Fact-insensitive thought experiments in climate ethics

Exemplified by Parfit's non-identity problem

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Abstract

More than some other fields of ethics, climate ethics is related to pressing real-world problems. Climate ethicists have a responsibility to be precise about the status of the problems they discuss. The non-identity problem (NIP) plays are a prominent role in the climate ethics literature. In a widely discussed statement, Derek Parfit claimed that a risky climate policy is not harmful for (distant) future people. But this ignores the "insignificant-causal-factors rejoinder". The Parfitian assertion is still treated as serious problem to theories of climate justice in key philosophical texts, and this may mislead climate policy decision-makers. Philosophers should acknowledge that the NIP, when applied to climate change, is "just" a thought experiment and should communicate it in this way to people outside the philosophical community.

Keywords: Non-identity problem, Derek Parfit, methodology of climate ethics (research), thought experiments

1. Introduction

A thought experiment is a deviation or abstraction from reality, much as a "model" is a simplification. The latter is never a completely true representation of the real system, which is far too complex to replicate in its entirety. It is for this reason that Box and Draper (1987) wrote, "essentially, all models are wrong, but some are useful."[1] This sentence applies to thought experiments too.

This article is devoted to the methodological status of the non-identity problem in the context of climate ethics (as a shorthand, the term "climate non-identity problem", C-NIP, is used).[2] The next section contemplates thought experiments in general. The subsequent section zeros in on the NIP and distinguishes between the C-NIP in the formulations of Derek Parfit and the NIP in other areas. The task of that section is to argue that there is a cogent counterargument against the C-NIP that has so far been

[1] Box/Draper 1987, 424.

[2] "Non-identity problem/nonidentity problem" is spelt in the literature in two ways. I have followed Parfit (using the hyphen).

widely overlooked by the proponents of the Parfitian account of the C-NIP. In the concluding section, the threat that the C-NIP may mislead climate policy decision-makers – if it is treated as a "real-world problem" instead of a thought experiment – is discussed.

2. Fact-sensitive v. fact-insensitive thought experiments

Thought experiments play a crucial role in all philosophical subdisciplines, including climate ethics. What are their defining features? All thought experiments are, in one way or another, counterfactual (or, depending on how these words are defined, unrealistic, hypothetical, imaginary, etc.). Thought experiments may be descriptions of situations that are *possible* logically and terminologically even if they are not *possible in our real word* – that is, earth with its laws of nature and its people as they are – I will call this type "fact-insensitive thought experiments". They may also be descriptions of situations that have not happened, but in fact could have happened, as they are congruent with all real-world circumstances ("fact-sensitive thought experiments").[3] Apart from containing elements of counterfactuality, there is no consensus about the nature and the function of thought experiments in ethics. To be sure, calling every fictional story, novel or movie that has not really happened as told a "thought experiment" would stretch the concept too far.

Thought experiments differ from fiction in several ways. First, they do not come out of the blue. There is a context. This context can be a puzzle that has not been solved for some time, and the newly-devised thought experiment is a contribution aimed to help solve the puzzle. It is also possible that the thought experiment generates new open questions. To put it differently: a fictional scenario published as a stand-alone piece is not a thought experiment but a piece of literature.

Second, as a result of this, thought experiments are (or at least should be) extremely cognizant of details. Each parameter of the imagined thought experiment is important, as the omission or addition of parameters will change the engendered intuitions.

Third, one more difference between a thought experiment and any other form of fiction, such as a novel or a movie, is the briefness of the former. The written description of a thought experiment is seldom more than a few paragraphs.

[3] Page (2007, 18) argues the case for hypothetical, but not imaginary, thought experiments in his book *Climate Change, Justice and Future Generations*: "While a coherent approach to issues of intergenerational ethics requires extensive appeal to hypothetical examples (which, for example, attempt to tease out our convictions about the merits of climate change policies which will have differential impacts on the quality of life of future populations), it is my view that appeals to imaginary examples should be avoided wherever possible. Imaginary examples are those which 'involve logical possibilities that could occur only in a world very different from ours'." And he continues in a footnote, citing Jamieson 1993, p. 484: "Hypothetical examples, by contrast, 'involve instances of situations or events that have occurred, or could occur without requiring us to rewrite physics or change our basic conception of how the world works'."

3. Parfit's "non-identity problem" in the context of climate change

The non-identity problem was first formulated by Schwartz (1978), Adams (1979) and Bayles (1980), then described in greater detail by Kavka (1978, 1982), and developed most effectively by Parfit (1984) in his book *Reasons and Persons*.

In the renowned *Stanford Encyclopedia of Philosophy* the entry about the NIP has been contributed by Melinda A. Roberts, and it starts as follows: "The non-identity problem focuses on the obligations we think we have in respect of people who, by our own acts, are caused both to exist and to have existences that are, though worth having, unavoidably flawed – existences, that is, that are flawed if those people are ever to have them at all."[4]

It is indisputable that the NIP applies to procreative decisions. Take, for instance, the case of a woman who is raped by a stranger and becomes pregnant as a result. If an abortion is ruled out, this act will induce the existence of a particular child with a unique genetic endowment. The child that comes into existence owes its traits (e.g. colour of skin) to the genes of both the mother and the father. It is clear that if this child had not been created from the particular genetic material from which it was in fact created, then this person would never have existed.[5] According to the "person-affecting" intuition, an act can be wrong only if that act makes things worse for a particular person.[6] But assuming that the procreated child in this example has a life worth living, the act that created it was not bad for that child as it owes its very existence to this act. Accordingly, the rapist has inflicted harm upon the mother, but not upon the child itself. Hence, the child has no grounds to complain, as a life worth living arguably is in any case better than not being born at all. Thus we cannot say that this child (or any particular child) has been wronged, or made worse off, by any act that is the deciding factor for its existence.

In this article, the validity of the NIP in "close-to-the-birth clinic" procreative contexts is not disputed at all. But there is a danger of overestimating the ambit of the NIP. Axel Gosseries, for instance, ponders: "Yet, it appears that the scope of the non-identity problem extends far beyond these biomedical cases. Hence, the non-identity challenge should be taken very seriously. While not affecting all our decisions, be they of a bioethical nature or not [...], it certainly affects *many* of our policy choices as well as the meaningfulness of ascribing rights to future people in such cases."[7] And Schwartz claims: "whatever we may owe ourselves or our near posterity, we have no obligation extending indefinitely or even terribly far into the future to provide any widespread, continuing benefit to our descendants."[8]

In the context of climate ethics, the following of Parfit's classic examples is the most relevant: "Depletion: Suppose that, as a community, we must choose whether to deplete or conserve certain kinds of resources. If we choose Depletion, the quality of life over the next two centuries would be slightly higher than it would have been if we had chosen Conservation, but it may later be much lower. Life at

[4] Roberts 2015; Roberts has written several books and articles about the NIP before, among them Roberts (1998).
[5] Mulgan 2002, 6.
[6] Roberts 2015.
[7] Gosseries 2008, 460.
[8] Schwartz 1978, 3. Likewise Heyd 1992, 80.

this much lower level would, however, still be well worth living."[9] Parfit goes on to say: "If we choose Depletion rather than Conservation, this will lower the quality of life more than two centuries from now. But the particular people who will then be living would never have existed if instead we had chosen Conservation. So our choice of Depletion is not worse for any of these people."[10]

It does not really matter if a resource or a sink (such as the atmosphere with its capacity to absorb greenhouse gases) is used in this example: to transfer Parfit's "depletion problem" in the context of climate ethics, replace "depletion" by "high emissions" and "conservation" by "low emissions". In 2010, Parfit did this himself when he adapted his "depletion problem" in *Energy policy and the further future*, a chapter of *Climate Ethics: Essential Readings* (ed. by S. Gardiner, S. Caney, D. Jamieson and H. Shue). He states: "The Risky Policy: Suppose that, as a community, we have a choice between two energy policies. Both would be completely safe for at least two centuries, but one would have certain risks for the further future. If we choose the Risky Policy, the standard of living would be somewhat higher over the next two centuries. We do choose this policy. As a result there is a similar catastrophe two centuries later, which kills and injures thousands of people."[11]

Parfit's parallel cases of the "depletion problem" and the similar "climate policy problem" is to this day the point of reference for many climate ethicists (and other ethicists).[12] Clark Wolf, for instance, formulates the C-NIP as follows: "The US President faces a decision that will determine the future of energy policy and will influence the availability of energy alternatives for many generations in the future. Policy A will create dramatic but relatively short-term benefits for the next two or three generations, but is expected to lead to environmental disaster in the long run. Policy B will yield slightly lower benefits in the proximate future, but these benefits will be sustainable for the foreseeable future."[13]

Edward Page has a similar description of the C-NIP; he just calls the two policy options "Kyoto Lite" (this being the high emissions policy) and "Contraction and Convergence" (the low emissions policy).[14] The implications are the same: "since harm-based, or identity-dependent, reasoning is deeply ingrained in the ethics, law and commonsense morality of most countries, the non-identity problem suggests that our duties to posterity may be weaker, and less extensive, than is often supposed."[15]

Or see the C-NIP in the formulation of Steve Vanderheiden: "Given our choice between policies that Parfit calls 'Conservation' and 'Depletion' – options that can be taken to represent effective and ineffective climate policy – and the different levels of material prosperity that are likely to result from either option, the identities of future persons turn on our present decisions. [...] As a result of choosing a high-growth, high-consumption, and high-pollution path, the planet's future capacity to fulfill human wants and needs will likely be significantly diminished by environmental degradation and climatic

[9] Parfit 2010, 114.
[10] Parfit 2010, 114-115.
[11] Parfit 2010, 112.
[12] E.g. Gosseries 2008, 2002; Vanderheiden 2008, 2006, Page 2008, 2007; Roberts and Wassermann 2009; Mazor 2010; Broome 2004; 1992, 125-130; Wolf 2009.
[13] Wolf 2009, 95.
[14] Page 2007, 133.
[15] Page 2007, 134.

instability, worsening conditions for those inhabiting the future world. While we can reliably predict these adverse consequences for those who *would* live in a polluted and depleted future world, Parfit argues that we cannot validly say that our present policy choice actually harms any future person."[16]

Gosseries illustrates the problem by describing the situation of a father who drives to work every day with his car, thus emitting greenhouse gases.[17] If his daughter were to someday reproach him for this, he could respond that the point in time of his return home to his wife from work in the evening also affected the point in time of their coitus. If he had instead used his bicycle, he might have caused less harm to the environment, but then his daughter, the one who is now reproaching him, would never have been born. A different sperm would have fertilized a different ovum, so that instead of individual X, individual Y would have been born.

Note, however, that there is an important difference between the setting in which a generation A collectively brings generation C, instead of generation B, into existence (as the formulations of the C-NIP of Parfit, Wolf, Vanderheiden and Page suggest) and Gosseries' setting in which an individual father A brings child C, instead of B, into existence. In Gosseries' "car-loving father" example, the case is made for a different point in time of conception by the same two people, the parents. In contrast, Parfit, Wolf and Page argue that a certain climate *policy* will lead to the effect that different people (prospective parents) will meet, mate and make children. [18]

The rejoinder against the C-NIP that is laid out in the following will disarm both versions: the collective and the individual C-NIP. In short: with regard to climate policy, the NIP overlooks the difference between probability and determinacy. It treats each single event as if it would be deterministically responsible for the birth of particular children, thereby ignoring the potpourri of antecedent events.

This may be illustrated as follows. Imagine that a proponent of the C-NIP claims: "If we emit a lot of greenhouses gases in the next 200 years, this might be bad for future generations, but it will also impact who will be meeting, mating and making children with whom. As a result, a different set of people will come into existence compared with any alternative policy." His listener might answer: "Ok, your claim sounds 100% correct."

But then a bystander steps in and argues: "But this is not the only factor that will have an impact on who will be meeting, mating and making children with whom. I have heard that the government will extend the opening times in bars from 11pm to 3am. This will also have an impact on who will be meeting, mating and making children with whom, won't it?"

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[16] Vanderheiden 2008, 122.

[17] Gosseries 2008, 460.

[18] Heyd (1992, 193-203) pointed out (in different words than mine) that in examples such as the "car-loving father", the habit of driving may be responsible for the creation of the particular child of this father (the nonidentity problem may apply), but the air pollution that comes with this habit is also lowering the level of wellbeing for all other children in the neighborhood (the nonidentity does not apply to them). Tremmel (2009, 39) calls this the "your neighbour's children" argument which he illustrates graphically. This argument against the NIP can be ruled out if it is assumed, changing Gosseries' example, that all fathers in one community simultaneously engage in the same habit. Thus Parfit's Risky Policy example is cognizant of the detail that a *policy* example (assuming that all agents do collectively the same thing) builds a stronger case for the proponents in the C-NIP than *individual behaviour* examples.

Her counterpart nods and replies: "Well, this is also correct. But then the first factor, the high emissions policy, might account for 50% of the stated effect, and the change in opening times will account for the other 50%."

But then another bystander steps in and interjects: "According to reliable forecasts, the number of female students at universities will double within the next ten years. This will definitely have an impact on who will be meeting, mating and making children with whom." The other two contend: "Then all three factors that have been mentioned may account for 33% each." Another bystander steps in and adds: "Don't forget the new dating app for smartphones! It will also have an impact on who will be meeting, mating and making children with whom." And then the group catches sight on a huge crowd of people who are queuing up to add still more factors that have a bearing on who will be meeting, mating and making children with whom.

The takeaway from this story is that there is a myriad of factors that affect who comes into existence, and who does not. The impact of the high emissions policy, as one single factor, is miniscule. It is therefore misleading to say that the high emissions policy will be *causal* in determining who comes into existence.

Let us once again look at Gosseries' example, which suggests that the father might justify his environmentally harmful driving habits to his daughter by using the non-identity argument. But must the daughter now really fall silent? She could answer as follows:

"Are you really trying to tell me that this behaviour of yours, which is harmful to succeeding generations, is responsible for the fact that I was conceived on 14 March 1996 and 8:11:43pm? It's true that you are always driving a car and that this habit may have been the reason that you were at home half an hour earlier than you would have been if you'd taken your bike. But on the day of my conception, if you were not caught in a traffic jam on the way home, and if you hadn't petted the cat on the way in, you would also have come through the door a few minutes earlier. And if you hadn't gone to the refrigerator just before having sex with my mother, the point in time of my conception would also have been different. And anyway, the only reason you had had to work so long since the beginning of 1996 was that the government had just passed a law lifting the restrictions on overtime work, which they had to do to meet the challenge of Chinese competition. All of these factors – and a billion other ones – are more responsible than you driving your car for the fact that I was conceived at exactly 8:11:43pm. So your car journey is not *the* reason and thus no excuse for the fact that you're polluting the atmosphere."[19]

The logic that underlies the C-NIP, both the collective and the individual action version, implies that good or bad results are literally *caused* by certain policies or acts. Parfit uses the following picture: "As we have seen, children conceived at different times would in fact be different children. So the proportion of those later born who would owe their existence to our choice would, like ripples in a pool, steadily grow."[20] The ripple analogy is very instructive, but not in the sense of how Parfit used it in his climate ethics article. We must rather think of a pool or pond into which, at the same moment, a great number of

[19] Tremmel 2015, 137.
[20] Parfit 2010, 113.

stones are thrown. Think of the ripples that will be generated by this. They will superimpose each other and create a picture that looks very non-linear, or chaotic, to the observer. Now refine this analogy and imagine that the stones are of different sizes, from small pebbles to rocks. A great number of these are thrown simultaneously into the water. Now think of the picture of the ripples this will cause. The stone that symbolized the high emissions policy will make a ripple but all the other stones will also make ripples, sometimes much bigger ripples. Therefore the claim that all or almost all climate-related actions of members of the currently living generation *determine* not only what the conditions of life of future people will be, but also which people will exist in the first place is misleading.

Note that I do not say that the so-called snowball effect of each ripple in the example above is minimal. The snowball effect relates the accumulative effects of each policy over time. Indisputably, the overlap between the members of generation A who actually will come into existence as a result of a high emissions policy and members of generation B who would come into being if a low emissions policy were implemented would initially be very high, and over the course of time become smaller. Assume for the sake of the argument that as a result of the initial and accumulated effects due to a high emissions policy, a quarter of the population change their procreation pattern. In a population with 80 million people, after 180 years the population would consist entirely of different individuals (assuming generations of 30 years). This can be calculated mathematically as follows:

Given a population of 80 million, 60 million are initially unaffected. In the first round of marriages, each of those unaffected has a chance of 6/8 to meet a partner who is likewise unaffected. After the first generation, there will therefore be 6/8 x 60 million unaffected people. Of the entire population V, the initial number of unaffected people (the 0th generation) is B0; then, after one generation, the number of still unaffected people will be $B_1 = (B_0/V) \times B_0 = (B_0)^2/V$. Since the second round of marriages will involve the same conditions, after two generations, the number of remaining unaffected people will be $B_2 = (B_1/V) \times B_1 = (B_0)^4/V^3$. After the n-th generation, it will be $B_n = (B_0)^{(2n)} / [V^{(2n-1)}]$. Solving that for a (the number of generations) yields $n = \ln [\ln(B_n/V) / \ln(B_0/V)] / \ln 2$. In this example:

n = ln [ln(1/80000000) / 1n(60000000/80000000)] / ln 2; this yields n = 5.983124.

Since one generation corresponds to 30 years, there would, after 5.983124 x 30 years (i.e., 179.49 years) be only one remaining unaffected person.

The point is that there is a snowball effect *for each policy*, not for just one of them. So we have to come back to the *relative* weight of each factor in explaining a certain outcome. The concept of (in)significance, as it is routinely applied in statistics, is instructive here. In inferential statistics, one calls factors statistically "insignificant" if they are considered not having enough explanatory power. Statistical insignificance does not mean, however, that the effect being tested for does not exist. What is an appropriate insignificance level, is the subject of a convention. Quite often, a probability of one in twenty ($\alpha = 0.05$) is chosen, although, depending on context, this is by no means the only appropriate value.[21]

[21] Wasserstein and Lazar 2016.

Note, however, that levels of (in)significance of the C-NIP are so low that they are virtually zero in the real-world context. To illustrate this, let us have a closer look at the sequence of events and acts that may have happened before the conception of child A in time t_0, and let's assume the existence of child A would have been thrown "off track" if only one of these slightest changes in this sequence had happened. All antecedent events that were decisive for the birth of child A are the "population" in the parlance of statisticians. Here you go: Three months before the conception, the parents of A had married. Two years before, they had met in a disco for the first time. Before entering this disco that very night, each of the prospective parents considered him/herself to be single, but wanted to enter into a relationship. In the club were 175 men and 243 women who were potential partners for each of the (later) parents of child A. Twenty-five years before, the US president had announced that he would leave the Paris climate agreement which led to a high emissions policy in the US during the following years. On the same day, all the other heads of state and government and all the heads of major corporations made climate-relevant decisions, too.

Some 2000 years before, a Roman legionary who had the best chances to become emperor was killed by a falling roof tile when he marched through the streets of Rome. One day before, a bird had picked this particular roof tile loose. For the sake of argument, we assume that all these acts and events are "causal" for the conception of child A. The takeaway from this story: If the number of factors that influence who will be meeting, mating and making children with whom converges towards infinity, the influence of each particular factor converges towards zero. The more indirect the acts and events are related to the actual act of birth, the weaker the potency of the NIP.

It seems to be helpful to distinguish at least two different types of non-identity cases that have distinct logical features:

1) Cases in which the genetic identity of the parents is *not* open to the course of events that are antecedent to the conception (and as a result of this limitation the genetic identity of the conceived child). The genetic identity of the child must be the result of the shuffle of the gametes of these two persons. For instance, Parfit's classical "14-year-old girl"[22] falls into this category; likewise all reproductive services that gynecologists or obstetricians provide for a couple which wishes to have a child and needs assistance.

2) Cases in which the genetic identity of the parents is open to the course of events that are antecedent to the conception. Parfit's "risky climate policy" case falls into this category, likewise all cases of redress for historical injustice-cases.

The second class encompasses the C-NIP and the "insignificant-causal-factors" argument has even more bite here. The thicker the potpourri of antecedent events, the more problematic it is to call one single factor the "deciding factor". At any rate, the significance level of a *single* antecedent event, say the car ride in Gosseries' example, is extremely low in any of the examples. Even in cases in which the genetic identity is not open to variations, in the real world there is still a very high number of possible

[22] Parfit 1987, 358.

combinations of egg and sperm cells because every second, a man's genetic endowment, consisting of some 200 million gametes, is constituted anew.

Recall that Roberts's definition of the NIP (see above) speaks of duties "in respect of people who, by our own acts, are *caused* [my emphasis] both to exist and to have existences that are, though worth having, unavoidably flawed [...]". Proponents of the C-NIP construct a *mono*-causal relationship, thereby ignoring the multi-causal context. This is misleading. When we think about what *caused* something, we might hold variable A responsible for 50% of the effect, variable B for 30% and variable C for 19%. We know in the back of our mind that there is an indefinable number of additional variables that aggregate up to the last 1%, but we normally don't understand causality in that way. When a judge lists the causes of a car accident in his summing up, he will say that a slight drunkenness was 80% responsible, and a dispute in the car with the co-driver was to blame for the rest. He will not say: "Another cause is that the road was constructed in this area." But this statement would be logically correct, for if a road-building company had not built this road, say, just before the accident has happened, the accident would not have happened on this specific road. But not every causal factor is a significant causal factor. An inadequate concept of causality is implied if the C-NIP is couched in terms like "caused", "because of" or "due to".

4. Understanding the C-NIP as a thought experiment

But is the C-NIP a thought experiment, after all? Let's see if it fulfils the aforementioned criteria:

1) Counterfactuality? Yes, ignoring statistical insignificance and treating a probabilistic relationship as a deterministic one is fact-insensitive.

2) From a context? This surely is the case. The broader context of the C-NIP is future ethics, which deal with questions such as "Do we have obligations to posterity?" This is a standard (and crucial) question for all full-fledged theories of intergenerational justice.

3) Cognizant of details? Yes, for instance Parfit is cognizant in speaking of a policy (instead of individual behaviour) to make the non-identity argument as strong as possible. Roberts acknowledges: "The 'depletion example' is a thicket of details."[23]

4) Briefness? Yes, the C-NIP in the aforementioned formulations (e.g. Derek Parfit's or Clark Wolf's) is succinct.

As a thought experiment, the C-NIP could be formulated as follows:

"Imagine that a certain climate policy *would* determine who will be born in the future" (forward-looking version)

and

"Imagine that a certain climate policy in the past *would* have determined who is currently in existence." (backward-looking version).[24]

[23] Roberts (1998), 299.

Lest it be misunderstood: This is a fascinating, thrilling, compelling and riveting thought experiment.[25] But it to call it a thought experiment gives it a completely different methodological status than a hypothesis or theory (which could be true, after all). Recalling Box's and Draper' famous sentence about models, cited above, does Parfit state somewhere that the NIP is, in fact, an abstraction from reality and thus not a counterargument against a low emissions policy? Quite the opposite: Parfit's statements make clear that he has absolutely no doubts regarding the validity of the non-identity problem in the context of emission policies: "We may remember a time when we were concerned about effects on future generations, but had overlooked my point about personal identity. We may have thought that a policy like Depletion would be against the interest of future people." [26]

The belief that the C-NIP (and non-identity problems of the same structure) are serious threats for theories of intergenerational justice and our moral obligations towards posterity formulated by them is still mainstream in contemporary philosophy. Mulgan noted in 2002 that the non-identity challenge is to this day "plaguing present Western theories of generational justice"[27]. By the same token, Wolf (2009) states: "The non-identity problem calls into question whether distant future persons might claim rights against members of the present generation. [...] For this reason, some theorists have more or less abandoned the idea of intergenerational justice altogether."[28] In 2016, Gheaus still calls the NIP "the most difficult obstacle for theories of intergenerational justice".[29] And in his influential entry on "Intergenerational Justice" in the *Stanford Encyclopedia of Philosophy*, Lukas Meyer (2015) summarizes: "Derek Parfit's work has defined the problems of how we can and should relate to future people."[30]

Nowadays, one seeks in vain in survey articles and philosophical reference works statements that qualify the C-NIP, which could take for instance the form: "Plausibly, the availability of contraceptives has a much greater impact on who will be born in the future than climate policies." Or: "Possibly, climate policies have hardly any impact on who will be born in the future." Instead of outlining arguments about insignificance, Meyer's encyclopaedia entry gives the following account of reactions to the NIP: "We can distinguish four main responses to the 'Non-Identity-Problem' so understood (compare Boonin 2008, 134 ff; Page 2008; Heyd 2009b; Roberts 2015; Wrigley 2012, 178): First, some philosophers hold the view that future people whose existence depends upon currently living people's actions cannot have rights vis-

[24] Page frames this in terms of global climate change as follows (2007, 137): "For, if it is nonsensical to compensate present persons for ancient wrongs committed to their ancestors, it is likewise nonsensical to insist that countries that contributed the vast majority of greenhouse emissions prior to 1990, have more than a modest harm-based duty to pay for the costly measures needed to reduce emissions. This because the greenhouse emissions that contributed to the climate problem originated in acts and policies that also modified the size and composition of subsequent generations of all countries. If we find this implausible, it is worth asking whether a world without carbon industries would have supported a rise in the world population from 2.5 billion in 1950 to over 6.4 billion people in 2005."

[25] I can tell from my own experience that it is riveting as I planned to spend much less time studying the NIP than I in fact ended up investing in it.

[26] See Parfit 2010, 115. Or, with almost the same wording, Parfit 1987, 367.

[27] Mulgan 2002, 8.

[28] Wolf 2009, 96.

[29] Gheaus 2016, 491.

[30] Meyer 2015.

à-vis the latter people's actions (see Schwartz 1978; cf. Adams 1979; Kavka 1982; Parfit 1984, part iv; Boonin 2008; Roberts 2009). Second, others argue that currently living people can violate the rights of future people even if the former cannot harm the latter (see Kumar 2003). If so, future people cannot have welfare rights vis-à-vis currently living people insofar as violating welfare rights implies setting back or harming the interests of the right holders. Third, we can attempt to limit the practical significance of the non-identity-problem by limiting the relevant actions to those that are not only likely but indeed necessary conditions of the existence of the concerned person.[31] Finally, some have sought to circumvent the non-identity problem by suggesting an alternative notion of harm that is unaffected by the non-identity-problem, the so-called 'Threshold Conception of Harm' (Hanser 1990, 2009; McMahan 1998; Shiffrin 1999; Meyer 2003, 2009; Harman 2004, 2009; Rivera-López 2009)."[32]

Roberts lists in her encyclopaedia entry on the non-identity problem (which refers to all types of the NIP, not just the C-NIP) five proposed solutions to the non-identity problem: 1) a seemingly wrong act is not in fact wrong; 2) an act is wrong by virtue of impersonal effects; 3) an act is *bad* for a future person without making that person *worse off;* 4) the non-identity problem is seen as a non-identity fallacy; and 5) an act is wrong in virtue of the agent's reasons, attitudes and intentions.

The fourth approach is her own one that she spelled out in *The Non-identity Fallacy: Harm, Probability and Another Look at Parfit's Depletion Example* (2007). In fact, in this article her line of reasoning seems to resemble mine (even if she couches her argument in different terms). Roberts acknowledges that "the non-identity problem is really a collection of problems that have different logical features." [33] She distinguishes between three types: "won't-do-better problems", "can't-do-better problems" and "can't expect-better" problems. And Roberts concludes her article as follows:

"The can't-expect-better problem is thus best understood as a probability problem, and indeed as a fallacy. As such, it raises no serious questions about how it is that we can harm people whom we by the same act cause to exist. If my analysis is correct, then the can't-expect-better problem can take its place as another in a long line of riveting probability problems that we can in the end mercifully set aside – a result that would in no way diminish its significance in helping us understand the structure of moral theory but that may leave us free to retain the person-based intuition as a basic part of that structure."[34]

The counterargument against the NIP, as Roberts repeats 2015, "is limited to the large class of non-identity cases that reason from (a) had the act under scrutiny not been performed, the person who exists and suffers as an effect of that act *very probably* would never have existed at all and (b) that existence is worth having to the conclusion (c) that act does not make things worse for, or harm, that person. But that large class of cases also happens to be a very significant class of cases. It includes Kavka's slave child and pleasure pill cases, Parfit's depletion and risky policy cases, Broome's climate change case and cases involving historical injustices."[35]

[31] [Here, Meyer refers to Roberts 1998 in an endnote.]
[32] The fourth response, a new understanding of the term ‚harm', is Meyers own attempt to circumvent the NIP.
[33] Roberts 2007, 271.
[34] Roberts 2007, 311.
[35] Roberts 2015.

It would beyond the scope of this article to introduce to the reader this quite diverse bunch of "can't-expect-better" problems (as Roberts calls them) and discuss if they are really similar in structure and if my "insignificant-causal-factors" rejoinder argument applies to all of them; but I second Roberts when she focuses (like Kavka before her)[36] on the "precariousness" of any person coming into existence, and on the importance of considerations about (im)probability. It is surprising that she does not repeat her worries more prominently in her free-of-charge encyclopaedia entry (which is presumably more often read than her fee-based article). At any rate, the mainstream and those scholars that specifically address the NIP in the context of climate change (e.g. Parfit, Broome or Meyer, maybe save Roberts) depict it as a serious problem that might be more or less successfully skirted but is definitively "more" than just a thought experiment. Page takes great effort with counterstrategies against the "non-identity theorists",[37] as he calls them. He first describes the problem: "This line of reasoning, which has been called the *non-identity problem*, calls into question many, though by no means *all*, of our duties to future generations. It leaves intact, for example, duties to those descendants whose identities are beyond our influence, as well as those whose lives will not be worth living as a result of our behaviour [...]. It also leaves intact objections to Kyoto Lite [the high emissions climate policy] grounded in identity-independent goals such as utility maximisation or the perfection of the human species. Finally, it leaves intact 'deontological' objections that explain the wrong-doing in such cases to the intentions and state of mind of the policy-choosers, not the outcomes of the various policy choices."[38] But also Page believes that, despite such limitations, the non-identity argument presents a profound challenge for anyone who theorizes that ravaging the climate is ethically wrong: "The non-identity problem, however, shows us that very few future persons will be harmed by the adoption of Kyoto Lite since, if a different approach to climate change had been taken, a different set of persons would have come into existence."[39] As possible solutions Page, cites the notions of specific interests (Woodward[40]), subjunctive harm (Meyer[41]) and collective interests (Page's own approach[42]).

But if the C-NIP had indeed the methodological status of a thought experiment, there would be no need to circumvent or to "solve" (cf. the title of Boonin's 2008 paper) it. Thought experiments do not have to be "solved".

It is important that the community of philosophical scholars is clear about the status of the C-NIP. First, it should be recognized within the philosophical community that the C-NIP is a thought experiment. The way the C-NIP is currently presented in key philosophical texts (such as the entries of the *Stanford Encyclopedia of Philosophy*) may mislead climate policy decision-makers. This is the point I will now turn to.

[36] Kavka 1982, 93.
[37] Page 2008, 10.
[38] Page 2007, 134.
[39] Page 2007, 135.
[40] Woodward 1986.
[41] Meyer 2004.
[42] Page 2007, 153-158; Page 2008.

5. Communicating the non-identity problem to climate policy-makers

More than some other fields of ethics, climate ethics is related to pressing real-world problems. It is no exaggeration to state that overcoming dangerous climate change may even be crucial for mankind's long-term wellbeing.[43] With regard to the question of "who owes what to whom" in climate ethics, politicians and decision-makers are in need of reliable ethical theories when negotiating climate targets and compensation payments. Climate ethicists have, to a certain degree, a responsibility to deliver theories that are beneficial for real-world scenarios.[44] At least they have a clear responsibility to be precise about the methodological status of the problems that they discuss. This is even more the case given that philosophers play an increasingly important role in the Intergovernmental Panel on Climate Change (IPCC). The IPCC was set up at the request of member governments of the main international treaty on climate change, the United Nations Framework Convention on Climate Change (UNFCCC), which was drawn up in 1992 at the Earth Summit in Rio. According to its principles, "the role of the IPCC is to assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation."[45]

The IPCC reports are a major source of information for the UNFCCC signatory nations. For a long time, scholars from normative disciplines (such as moral and political philosophers and theorists) were not part of the IPCC. This has changed recently when the philosophers Lukas Meyer, John Broome and Marc Fleurbaey became members.

Is the C-NIP a helpful tool for policy-makers when they strive for conclusions? Parfit himself expresses some doubts about this when he writes: "I shall therefore end with a practical question. When we are discussing social policies, should we ignore the point about personal identity? Should we allow ourselves to say that a choice like that of the Risky Policy or of Depletion might be against the interests of people in the further future? This is not true. Should we pretend that it is? Should we let other people go on thinking that it is? If you share my intuitions, this seems permissible. We can then use such claims as a convenient form of shorthand. Though the claims are false, we believe that this makes no moral difference. So the claims are not seriously misleading."[46]

But falsehood is falsehood and if the claim that a risky climate policy is not harmful for (distant) future people were really true (I have argued here that this claim is, in fact, false), this would indeed present a problem for all theories that postulate that we have climate-related duties towards (distant) future people.. Imagine if politicians and practitioners had taken Parfit's claim seriously in the global climate

[43] For estimations of the physical ills that will come with human-induced climate change, see e.g. World Bank 2013.
[44] Cf. Roberts (2007, 271): "If we do end up with theories that are too complex, vague, nuanced and indefinite to be assessed or applied, or are so narrow that our acceptance of them must be tentative pending an understanding of how they fit into a broader theory, there will be practical implications. For example, we would surely need to suspend hope that moral theory might have some advice to offer courts as they struggle to decide hard 'future person' cases in the law."
[45] IPCC 2013.
[46] Parfit 2010, 118.

negotiations[47] of the recent past, or imagine if they took it seriously in the years to come. If climate policy decision-makers really believed that a high emissions policy will not harm the people who live in the future, they might be less inclined to agree on curbing emissions – to the detriment of future generations. If they take the NIP "for real", they will be hindered in their judgement of what is the fairest and most reasonable distribution of emissions between all parties affected, especially between present and future people.[48]

6. Conclusion

It was argued that the climate non-identity problem, in contrast to how it is depicted in prominent philosophical texts, has the status of a thought experiment. By treating it as a "real world problem", it is given more potency and maybe more attention than it deserves. "So what? What's wrong with that?" one might ask. "Let philosophers dwell on this fascinating problem in their ivory towers." But philosophers have already left their ivory towers. It is thus high time for the philosophical community to get a new understanding of the Parfitian claim that a risky climate policy is not harmful for (distant) future people. If the protagonists of the C-NIP spread the message that we might intuitively think that we have climate-related obligations to future generations, but upon philosophical scrutiny, this should be ignored because of the non-identity problem, policy-makers (governmental and other) would be seriously mislead.

Acknowledgments

I authored a piece about the NIP in 2014 ("The Non-Identity Problem: An Irrefutable Argument Against Representation of Future Generations?" In: *Theories of Sustainable Development*, edited by J. Enders and M. Remig, London: Routledge, pp. 126-144). At that time, I lacked the methodological background to link the NIP to thought experiments. In retrospect, I find my earlier text to be preliminary and hope that the answers given in this present work are more convincing, or at least less preliminary. I am indebted to a great number of students and colleagues for insightful comments or suggestions over the last four years. I am also very grateful to Antony Mason who reviewed and smoothed my English. Lastly, my many thanks to the editor of this article at Routledge for their close attention to detail, which I much appreciate.

[47] United Nations Framework Convention on Climate Change, Conference of the Parties, in short "COP". In the COP 21 in Paris 2015, a global accord was agreed.

[48] See Tremmel 2013; Tremmel and Robinson 2014 (with further references) for a synthesis of climate ethics theories.

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