JOANNEUM RESEARCH POLICIES

Studien zum Klimawandel in Österreich

Band X

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Demography and climate change

The growing number of people and its consequences for ecology, social redistribution systems and urban living

THE INNOVATION COMPANY

Verlag der Österreichischen Akademie der Wissenschaften
ÖAW

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Climate change and the ethics of population

John Broome, Key Note Address

The ethics of population is vitally important for public policy and is the topic of this paper. Very many public policies affect the population of an individual country and consequently the population of the world.

The most obvious examples are policies that deliberately aim to alter the population. China's one-child policy and the provision of free contraception are examples. Opposite pro-natalist policies are also promoted by a number of countries.

Other policies obviously change the population but not so deliberately. Examples are fertility treatment provided free by a public health service, or policies that save people's lives. Most governments do what they can to save lives by making roads safer, regulating airlines and so on, and saving a life often changes the population of the world.

By the population of the world I mean the eternal population, which is the number of people that live at any time. I do not mean the number of people who are alive at any particular time. Saving a life immediately changes the number of people who are alive at a particular time: just after the life is saved, the person who is saved is alive when she would have been dead. But it also commonly happens that people whose lives are saved because roads are made safer later have children. Young people generally do have children, so if lives are saved at a young age, it will generally cause the creation of a number of further children and possibly a whole line of descendants.

Tax policies also affect the population. Taxes affect the way people live, and that in turn affects their decisions about having children. Some taxes have this effect deliberately; more often it is accidental.

In sum, there are many, many policies that affect population. I am particularly going to concentrate on policies about climate change, because climate change is a very potent force for altering the population of the world. It will alter the population through various means. It will force migration from countries that are going to be flooded. It will probably increase the range of tropical diseases. It will increase the amount of poverty, which affects the fertility rate. Heat waves kill many people. Climate catastrophes such as droughts and floods are increasing in frequency. And so on.

Most importantly, there is a real and not minute possibility of extreme climate change. There may be warming of 6 degrees, and there is even a small possibility of 10 degrees. Temperatures like those would make it impossible for the world to sustain the population it has at the moment. Agriculture would become much more difficult. Sea levels would rise, flooding many agricultural areas. High temperatures anyway make it harder for plants to grow, so it would be harder to produce food. If temperatures reach extreme levels, there will be also major shortages of water. The world's population will not be able to survive at those temperatures. The population will crash. If the temperature increase is extreme, there is even a possibility that human beings will become extinct – that is the most extreme sort of population change. So if we do something about climate change, we shall affect the world's population.

In all the different ways I have mentioned, public policy affects the world's population. This means we have to think about the value of population if we are going to assess policies properly. We have to think about whether it is a good thing or a bad thing to increase or decrease the population.

That subject has been discussed a great deal within philosophy in the last few decades. The discussion was initiated by Derek Parfit in his book *Reasons and Persons*, which came out 1984. There has been an enormous amount of writing within philosophy since then. But the subject seems not to have been noticed much outside philosophy. A few economists have been interested in it. In particular, Charles Blackorby, Walter Bossert and David Donaldson have written large numbers of papers and finally a book on the subject of the value of population. Partha Dasgupta also has an interest in that subject. In the 60s and 70s, when a subject called 'optimal growth theory' flourished within economics, there was some discussion of the value of population then. Nevertheless, the discussion in economics has been very limited. As far as I know, there really is no serious discussion on value of population within the public policy community. Yet it is evidently important because so many policies affect population.

Why is it so widely ignored? I think the answer is that most people think we can legitimately ignore changes in population when we evaluate what we do. They think that changes in population are ethically neutral; they do not affect the value of the world. I call this idea 'the intuition of neutrality'. A lot of us are gripped by this intuition. I am myself. We think that adding new people to the world has no value in itself. Conversely, we think that preventing the addition of new people to the world also has no value or disvalue. This intuition causes a lot of people to ignore the question of the value of population. It was well expressed long ago by the philosopher Jan Narveson, who said 'We are in favor of making people happy, but neutral about making happy people'. We do not value creating people even if they will be happy. On the other hand, we do care about the wellbeing of the people who do exist. That is the intuition of neutrality.

That intuition seems to be directly at work in a lot of thinking about public policy. For example, economists think a lot about the value of saving people's lives, they are used to setting a monetary value on people's lives. In Britain the value is about £1.5 million at the moment. Yet these economists never include within that value any component for the wellbeing that will be enjoyed by the people who are created as a result of life-saving. If roads are made safer, more young people's lives are saved on the roads, those people will have babies. But nothing is ever added to, or subtracted from, the value of saving their lives on account of the extra babies who are created. The babies are simply ignored. I believe that is one consequence of the intuition of neutrality.

UK public policy shows another example. In the UK, the National Institute for Health and Clinical Excellence evaluates medical treatments including fertility treatment. One obvious effect of fertility treatment is to promote the creation of new people. But NIHCE, firmly set its face against giving any value, either positive or negative, to that effect. The only thing that it values in fertility treatment is the benefit it brings to the parents. It completes ignores the resulting children.

So the intuition of neutrality is common and powerful. On the other hand, a lot of us also have contrary intuitions. For example, a lot of people are opposed to extinction. A lot of people think intuitively that the extinction of the human population would be a bad thing. That might be because they do not like all the killing that is likely to be involved in the course of our becoming extinct. To cancel out this concern, imagine a sort of extinction that happens without anybody's suffering. Imagine that human beings just stop having children, and arrange things so that nobody suffers as a result. After a while there will be no more people. Many of us have the intuition that that would be a bad thing. We would like humanity to survive. That intuition is obviously contrary to the intuition of neutrality, according to which extinction would be a neutral thing. The effect of extinction is to prevent the population from continuing to expand in number, and according to the intuition of neutrality, the number of the population counts for nothing.

So we have conflicting intuitions. Our intuitions are not very clear. Another ~~one~~, which you find often amongst economists, is revealed in the common practice of valuing things on the basis of people's

average wellbeing. In valuing the future course of economic growth, economists very often do it on the basis of the average wellbeing of people in the future. They implicitly accept a principle called 'average utilitarianism'. This principle is explicit in a lot of economics. Again, it is inconsistent with the intuition of neutrality. If you value things according to the average level of wellbeing, you will be in favor of adding people to the world if their wellbeing will be above the current average, because adding them pulls up the average. You will be against adding people to the world if their wellbeing will be below the current average, because adding them pushes down the average. So you will normally be either for or against adding people. That is why average utilitarianism is inconsistent with the intuition of neutrality.

Nevertheless, it is a very popular view, especially among economists. Its popularity is a puzzle, because it is actually a very implausible theory. It has some implausible consequences. The first one is this. If you think that the value of the world is the average wellbeing of the people in it, then you will think it is a good thing to add a new person to the world if her wellbeing is above the current average. So the value of adding a new person to the world depends on the average wellbeing of people who already exist. This includes people who are very, very remote. Some of them live in the furthest corners in the world or at some distant period of the world's history. They still count in the average. It is very implausible that the value of creating a new person here and now should depend on how well off people are in the remotest islands of the Pacific. That is one implausible consequence.

Another is this thought experiment. Imagine people are very, very well off. Imagine we are wondering whether it is a good idea to add new people who will also be very well off but just a little less well off than the existing people. If we were average utilitarians, we would be against adding these people, because they would pull down the average, yet they would lead very good lives. It seems very odd to be opposed to the adding of new people who will have very good lives, just because we already have even better ones.

So the consequences of average utilitarianism are implausible, and yet many people are attracted by it. Why? I think it is because they mistakenly associated average utilitarianism with the intuition of neutrality. The intuition of neutrality implies that what matters is not the number of people but how well off people are. And they think they can capture that idea with the average theory. They do not notice that the average theory is actually inconsistent with the intuition of neutrality. The average theory is still their way of trying to get hold of the idea that what matters is the wellbeing of the people there are, and not the number of people.

Also, for a long time average utilitarianism was treated as the only available alternative to 'total utilitarianism'. Total utilitarianism is the view that the value of the world is the total of the wellbeing of all the people who live. Because many people found total utilitarianism unsatisfactory, they chose average utilitarianism instead.

My conclusion so far is that we do not have coherent intuitions about the value of population. Some of us are opposed to extinction, and some of us believe in average utilitarianism. Nevertheless, the intuition of neutrality is shared by great many people. For them, it is a very powerful intuition. I think that is why there is so little interest in the value of population among people who work on public policy.

My next point is that the intuition of neutrality is false. The intuition that justifies the common practice of ignoring population in public policy is in fact incorrect. We are therefore not entitled to ignore population. Here comes my argument for this conclusion.

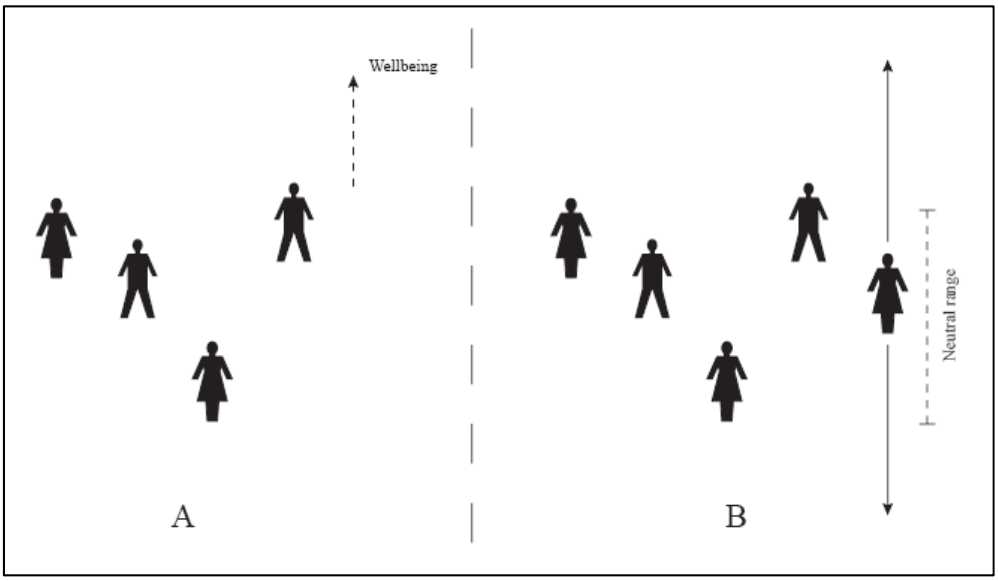
It comes in two parts. It starts by dividing the intuition of neutrality into two versions – a strong and a weak version – and stating those two versions more precisely. Here is a more precise statement of the strong version of the intuition of neutrality:

There is some range of levels of wellbeing ('the neutral range') such that: if two worlds are the same (they have the same people at the same level of wellbeing) except that one contains an extra person who does not exist in the other, and if the wellbeing of the extra person is within the neutral range, then the two worlds are equally good.

Think about two worlds, each of which has some people in it. All but one of the people exist in both of the worlds, and they are equally well off in both of those worlds, but one of those worlds contains an extra person. According to this strong version of the intuition of neutrality, these two worlds are equally good. That's the idea of neutrality. Bringing a new person into the world makes it neither better nor worse; it leaves it equally as good as it was before.

The formula is a little more elaborate, because probably most people do not agree with exactly what I have just said. Most people think that, if a person was brought into the world and her life would be really awful – if she would be in constant pain, say – that would be a bad thing. So the intuition of neutrality is in practice probably limited to some range of wellbeings that the extra person might have. I call it the 'neutral range'. So the intuition set out more fully is that if there is an extra person and her wellbeing is within the neutral range, then the world where she exists is equally as good as the world where she does not.

Figure 1: Strong intuition of neutrality

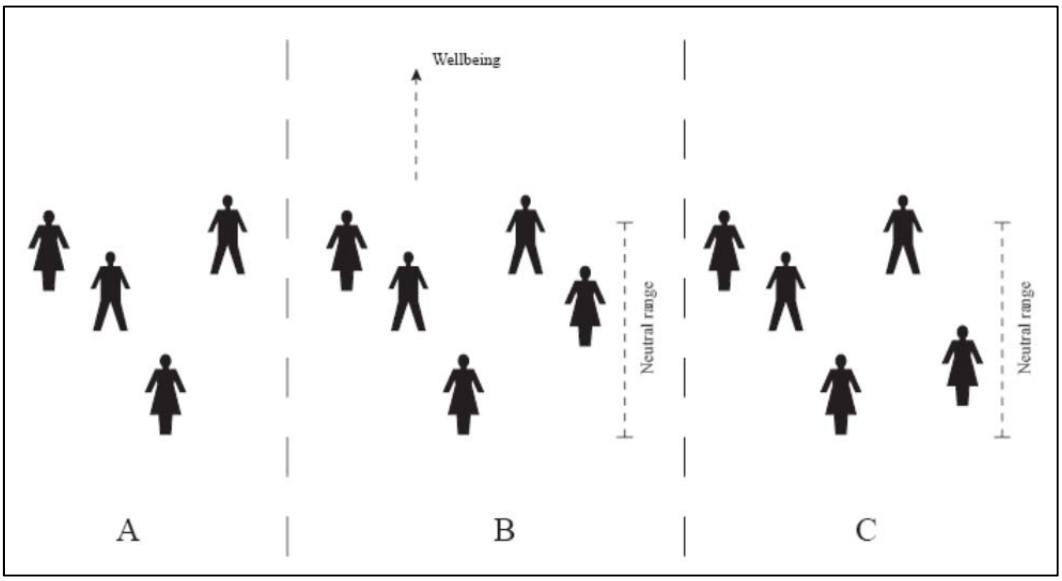


Source: The author.

Here is the picture of the strong version of the intuition of neutrality. Compare the worlds A and B. They are exactly the same for all but one person. Wellbeing is measured in the vertical direction. The further up a person is, the better off she is. The first four people are equally well off in A and B, and in B there is an extra person. She is within the neutral range. The intuition is that A and B are equally good.

This strong version of the intuition is definitely false. The next diagram shows why.

Figure 2: Why the strong intuition of neutrality is false.



Source: The author.

Compare first A with B. They are the very same A and B as in the previous diagram. The intuition is that A and B are equally good. For the very same reason, the intuition says that A and C are equally good. So the intuition says both that A and B are equally good and that A and C are equally good. It follows that B and C are equally good.

But B and C are not equally good. These two worlds are easy to compare in value because they each have the same population: the same five people. Four of them are exactly as well off in B as they are in C, but the fifth person is better off in B than she is in C. So B is obviously better than C. It is equally good for four people and better for one person. The implication of the strong version of the intuition of neutrality is obviously false. It follows that this intuition is false.

The weak version of the intuition of neutrality is:

There is some range of levels of wellbeing ('the neutral range') such that: if two worlds are the same (same people at the same level of wellbeing) except that one contains an extra person who does not exist in the other, and if the wellbeing of the extra person is within the neutral range, then neither world is better than the other.

The only difference is that, where the strong version says 'the two worlds are equally good' the weak version says 'neither world is better than the other'. That allows for the possibility that neither world is better than the other but the two worlds are not equally good either. A lot of people think it possible that, of two things, neither is better than the other, and they are not equally good either. We say they are 'incommensurate' in value.

This weaker version of the intuition is invulnerable to the argument I just gave. However, I think the weaker version is also false. I should confess, though, that the argument that the weak version is false is not as solid a proof as the argument that the strong version is false. Nevertheless, I certainly think that we should reject both versions of the intuition. The intuition of neutrality is false.

What conclusion should we draw? First, we should draw the negative conclusion that we have to do better. In thinking about policies, we have ignored changes in population. We did so on the grounds that changing the population has neutral value. Now we know its value is not neutral, we have to take

account of this value when we make decisions about all those policies that will affect population. We cannot justifiably judge them unless we think about the consequences for population.

For example, in thinking about climate change, we need to think about the possibility that humanity might become extinct. We have to think about what value we should attach to the extinction of humanity. ~~The~~ effect on population might not be as extreme as extinction. Suppose the population collapses to one billion instead of nine billion; is that a bad thing? How bad is it, if it is bad? Or maybe again, is it a good thing? We definitely cannot think it is a neutral thing that can be ignored.

I also have a positive point to make. The argument I went through shows there is no such thing as a neutral range, within which adding to the population is neutral. It shows that there is at most a single neutral *level* of wellbeing. This is a level such that, if we add to the population of the world a person whose life is as at that level of wellbeing, then having that person is equally as good as not having her. If somebody comes into existence and her wellbeing is greater than this neutral level, her existence is a good thing and we should be in favor of having her. If she comes into the world and her life is below the neutral level, her existence is a bad thing and we should be against having her. So we've reduced the problem of evaluating changes in the world's population to the one problem of identifying what the neutral level is. ~~Deciding what the neutral level is, is all that is left to do.~~ We have already made a big step forward.

We can even start to think about what the neutral level actually is. The first question to ask about it is: is it constant, so we only have to look for one level of wellbeing that is the neutral level? Or does the neutral level depend on the people that we already have? If you are an average utilitarian, you think that the neutral level is the average wellbeing of the people that currently exist. You think that, if you add a person to the world, and her wellbeing is above that average level, that is a good thing because it increases the average. If you add a person and her wellbeing is below that average level, it is a bad thing because it decreases the average. If you add a person whose wellbeing is exactly the current average, it is a neutral thing, neither good nor bad. So, average utilitarianism implies that the neutral level depends on the state of the existing population. It is specifically the theory that the neutral level is the average wellbeing of the people who already exist.

I disagree with average utilitarianism. There are plenty of other theories you might adopt about the value of population, but the theory I recommend implies that the neutral level is constant. It implies there is one particular level of wellbeing such that, whatever the state of the current population, it is good to add a person who has a higher level than this and bad to add anyone who has a lower level. The consequence of this view is the theory of population recommended by Blackorby, Bossert and Donaldson, and also recommended by me. Those three call it 'critical-level utilitarianism'; I call it 'normalized utilitarianism'.

That is as far as I can go with positive conclusions. I next have to tell you that, although this is what I think, and Blackorby, Bossert and Donaldson think, there are great many people who think differently. They have other theories about the value of population. The community of philosophers is full of people with widely differing views about how good population is. Even those who believe there is a single neutral level differ over what that level is. We have no consensus about the value of population. And yet the value of population makes a crucial difference to important policies. For example, it makes a crucial difference to climate policy.

A view gaining ground in economics now is that the most important issue of climate change is this possibility of catastrophe. Martin Weitzman is particularly associated with this view. Weitzman thinks we do not have to worry much about how good the world will be if we get the sort of climate change that we predict as the most likely. This is because there is a possibility that climate change will be

devastating. This possibility is so bad as to outweigh all the considerations that stem from climate change at about the most likely level.

So the possibility of catastrophe has become important in the literature on climate change. But we cannot think properly about the value of catastrophe because catastrophe will cause the population to crash or even to go extinct, and we have no consensus about the value of population. So the present situation is that we have radical disagreement about a question that is practically extremely important.

We have uncertainty about value and disagreement about value. This is a severe problem. We do not know how we ought to act. Consequently, we have to think about what we ought to do when we do not know what we ought to do. This question is now being addressed by moral philosophers. You might think there can be no special difficulty over it: we should simply apply expected utility theory. Most of us think that expected utility theory is the correct way of handling uncertainty, so we should simply apply it. We have empirical uncertainty about how much the climate will change, and we also have the uncertainty about value that I have been describing, and expected utility theory can tell us what to do about both. So far as uncertainty about values is concerned, we should assign a probability to the various different theories, evaluate things according to the different theories, and then calculate the expected value.

The problem is that we cannot do that. We are dealing with different theories of value, which measure the value of the world in different units. Average utilitarianism measures it in terms of units of wellbeing. Total utilitarianism or critical level utilitarianism measures it in terms of units of wellbeing multiplied by the number of people. In this way, different theories impute different 'dimensions' to value. They measure value in ways that are incompatible with each other. We face a problem of 'intertheoretic comparisons of value', as it is put. Many economists are sceptical about interpersonal comparisons of value; here is a parallel but more severe problem.

Some of the same techniques from social choice theory can be applied to intertheoretic comparisons as are applied to interpersonal comparisons. I can say only that we face a real problem over uncertainty of values, because we have serious uncertainty over the value of population. Moral philosophy is facing up to the question of what to do when we do not agree about what we should do. But it has not yet reached an answer to this question. We in moral philosophy recognize that this is a vitally important question for practical public policy, because public policy has such important impacts on the world's population. We are working on it.

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[1] Even though the contributions to this publication have been submitted in 2012, the list of authors gives the biographical infomation up to date at time of publishing in 2015.

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