We change one premise and the conclusion changes as well:

- (2*): Using policy instruments, both the savings rate and the size of a population can be influenced.
- (3*): Thus, we must adjust *either* the savings rate or the (future) population size to create or uphold stable just institutions. This implies a 5th and final claim that liberal egalitarians will support:

Claim 5. Stable Just Institutions: *demographic developments should be such that it is compatible with the maintenance – or, in the accumulation stage, with the creation – of just institutions.*

Demographic change is, on this view, permissible if it does not undermine the possibility of establishing or sustaining just institutions. A necessary requirement for a demographic change to be permissible is that by adapting intergenerational transfers, pressure on just institutions can be avoided. A demographic change that *cannot* be compensated for through savings (because would require an transfer that surpasses the capacity of the current generation to save) but *can* be prevented, would violate this rule.

What does this view imply in terms of the four different worries about population size? With regard to the absolute size, both over- and under-population are real possibilities. Any demographic development that leads to the collapse of just institutions because of an increase in numbers would not be acceptable. This is not a far-fetched scenario, as several historical examples of collapse partially due to an increase in population show.²³ Institutions can collapse, for similar reasons as mentioned above, under population pressure. At the lower level, there may be cases (again, perhaps especially in complex economies) where there is minimal number of people needed.²⁴

But not only the absolute size may matter here, relative size could matter too: a rapid growth may find an economy unprepared, and per capita investment in education and healthcare demanding. The reverse, rapid aging may put a just society under pressure as well, if the burden on the young becomes high or insufficient investment in the dependent elderly can be made. If this is the case, the *wasteful generation's* decisions above may very well be problematic: such rapid depopulation may threaten stable institutions. Controlled depopulation may be permissible. The specifics of scenarios and their probability need not concern us here. What matters is that these scenarios are thinkable and possible.

The threshold argued for here is substantially higher than the subsistence threshold. The difference can be explained by linking to the two stages of the savings principle: the *accumulation phase* and the *steady state*. The first minimal threshold applies to the *possibility* of just institutions: a demographic development that undermines basic needs, undermines the possibility of the creation of stable just institutions (it takes us out of the circumstances of justice). The second threshold applies once these institutions are established: they have to be continued into the future. This threshold is higher: a demographic development may contribute to the collapse of a just society without making its' reestablishment impossible.²⁵

Roemer's claim cited above, that optimum population is not a question of justice properly speaking, is correct. Rather, population size matters in so far as it affects the *possibility* of just institutions. This is a threshold view, and is indifferent between large inequalities between different generations that result from demographic change. One population is indeed not more (or less) just than

the other, if *both are internally just*. If one population, on the other hand, has gone through a demographic development that made just institutions either collapse or impossible to begin with, there are good reasons to say that it is *less just* than the other.

Rawls reference to the family as part of the basic structure and 'reproductive labor as socially necessary labor' is crucial. Although the government as the representative of the people may be liable for demographic developments in its' borders, this does not mean that the moral obligation to realize or avoid certain demographic developments lies with the government alone. The principles of justice apply to *all* institutions that make up the basic structure. There are many ways in which the state can and does influence demographic developments, but the range of acceptable policies is limited (see conclusion for some remarks on enforcement). The state cannot, morally speaking, in most circumstances strictly enforce reproductive rates. If the state was the *only* agent on which these demands had any force, one may conclude that to the extent that the state cannot change demographic change, we would have to treat demographic growth as given and try to accommodate it (e.g. Heyward, 2012).

However, if Rawls is right when he points out that the family's role is to produce and reproduce 'the right number of citizens,' the requirements of justice have force on the family as well. The state may be *liable* – it has to internalize, internationally speaking,²⁶ the costs of demographic change (Heyward, 2012, 103) – other agents may be blameworthy (for some worries about this claim in non-ideal circumstances, see (Meijers 2016a) in case where demographic developments violate the discussed standards. The family, as part of the basic structure, has a (collectively held) duty to produce the 'right number of citizens' (see e.g. Gheaus 2015). How the burdens of this collective duty should be distributed is another question (see e.g. Meijers 2016b, chap. 2).

Some argue that Rawls and Rawlsians are unable to deal with questions of sustainability in a satisfactory manner.²⁷ The proof of the pudding is in the eating. The strategy pursued here to define the limits on acceptable demographic change in order to protect the necessary conditions for stable just institutions could be applied to other questions of sustainability as well.²⁸ This argument should be understood as a part of a broader strategy to equip liberal egalitarianism to deal with issues of sustainable just institutions.

7. Justice and population

Based on these five claims, we can answer two distinct questions about population and justice. First, we can say much more about *what* justice requires (morally speaking) with regard to demographic change, and on *whom* these requirements fall. We have four constraints on our decisions that affect demographic change, which elaborate and clarify the Rawlsian view of justice between generations. First, there is not one optimum in terms of a particular value, but a range

of acceptable population sizes. Second, indefinite increase is impermissible. The positive requirements clarify the two-stage mode: the basic needs threshold and the just institutions threshold play their role within the *accumulation phase* and *steady state*, respectively. In other words, insofar as demographic developments are under human control, they have to be such that they are compatible with the (establishment of) sustainable just institutions, and their environmental and economic basis.

Second, we can say something about *who* should carry the consequences of (allowing) certain demographic developments to take place. Assuming national responsibility, this is the government as the representative of its people. There are, however, limits to this national responsibility. Insofar as past generations have failed to act on obligations of intergenerational justice, countries cannot be asked to shoulder the consequences, and should be treated as burdened societies, to which a duty of assistance is owed.

These claims help to fill another important gap in Rawls' account of intergenerational justice: an argument for the demo-sensitivity of intergenerational transfers. Demographic developments are something – to some extent – under our control. Combining this idea with the claim of responsibility (claim 1) allows us to justify why *how much* we ought to transfer to future generations depends on how large future generations are (instead of depending on how much we received from previous generations). If a future population is larger/smaller than the current population, current generations need to transfer *enough* for just institutions to survive this growth/decline in population, even if this requires substantial per capita savings. When should generations transfer more to future generations than they received from previous generations (Gosseries 2009, sec. 4)? Once we realize that demographic change is at least partially a consequence of decisions people and governments take, we could propose with Barry that:

[t]he size of future population should be brought within the scope of the principle of responsibility. We must define intergenerational justice on the assumption that “the increase of mankind shall be under the guidance of judicious foresight”, as Mill put it. If future people choose to let population increase, or by default permit it to increase, that is to be at their own cost. (Barry 1997, 56)

In so far as *G1* is collectively responsible for demographic change, it is also *their* collective responsibility to make sure that they save as much as needed to maintain just institutions. This gives Rawlsians the tools to explain why sometimes generations need to transfer more to future generations than they received, something most reciprocity-based views have difficulties explaining (Gosseries 2009).²⁹

The constraints proposed here work in tandem with the just savings principle. Once just institutions are established, both give substantial leeway for different plans (i.e. there is not *one* particular aim) but they set limits on what can be done. Like the savings principle, it restricts the application of the difference principle. Increasing the population in order to benefit the presently least well-off at the

cost of doing the generation's 'fair share of the burden of realizing and preserving a just society' (Rawls 1971, 289) is impermissible, both in the accumulation stage (when aiming to meet the demands of claim 3) and in the steady stage (acting on claim 4).³⁰

This does not mean that any population policy that is compatible with just institutions over time is permissible. There are other justice-related reasons why imposing certain limits on procreative behavior is impermissible.³¹ One may argue that some demographic policies will violate bodily integrity or pose threats to gender equality. Arguing for limits on demographic change is sometimes mistaken for appraisal of coercive policies like the Chinese.³² By endorsing certain goal as desirable one does not endorse all possible means to reach them: some means are better than others (see e.g. Sen 1999, 217–223), and sometimes the (moral) cost of enforcement may simply take priority over the (moral) cost of giving up the goal, because the available means violate the basic liberties protected under the first principle (which enjoys lexical priority). These questions of enforcement deserve further discussion, but I cannot do so here.

Additionally, one may argue that people have a weighty interest in having the opportunity to procreate and parent, and that these options should not be taken away – even if this could be done in a morally permissible way – to make future people *richer*. These are additional plausible limitations on demographic policies that governments may pursue, but they are not worries about population size, but concerns about justice among contemporaries: which sacrifices can be asked from whom, and how – if at all – can demographic policies be enforced? It may be wrong to coercively impose a certain demographic development, even though it does not lead to there being either too few or too many people.

We have seen that duties of intergenerational justice take priority over the difference principle. But suppose that we have to choose between two possible demographic policies compatible with just institutions over time. Policy A would require increased savings, making the least well-off in society slightly less well-off than under the alternative policy B. Do we have an obligation of justice to go for the policy which maximizes the position of the least well-off? The same question arises for intergenerational savings: would it not be unfair to ask the least well-off to contribute to savings? Rawls answers that they do not take an 'active part in the investment process'³³ but they would support the arrangement needed for the duty of saving to be met.

In the scenario under discussion this reply is not available: we stipulated that a certain demographic development is only compatible with intergenerational transfers diminishing the position of the least well-off. Given that their expectations 'are to be maximized subject to the condition of putting aside the savings that would be acknowledged [by the parties in the original position]';³⁴ it follows that reasonably avoidable demographic developments which require savings that diminish the position of the least well-off are unjust, unless they themselves agree to make a part of their fair share available to accommodate

demographic growth.³⁵ However, the veto of the least well-off in this case is valid *if, and only if*, (1) *there are no other ways* to pay for the maintenance of just institutions than taking from the share of those who have the least; and (2) averting a demographic development detrimental to the position of the currently least well-off can be done using acceptable means, i.e. it does not violate the basic liberties of contemporaries (due to their lexical priority).

This paper aimed to present a plausible reading of justice as fairness on population size. Should we accept it? Some aspects of the view presented are worrisome. It allows for significant inequalities between nations. Cosmopolitan egalitarians will find this problematic, at least insofar as there is no good instrumental justification for the inequalities. This does not mean they should reject the entire view described here. One may think that requirements that apply to each state should apply to the whole planet instead – and let go of claim No. 1.

A fundamental worry about the Rawlsian principles of intergenerational justice is what we could call the *permissiveness objection*. This objection comes in two forms. In its sufficientarian form it runs as follows: even if the basic needs and just institutions threshold are met, this does not mean future generations have *enough*: wasteful generations would, on these principles, be allowed to leave future generations a world in which people do not have a reasonable standard of living.³⁶ Whether this objection succeeds depends on where one places the threshold. Rawls thought that his view on intergenerational justice was not too permissive:

[i]t is a mistake to believe that a just and good society must wait upon a high material standard of life. What men want is meaningful work in free association with others, these associations regulating their relations to one another within a framework of just basic institutions. To achieve this state of things great wealth is not necessary. In fact, beyond some point it is more likely to be a positive hindrance, a meaningless distraction at best if not a temptation to indulgence and emptiness. (Rawls 1971, 290)

In other words, Rawls suggests that the goods needed to formulate and pursue meaningful plans in life are available under just institutions. For the sufficiency objection to succeed, one would have to show that there are relevant interests that are not protected by just institutions. For example, that if the minimum transfers are made it would be difficult for future generations to satisfy some of their most important plans in life. But from limited opportunities we cannot conclude an injustice. Rawls argues that people have 'responsibility for their ends,' which entails that they have to form plans that they can reasonably hope to achieve with the goods we are entitled to.³⁷ If the transfer is compatible with intergenerational justice, future generations will simply have to formulate plans within the constraints of the world the wasteful generation left them. For the objection to succeed, it is necessary to show that intergenerational justice requires more, e.g. a set of opportunities beyond the opportunities available under just institutions.

One could also appeal to the *egalitarian* version of the permissiveness objection: it is unfair to grant wasteful generations permission to waste resources as long as just institutions are preserved, because this results in future generations having *less* opportunities and primary goods than previous generations. Intergenerational egalitarians³⁸ – who defend the view that intergenerational justice requires equality (not sufficiency) – will object Rawls' indifference to intergenerational inequalities above the threshold. If one holds this view, the disagreement runs deeper. New challenges arise for setting demographic goals: strict equality across generations limits the range of permissible options, because it sets a specific aim for intergenerational justice. It requires that present generations transfer a combination of population that allows for intergenerational equality. Such more precise requirements may several limit the options of the living, which may stand in tension with the *liberal* commitments of liberal egalitarianism.

Notes

1. The number of people is not the only variable that matters for the total impact of humanity on the environment. Levels of consumption, availability of green technology, etc. play important roles as well. Nothing I say here should be read as implying that these other variables do not matter.
2. These developments give rise to question of justice between age groups and generations. See Daniels (1984) or McKerlie (2013). Both take demographic change as given developments that have to be dealt with in a fair way.
3. For different analysis see Goerres and Vanhuysse (2012), Parijs (1998) for several policy proposals.
4. The rapid economic development of countries like South Korea is sometimes explained in terms of rapid declines in fertility levels, which allowed for high per capita investment in the next generation. See May (2012, 49–52).
5. There are some exceptions, like Heyward (2012), Heyd (1994), Casal (1997), Miller (2005). The question how rank different population sizes in terms of goodness is left to population ethics, the link with *justice* is seldom made. See e.g. Parfit (1984, part IV), Broome (2004), Arrhenius (forthcoming). Another notable debate is that in *parental* justice, which is concerned with *who* should pay for children once they exist. See Casal and Williams (1995) or Olsaretti (2013).
6. Philosophers assuming population size as given or constant often acknowledge that this is problematic, e.g. Caney (2013, 299n), acknowledges that his discussion is incomplete without a further discussion of the population question.
7. This is certainly true for people that are currently alive, but the non-identity problem renders such claims problematic for future generations (Parfit 1984, chap. 16). Here I claim that population impacts the kinds of lives people have (now as well as in the future). This is not a comparative claim.
8. Due to anthropogenic Climate Change many of the things called 'natural disasters' are at least partially caused by human actions. Here I have non-human created disasters in mind.
9. This is not always true, e.g. in the developing world where having many children is often not a freely taken decisions. See (Meijers 2016a).

10. If we do not assume a 'closed society', migration is another factor, except when talking about the population of the planet). To avoid important topic, I will briefly mention migration but mostly focus on what is demanded in a closed society, like Rawls (1993, 11). For cosmopolitan egalitarians, given that from/to the world there is no migration, this is unproblematic.
11. Many cosmopolitan egalitarians, myself included, will fail to see the force of this counter-example and accept that redistribution is required, which may be an easy bullet to bite (e.g. Holtug 2011, 158).
12. E.g. Tan argues that 'citizens of disadvantaged countries are collectively held accountable for their country's unsound policies, even when a majority of them had no part in the making of these policies and that this is clearly inconsistent with Rawls' own moral individualism' (2004, 73).
13. This assumes that current generations care about their offspring or about the national project. If this is false, the instrumental justification for national responsibility does not hold.
14. Much more needs to be said about migration and sustainability. Barry (1992), Miller (2005) and Rawls (1999) reject the idea of open borders (partially) because it undermines national responsibility, which undermines incentives for sustainable choices.
15. Following Sen (1999, chap. 8–9) Rawls argues that: 'Respecting human rights could also relieve population pressure within a burdened society, relative to what the economy of the society can decently sustain. A decisive factor here appears to be the status of women. Some societies – China is a familiar example – have imposed harsh restrictions on the size of families and have adopted others draconic measures. But there is no need to be so harsh. The simplest most effect, most acceptable policy is to establish the elements of equal justice for women' (Rawls 1999, 109–110).
16. John Rawls in a 1974 unpublished letter to Edmund Phelps (02 July 1974). Harvard Rawls Archives, Hum 48 Box 13 Folder 8. I thank M. Rawls and T. Scanlon for their permission to use this quote.
17. One may doubt that *Procreantia* can actually be internally just given the position of its' women. Would women really freely accept position in which they flourish less in the economic and political world? This is an important worry, but let us assume for the sake of the argument, that this could be the case.
18. Rawls, unpublished letter to Phelps (02/07/1974). Harvard Rawls Archives, Hum 48 Box 13 Folder 8. In a similar passage he writes:

For one thing, I have considerable unease in applying the conception of justice to the problem of population size. I discussed this question only in connection with the contrast between classical and average utilitarianism, and not in connection with the two principles of justice. (I would like to think that they give a better conclusion than either form of the utility principle; but I am afraid that so much more enters in that the answer is still uncomfortably artificial. Yet the whole question is so difficult that perhaps even a simple scheme is of some help. Though one wouldn't want to rely on it alone).

John Rawls in a letter to Partha Dasgupta (26/06/1972), Harvard Rawls Archives, Hum 48 Box 18 Folder 7. I thank M. Rawls and T. Scanlon for their permission to cite these passages.

19. Many doubt whether Rawls' argument involving different number cases behind the veil is coherent (e.g. Barry 1977). I think there are ways to construct the original position that avoid the absurdities Barry (and many others) argue follow from having the contracting parties decide on different number cases – for example by emphasizing the condition of universality explored in Attas (2009, 202–204) or Reiman's (2007) proposal that the *particulars* of future people do not matter.
20. This draws on Casal: 'Few deny that the elimination of certain types of deprivation, such as hunger, disease, and ignorance, are very weighty political requirements. Many accept Rawls's view that a just society will guarantee a social minimum and may even agree that any reasonable conception of justice will favor 'measures ensuring for all citizens adequate all –purpose means to make effective use of their freedoms' (2007, 299).
21. Ehrlich's I-PAT formula is useful here: the total impact of humanity is a function the number of people (population), their affluence (resource consumption) and the level of technology (Ehrlich and Holdren 1971).
22. An additional complication is that, although this may be true on a global scale, a country may also make up for its' population growth through international trade. On the framework offered here it is unproblematic to depend on international trade for sustenance, as long as one can continue to do so in the future.
23. See for several examples Diamond (2005).
24. Although, in a globalized world, this services and goods can of course imported to address the needs of small communities (say, islands in the pacific with small populations).
25. Setting such a threshold blocks anything like the repugnant conclusion (Parfit 1984, chap. 17). Any demographic compatible with just institutions is not, at least not for reasons of intergenerational justice, to be regretted. Because of its' indifference to aggregation, the entire tendency towards increasing a population while lowering the per capita share is not present.
26. What justice requires with regard to the costs of parenthood and procreation within state is another question, see Casal and Williams (1995) and Olsaretti (2013) for opposing views.
27. Gardiner (2011), argues that different strategies that are open to Rawlsians, some pursued here, fail to pass his 'global test'.
28. As Casal (2007, 325) points out as well: 'Why Sufficiency is not Enough'.
29. Responsibility for keeping future people above the threshold runs into the non-identity problem. Several promising strategies – like Kumar's (2009) or Roser and Meyer's (2009) – to defend a person-affecting view of intergenerational obligations are compatible with the just savings principle. Alternatively, one could think justice institutions have impersonal value (e.g. Heyd 2009). The success of the approach Rawlsian approaches set forth here depends on one of these strategies succeeding. If not, this is not a problem specific to Rawlsian theories but one for all closely related views.
30. In the steady stage a generations does its fair share when it transfers sustainable institutions (i.e. responding to or adjusting demographic change) to the next generation. In the accumulation face (earlier generations, or generations after a period non-compliance) doing a fair share of saving is more demanding: accumulate for the sake of future generations living under just institutions. For a possible justification of why it is fair to burden already badly off generations, see Gaspart and Gosseries (2007, 197). For Rawls' discussion of the limit placed by the savings principle on the difference principle, see: Rawls (1971, 292).

31. See e.g. Heyward (2012, 719–725). She argues that in such cases there is a collective obligation to (try) to accommodate population growth.
32. See e.g. Meijers (2013). Rawls (1993, 110) explicitly rejects coercive population policies.
33. Rawls (1971, 292).
34. Rawls (1971, 292).
35. Gaspart and Gosseries (2007) criticize the permissibility of intergenerational savings at the cost of the least well-off, and argue that savings are unjust if (and in so far as) these transfers could be used to benefit the least well-off.
36. I want to thank an anonymous reviewer for pressing me on this issue.
37. E.g. It is supposed that they have adjusted their likes and dislikes, whatever they are, over the course of their lives to the income and wealth and station in life they could reasonably expect (Rawls, 2005, 186).
38. Most explicitly committed to equality across time are: Gaspart and Gosseries (2007).

Acknowledgments

I am grateful to T. Scanlon and M. Rawls for their permission to cite passages from Rawls' unpublished letters. I want to extend a special thanks to Axel Gosseries for commenting on several drafts of this paper, for his continuous support and for tracing down Rawls' unpublished letters in the Harvard Archives. This paper has benefitted greatly from comments by and discussion with Bruno Verbeek, David Axelsen, David dela Croix, Diana Popescu, Emanuele Murra, Juliana Bidadanure, Lukas Meyer, Marita Flikkema, Maxime Lambrecht, Nicholas Vrousalis, Nir Eyal, Serena Olsaretti, Siba Harb, Serena Olsaretti, Simon Caney, Thierry Ngooso, Thomas Ferretti and Thomas Mertens. Stephany Donze deserves a special thanks. I am grateful to audiences at the University of Minho, KULeuven and at the University of Louvain (UCL) for their comments. I acknowledge the support of the *Fonds pour la Recherche en Sciences Humaines* (F.R.S.-FNRS), the ARC-project on 'sustainability' (French community of Belgium).

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References

- Arrhenius, Gustaf. *Forthcoming*. *Population Ethics*. Oxford: Oxford University Press.
- Attas, Daniel. 2009. "A Transgenerational Difference Principle." In *Intergenerational Justice*, edited by Axel Gosseries and Lukas Meyer, 189–218. Oxford: Oxford University Press.
- Barry, Brian. 1977. "Rawls on Average and Total Utility: A Comment." *Philosophical Studies* 31 (5): 317–325.
- Barry, Brian. 1992. "The Quest for Consistency: A Skeptical View." In *Free Movement*, edited by Brian Barry and Robert Goodin, 279–287. University Park: Pennsylvania State University Press.
- Barry, Brian. 1997. "Sustainability and Intergenerational Justice." *Theoria* 45 (89): 43–65.
- Barry, Brian. 2005. *Why Social Justice Matters*. Cambridge: Polity Press.
- Broome, John. 2004. *Weighing Lives*. Oxford: Oxford University Press.
- Caney, Simon. 2013. "Just Emissions." *Philosophy and Public Affairs* 40 (4): 255–300.
- Casal, Paula. 1997. "Environmentalism, Procreation and the Principle of Fairness." *Public Affairs Quarterly* 4 (13): 363–376.
- Casal, Paula. 2007. "Why Sufficiency Is Not Enough." *Ethics* 117 (2): 296–326.
- Casal, Paula, and Andrew Williams. 1995. "Rights, Equality and Procreation." *Analyse und Kritik* 17: 93–116.
- Daily, Gretchen, and Paul Ehrlich. 1992. "Population, Sustainability and Earth's Carrying Capacity." *BioScience* 42 (10): 761–771.
- Daniels, Norman. 1984. *Am I my Parents' Keeper?* Oxford: Oxford University Press.
- Dasgupta, Partha. 1994. "Savings and Fertility: Ethical Issues." *Philosophy and Public Affairs* 23 (2): 99–127.
- Diamond, Jared. 2005. *Collapse*. London: Penguin.
- Ehrlich, Paul, and J. P. Holdren. 1971. "Impact of Population Growth." *Science* 171 (3977): 1212–1217.
- Gardiner, Stephen. 2011. "Rawls and Climate Change: Does Rawlsian Political Philosophy Pass the Global Test?" *Critical Review of International Social and Political Philosophy* 14 (2): 225–251.
- Gaspard, Frédéric, and Axel Gosseries. 2007. "Are Generational Savings Unjust?" *Politics, Philosophy & Economics* 6 (2): 193–217.
- Gheaus, Anca. 2015. "Could There Ever be a Duty to Have Children?" In *Permissible Progeny?*, edited by Sarah Hannan, Samantha Brennan and Richard Vernon, 87–106. Oxford: Oxford University Press.
- Goerres, Achim, and Pieter Vanhuysse, eds. 2012. *Ageing Population in Post-Industrial Democracies*. London: Routledge.
- Gosseries, Axel. 2009. "Three Models of Intergenerational Reciprocity." In *Intergenerational Justice* edited by Axel Gosseries and Lukas Meyer, 119–146. Oxford: Oxford University Press.
- Gosseries, Axel. 2014. "Nations, Generations and Climate Justice." *Global Policy* 5 (1): 96–102.
- Hardin, Garrett. 1968. "The Tragedy of the Commons." *Science* 162 (2859): 1243–1248.
- Heyd, David. 1994. *Genethics*. Berkeley: University of California Press.
- Heyd, David. 2009. "A Value or an Obligation." In *Intergenerational Justice*, edited by Axel Gosseries and Lukas Meyer, 167–188. Oxford: Oxford University Press.
- Heyward, Clare. 2012. "A Growing Problem Dealing with Population Increases in Climate Justice." *Ethical Perspectives* 19 (4): 703–732.
- Holtug, Nils. 2011. "The Cosmopolitan Strikes Back." *Ethics and Global Politics* 4 (3): 147–163.

- Kumar, Rahul. 2009. "Wronging Future People: A Contractualist Proposal." In *Intergenerational Justice*, edited by Axel Gosseries and Lukas Meyer, 251–272. Oxford: Oxford University Press.
- Lippert-Rasmussen, Kasper. 2009. "Responsible Nations: Miller on National Responsibility." *Ethics and Global Politics* 2 (2): 109–130.
- May, John. 2012. *World Population Policies*. Dordrecht: Springer.
- McKerlie, Dennis. 2013. *Justice Between the Old and the Young*. Oxford: Oxford University Press.
- Meijers, Tim. 2013. "Le bourgmestre et la limitation des naissances [The Mayor and Limits on Procreation]." *Revue Nouvelle* (4): 80–88.
- Meijers, Tim. 2016a. "Climate Change and The Right to One Child." In *Human Rights and Sustainability*, edited by Gerhard Bos and Marcus Düwell, 181–194. London: Routledge.
- Meijers, Tim. 2016b. "Justice in Procreation." PhD diss., University of Louvain.
- Miller, David. 2005. "Immigration, the case for limits." In *Contemporary Debates in Applied Ethics*, edited by Andrew Cohen and Christopher Heath Wellman, 193–206. Oxford: Blackwell Publishing.
- Miller, David. 2007. *National Responsibility and Global Justice*. Oxford: Oxford University Press.
- Miller, David. 2011. "National Responsibility and Global Justice." In *Nationalism and Global Justice: David Miller and his Critics*, edited by Helder De Schetter and Roland Tinnevelt, 14–30. London: Routledge.
- Olsaretti, Serena. 2013. "Children as Public Goods?" *Philosophy & Public Affairs* 41 (3): 226–258.
- Parfit, Derek. 1984. *Reasons and Persons*. Oxford: Oxford University Press.
- Parijs, Philippe. 1998. "The Disfranchisement of the Elderly, and Other Attempts to Secure Intergenerational Justice." *Philosophy and Public Affairs* 27 (4): 292–333.
- Parijs, Philippe. 2003. "Difference Principle." In *The Cambridge Companion to Rawls*, edited by Samuel Freeman, 200–233. Cambridge: Cambridge University Press.
- Rakowski, Eric. 1991. *Equal Justice*. Oxford: Oxford University Press.
- Rawls, John. 1971. *A Theory of Justice*. Cambridge: Belknap Press of Harvard University.
- Rawls, John. 1993. *Political Liberalism*. New York: Columbia University Press.
- Rawls, John. 1999. *The Law of Peoples*. Cambridge: Harvard University Press.
- Rawls, John. 2001. *Justice as Fairness: A Restatement*. Cambridge: Harvard University Press.
- Rawls, John. 2005. *Political Liberalism: Expanded Edition*. New York: Columbia University Press.
- Reiman, Jeffrey. 2007. "Being Fair to Future People: The Non-Identity Problem in the Original Position." *Philosophy & Public Affairs* 35 (1): 69–92.
- Roemer, John. 1996. *Theories of Distributive Justice*. Oxford: Oxford University Press.
- Roser, Domic, and Lukas Meyer. 2009. "Enough For the Future." In *Intergenerational Justice*, edited by Axel Gosseries and Lukas Meyer, 219–248. Oxford: Oxford University Press.
- Sen, Amartya. 1999. *Development as Freedom*. Oxford: Oxford University Press.
- Tan, Kok-Chor. 2004. *Justice Without Borders*. Cambridge: Cambridge University Press.
- UNFPA. 2012. *World Fertility Report* revised edition. New York: United Nations.