

KILLING DISCARDED EMBRYOS AND THE NOTHING-IS-LOST PRINCIPLE

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Abstract

A widely held view holds that it is permissible to conduct destructive research on embryos discarded following fertility treatment, but not on embryos especially created for research. One argument in support of this view appeals to the nothing-is-lost principle. It holds that because discarded embryos will die soon in any case, and something good is expected to come out of using them for research, it is presumptively permissible to do so. It is then claimed that no equivalent justification can be adduced in support of destructive research on embryos especially created for research. I argue that, on a standard formulation of the nothing-is-lost principle, this argument fails. I consider whether other plausible variants of the principle render the argument sound and argue that they do not.

1. The discarded-created distinction

Human embryo research has long been recognised as crucial to advancements in many areas of medicine, ranging from reproductive medicine to the treatment of childhood cancers. More recently, the possibility of generating and manipulating embryonic stem cells has opened up a new avenue of biomedical research. It may result in the development of

therapies for a wide range of currently incurable diseases and conditions, as well as novel techniques for drug screening and toxicity testing.

Embryo research, including embryonic stem cell research, involves killing early embryos. This is problematic for those who regard the early embryo as having either the moral status of a person or a lower moral status that is nevertheless significant. Those who accord a significant moral status to the embryo are faced with an ethical dilemma: either one supports beneficial embryo research and accepts that entities of significant moral status will be killed for that, *or* one opposes beneficial embryo research and accepts that its potential benefits will be foregone.

Since people are generally reluctant to give up on their deeply held views on the moral status of the embryo, many have looked for other ways to escape this dilemma. A popular strategy has been to adopt an ethical position intermediate between the dominant opposing views on the permissibility of beneficial embryo research. The aim has been to formulate a position that accepts some embryo research but is nevertheless compatible with the view that the embryo has a significant moral status. One such middle-ground position that has been widely defended and that has served as an ethical basis for stem cell policy in many western countries, including the US and most European countries, is

The discarded-created distinction. It is presumptively permissible to conduct destructive research on embryos discarded following fertility treatments such as *in vitro fertilization* (IVF). However, it is impermissible to conduct destructive research on embryos created solely for the purpose of research or therapy.

The discarded-created distinction draws a moral line between two types of embryo research based on the origin of the embryos.

The first type of embryo research is that on embryos left over after IVF treatment and donated for research.¹ I will refer to these embryos as *discarded embryos*. The second type of embryo research uses embryos created solely for the purpose of research. I will refer to these embryos as *research embryos*. Experiments with research embryos could help us to achieve important research and therapeutic goals that would be much more difficult or impossible to achieve with discarded embryos.² For example, research into egg maturation and freezing requires that eggs are fertilized *in vitro* and the resulting embryos monitored in the laboratory. This allows an assessment of the eggs' ability to produce viable embryos. Research embryos would also be extremely useful for stem cell research. Especially the use of embryos created via somatic cell nuclear transfer or cloning would have several advantages over the use of discarded embryos as it would allow the production of stem cells that are genetically identical to the patient.

The discarded-created distinction maintains that research on discarded embryos is presumptively permissible, but research on research embryos is not. The obvious question that arises is how it can be permissible to conduct destructive research on discarded embryos but not on research embryos given that both types of embryo have the same moral status.³ Why is killing research embryos worse from a moral point of view than killing discarded embryos, and to such an extent that the latter is presumptively ethically permissible but the former is not? This question is important since restricting embryo research to discarded embryos rules out important research and therapeutic applications that could benefit a large number of people.

2. The nothing-is-lost principle

One popular and intuitively appealing argument in defence of the discarded-created distinction holds that destructive research on discarded embryos is presumptively permissible since these embryos are never going to be used for reproductive purposes even if not used in research.⁴ The thought is that killing discarded embryos does not result in any loss that was not going to occur in any case. Gene Outka, for example, writes that

...embryos in appreciable numbers have now been discarded or frozen in perpetuity. They will die, unimplanted, in any case. Nothing more will be lost by their becoming subjects of research.⁵

It is then argued that because nothing is lost, and significant goods are expected to come out of research with discarded embryos, it is presumptively permissible to conduct such research, even if embryos have a significant moral status and it is therefore normally impermissible to conduct destructive research on them. It is further argued that an equivalent argument cannot justify destructive research on research embryos.⁶

In a similar vein, George Annas and collaborators write that

Although the destruction of a human embryo is lamentable, there is a considerable moral difference between creating and destroying embryos solely to obtain stem cells and destroying unwanted human embryos that will never be used for reproductive purposes, to achieve benefit for those with serious diseases and disorders. The former involves the creation solely for the purpose of destruction whereas the latter involves salvaging something of value from a situation from which nothing else can be gained.⁷

The principle implicitly appealed to in these arguments could be formulated as follows

The nothing-is-lost principle (NIL_p). It is presumptively permissible to intentionally cause a certain loss that it would normally be impermissible to intentionally cause if (1) the loss is going to occur in any case, and (2) something good is expected to come out of causing the loss.

Note that the application of NIL_p alone can only justify a *qualified* conclusion: that it is *presumptively* permissible to kill discarded embryos. For the killing of discarded embryos to be permissible, NIL_p should be correct, the conditions specified in NIL_p should be met and there should be nothing that defeats the presumption that killing discarded embryos is permissible. (One consideration that could defeat this presumption is that no parental consent was obtained to kill the embryo.)

In what follows, I do not focus on possible defeaters. Instead, I investigate whether NIL_p *presumptively* justifies killing discarded embryos. If not, the principle cannot support the discarded-created distinction.

I assume, for the sake of argument, that the embryo has a significant moral status, that is, either the moral status of a person or a lower moral status that is nevertheless high enough so that it is normally impermissible to kill embryos for research. The view that the embryo has significant moral status is firmly held and widespread.

3. The nothing-is-lost principle and killing persons

Suppose you like furniture made of tropical wood but agree that it is unethical to fell endangered trees to construct such furniture. One day you discover that an endangered tropical tree in your garden has a terminal disease. After careful consideration, you fell the tree to make a table out of it. Intuitively it seems correct that NIL_p could justify your action:

though it is perhaps normally impermissible to fell endangered trees to construct furniture, the tree in your garden was going to die soon in any case and something good – a beautiful table – comes out of your felling it.

But can NILp plausibly be appealed to if the loss that is going to occur in any case is the life of a being of significant moral status, perhaps that of a person?⁸ If not, it cannot justify killing discarded embryos (on our assumption that these embryos have a significant moral status).

Consider this slightly modified version of Bernard Williams' famous *Jim and the Indians* case.⁹

Tim and the Indians. Tim arrives in a South American town where twenty Indians are just about to be killed by a group of soldiers under the command of an army captain. The captain makes Tim an offer: if Tim kills one Indian, Mika, the others will be let off. If Tim refuses the offer, the captain will do what he would have done had Tim not arrived: have the soldiers kill all twenty Indians, including Mika. Tim wonders whether he could get hold of the gun and kill the captain and the soldiers, but it is clear that this is not going to work. Attempting this would result in all the Indians and himself being killed.

It is somewhat plausible that it may be permissible for Tim to kill Mika because (1) the loss is going to occur in any case (Mika is going to die regardless) and (2) something good is expected to come out of Tim causing the loss (the other Indians will be saved). So it is somewhat plausible that NILp could justify Tim killing Mika.¹⁰ (Note that Williams did not use *Jim and the Indians* to illustrate NILp. I borrow the case because a slightly modified version of it shows that NILp could plausibly justify the killing of a person.)

4. The nothing-is-lost principle and killing discarded embryos

Since it is somewhat plausible that NILp could justify killing a person, it is not yet ruled out that it could justify killing a discarded embryo. For the latter to be presumptively permissible, it will have to be true that (1) the loss is going to occur in any case, and (2) something good is expected to come out of causing the loss.

Defenders of the discarded-created distinction have argued that (1) and (2) are true. For example, according to Gene Outka, who defends this distinction in the context of embryonic stem cell research,

...it is correct to view embryos in reproductive clinics who are bound either to be discarded or frozen in perpetuity as innocent lives who will die in any case, and those third parties with Alzheimer's, Parkinson's, and other diseases as other innocent lives who may be saved, or at least helped, by virtue of research on such embryos.¹¹

That others will expectedly be saved, or helped, thanks to embryo research with discarded embryos is not all that controversial. However, the first claim – that discarded embryos are going to die soon in any case – is far more controversial and has been challenged. I will thus focus on that claim in the next section.

4.1. Brock's stronger and weaker versions of the nothing-is-lost principle

Will embryos discarded following IVF die soon in any case? According to Dan Brock the answer depends on how one understands 'in any case'.¹² Brock distinguishes a stronger and a weaker version of NILp. The stronger version appeals to the fact that the loss is going to occur *given what anyone could do*. In other words, *whatever anyone does*, the loss is going to occur. Brock rightly points out that the stronger version of NILp does not apply to discarded embryos as these embryos are frozen but still alive. Instead of being used for research, these

embryos could remain frozen, or be given out for adoption and carried to term. It is thus not the case that these embryos are going to die given what anyone could do. Note that the stronger version of NILp does not apply to *Tim and the Indians* either. It is not the case that Mika is going to die given what anyone could do. The captain could, after all, modify his plan and instruct the soldiers not to kill any Indians.

The weaker version of NILp, as formulated by Brock, looks at what will happen given what others will *in fact* do (implicitly assuming that the agent in question does nothing). Suppose that a researcher has been offered a frozen discarded embryo and is deliberating about whether to perform destructive research on it. Even though it is true that this embryo *could* be used for reproductive purposes if the researcher does not perform the research, it will not *in fact* be used for such purposes. If not used for research, it will instead be thawed and left to perish by the IVF clinic. It could be argued, then, that if the discarded embryo will not *in fact* be kept alive, nothing is lost by killing it in research. Brock concludes that, although the weaker version of NILp *does* apply to the killing of discarded embryos, it should not be accepted by those who accord a significant moral status to the embryo: accepting the killing of a discarded embryo on this basis would be like accepting that a researcher who stumbles across an abandoned baby may use this baby in lethal medical research on the basis that it would have died anyway. Brock rightly argues that the correct response in this situation is to care for the baby. He further concludes that

those who rightly reject this weaker version of the nothing is lost principle will argue that likewise, the alternative to destroying spare embryos in hESC [human embryonic stem cell] research is to keep them alive and frozen or to give them to others for implantation.¹³

The weaker version of NILp, as formulated by Brock, is problematic indeed. The reason is that it looks at what others will do while assuming that the person whose particular action is

under moral consideration (henceforth ‘the agent’) *does nothing*, that is, assuming that she ‘merely’ abstains from causing the loss (for example, assuming that she merely abstains from killing the abandoned baby or the discarded embryo). But why does Brock understand the weaker version of NILp in a way that focuses only on *others*? In the stronger version of NILp, Brock includes *everyone’s* future actions. The question there was whether the embryo could be saved by *anyone*, whether by the agent or by someone else. But Brock’s formulation of the weaker version of NILp ignores positive steps the agent could take to prevent the loss and focuses only on others. I believe that any plausible version of NILp should *also* take into account the array of future actions open to the agent. Surely, if the agent could prevent the loss, she should (as Brock points out). If she does not prevent the loss, she contributes to the fact that something will be lost that would otherwise not have been lost. However, there may be a situation where even though others could prevent the loss, they in fact will not, and the agent cannot prevent the loss, or it is reasonable to assume she cannot. This is the case in *Tim and the Indians*: the captain and his soldiers could prevent Mika’s death, but they will not. On the other hand, Tim cannot prevent the loss (recall that Tim wonders whether he could get hold of a gun but realises that attempting this would result in all the Indians and himself being killed).

4.2. The mixed version of the nothing-is-lost principle

Another plausible version of the nothing-is-lost principle, which could perhaps justify killing a discarded embryo is what I call the ‘mixed version’. The mixed version combines the stronger and weaker versions: it looks at what others will *in fact* do and at what the agent *could* do.

The mixed version of the nothing-is-lost principle (mixed NILp). It is presumptively permissible to intentionally cause a loss that it would normally be impermissible to intentionally cause if (1) the loss is going to occur given what others will *in fact* do and regardless of what the agent does (from among the reasonable options), and (2) something good is expected to come out of causing the loss.

I believe that what is crucial to any version of NILp is that the expected loss is *a given* relative to the agent: a fixed baseline from which it is determined that no further loss is going to occur if the agent performs the action under moral consideration. Different versions of NILp can then be understood as specifying different conditions for taking a loss as a given relative to the agent. For example, in the stronger version, the loss can be taken as a given if it will occur whatever anyone does. In the mixed version, the loss can be taken as a given if it will occur whatever the agent does, where the actual actions of others are themselves taken as a given.

Applied to embryo research, mixed NILp implies that it is presumptively permissible for a researcher to kill an embryo if (1) the embryo is going to die soon given what others will in fact do and regardless of what the researcher¹⁴ does (from among the reasonable options¹⁵), and (2) something good is expected to come out of killing the embryo.

That a discarded embryo is going to die soon given what others will *in fact* do and assuming that the researcher in question does nothing is rather uncontroversial. But will the embryo die regardless of what the researcher does, from among reasonable options? Not obviously. As Brock notes, the researcher may have the option of keeping the embryo alive and frozen or of donating the embryo to a couple who will use it for reproductive purposes.¹⁶ It might indeed be thought that taking one or the other of these

courses of action would prevent the loss from occurring. The first option is easier than the latter, but does it prevent the relevant loss?

4.3. What is the loss?

Whether the loss is going to occur in any case not only depends on the meaning of ‘in any case’ – the focus of Brock’s analysis - but also on what exactly the relevant loss is that is going to occur in any case. So far, I have assumed that it is the life of a being of significant moral status: that of the particular embryo the researcher considers using for research. If this is indeed the loss, then keeping the embryo frozen prevents it, as the embryo remains alive.

However, perhaps the relevant loss is not the loss of the life of a being of significant moral status, but the loss of a *valuable* life of a being of significant moral status. If that is indeed the loss then one does not necessarily prevent it by keeping the embryo in a freezer: one does not thereby enable the embryo to realise a life of value. Indeed, it might plausibly be thought that the loss of a valuable life is the *only* morally significant loss at stake here. The loss of life *per se* is not morally significant. In that case, retaining an embryo in a freezer (rather than destroying it in research) achieves nothing of moral importance.

Thus, it may be that, to prevent the loss, the researcher must do more than merely preserve the embryo in a freezer. Plausibly, she must ensure that the embryo is used for reproductive purposes, for example, by giving it to others for implantation. Is it reasonable to expect a researcher to do this? Defenders of the discarded-created distinction must deny this.¹⁷ They typically refer to the current regulations and realities of IVF practices in most countries. In the US alone about 600,000 embryos created in the

context of fertility treatments are stored in nitrogen freezers. Many of these embryos, if no longer needed for reproductive purposes by their conceivers, will be donated to scientific research. Once an embryo has been donated to research, it would be illegal for the researcher to try to rescue it by giving it to an infertile couple. This is because the conceivers of the embryo only gave their consent for research use and not for reproductive use of their embryo. The fact that it would be illegal for the researcher to rescue the embryo in this way suggests that it might not be a reasonable option for her to rescue the embryo.

If the researcher cannot reasonably ensure the embryo is used for reproductive purposes, then it seems that mixed NILp could justify killing a discarded embryo: it is going to die soon given what others will do and regardless of what the researcher does among the reasonable options. NILp would then imply that research on discarded embryos is presumptively permissible.

However, if this is true then mixed NILp could, at first sight, also justify killing a *research* embryo. If a researcher who considers using a research embryo suddenly decided against doing so the embryo would most likely be used by another researcher or it would be left to perish. It would die given what others will do (assuming the researcher does nothing). Moreover, it would die regardless of what the researcher does from among the reasonable options. After all, if it is true that a researcher cannot reasonably ensure a *discarded* embryo is used for reproductive purposes, then, for the same reasons, it must not be a reasonable option for a researcher to ensure a *research* embryo is used for reproductive purposes.¹⁸

So far, I have established that, contrary to what Brock has argued, it is not yet entirely ruled out that a plausible version of NILp – the mixed version – could justify conducting

destructive research on discarded embryos. However, I have also pointed out that, if that is true, it is also not yet ruled out that mixed NILp could justify destructive research on *research* embryos. So how, then, could we back up the claim that NILp can justify killing discarded embryos but not research embryos? What makes the crucial difference?

5. Why the nothing-is-lost principle cannot justify killing a research embryo

It is often said that NILp cannot justify killing research embryos “since these embryos need not have been created for research in the first place”.¹⁹ But this cannot be the whole story. After all, one could simply reply that surplus IVF embryos that are going to die in any case should also not have been created in the first place. Moreover, once research embryos have been created, for example by researchers in a country with permissive stem cell policies, the question remains whether it is permissible for a researcher to make use of these embryos, or the products thereof.

Gene Outka gives a slightly fuller explanation for why he thinks NILp can justify killing discarded embryos but not research embryos. According to Outka this

accords with the timbre of nothing is lost in that [in the case of discarded embryos] we encounter circumstances we did not initiate and that we wish were otherwise. That we contemplate doing repellent things that we would not do for their own sake indicates that intentional killing was not "part of our plan" from the start.²⁰

As I specified NILp earlier, it holds that it is presumptively permissible for an agent to intentionally cause a loss that it is normally impermissible to intentionally cause if (i) the loss is going to occur in any case, and (ii) something good is expected to come out of causing the loss. The above passage from Outka could be read as introducing further conditions: that the agent (iii) should not have initiated the circumstances she encounters,

(iv) should wish these circumstances were otherwise, and (v) did not plan to cause the loss “from the start”.

Note that it is not clear how Outka’s conditions relate to one another. Is it enough that *one* of these conditions obtains, or do they all need to obtain? Are they really separate conditions? It could be, for example, that what really matters to Outka is that it was not the researcher’s plan to cause the loss all along, as specified by condition (v). Conditions (iii) and (iv) may be relevant only insofar as their satisfaction is evidence that condition (v) is also satisfied.

Rather than seeking to determine precisely which of these three conditions Outka would want to incorporate into his version of NILp, I will explore, in what follows, whether any of these conditions might allow him to offer a plausible variant of NILp that can justify killing discarded embryos but not research embryos.

(iii) One should not have initiated the circumstances one encounters

Presumably, Outka’s idea in suggesting this condition is that a researcher who considers using a discarded embryo did not bring about the creation and discarding of that embryo. The embryo was created and discarded for reasons other than embryo research. It was created in the context of a fertility treatment and discarded because no longer wanted for reproductive purposes. It is only given these circumstances, which the researcher did not initiate, that she considers using the embryo for research purposes. It must then be assumed that a researcher who considers using a research embryo *did* initiate the creating and discarding of that embryo.

The question arises, however, why it matters, morally, whether one initiated the circumstances one encounters. Suppose that in *Tim and the Indians*, it was in fact Tim who

captured and handed over the Indians to the captain, being perfectly aware of the fact that the latter would make him the wicked offer. When the captain makes the offer, Tim suddenly deeply regrets what he did. He does everything he can to reverse the circumstances, but alas, he cannot change the captain's plan. It seems possible that Tim's killing of Mika could still be justified under these circumstances, even though it was Tim who initiated them (and it was wrong to do so).

Likewise, it is plausible that mixed NILp *could* justify research on research embryos if the researcher initiated the circumstances she encounters (for example, by creating the embryo in circumstances which ensure its early death), but now regrets this and tries, without success, to prevent the loss.

(iv) One should wish the circumstances one encounters were otherwise

Outka appears to be assuming here that a researcher using a discarded embryo wishes that the embryo was not going to die in any case. Indeed, according to Outka, the case for applying NILp to discarded embryos occurs in circumstances that are "lamentable". "We welcome neither infertility nor excess embryos", he writes.²¹ It must then be assumed that a researcher intending to use a research embryo does not think the circumstances are lamentable (presumably the evidence for this is that she initiated the circumstances, and it was her plan to kill the embryo all along).

But why exactly does it matter that the researcher wishes the circumstances she encounters were otherwise? Again, consider a modified version of *Tim and the Indians* where Tim in fact does not mind shooting Mika. Indeed it gives him a pleasurable feeling. Though it might be hypocritical of Tim to *appeal* to mixed NILp to justify shooting Mika²² (as he does not consider Mika's death a loss and, perhaps does not think it would normally be impermissible

to kill Mika), it is not immediately clear that from an *objective* viewpoint Tim's killing of Mika cannot be justified by mixed NILp.

Likewise, it may not matter, from an objective viewpoint, whether or not the researcher regrets that the embryo she considers using is going to die in any case.

(iv) Causing the loss should not have been the plan all along

The thought here seems to be that a researcher using a discarded embryo did not plan to kill that embryo 'from the start', that is, presumably, from the moment the decision was made to create it. The embryo was created for reasons other than embryo research. By contrast, a researcher using a research embryo must have planned killing the embryo from the start as the entire purpose of its creation was to use it in destructive research.

In *Tim and the Indians*, it clearly was not Tim's plan, prior to stumbling into the village, to kill Mika. But suppose it was his plan. Suppose he had come to the village with the intention of killing Mika. Why exactly would it be the case that NILp could no longer justify Tim's action? (Note that for it to have been Tim's plan all along to kill Mika, Tim need not have initiated or contributed to the circumstances he encounters. It might just be the case that the circumstances that obtain happen to be favourable to Tim realising his plan to kill Mika).

Again, it might be hypocritical of Tim to appeal to mixed NILp to justify shooting Mika. The fact that Tim planned killing Mika all along suggests he thinks killing an innocent person is permissible. But NILp is formulated as an exception to the rule that killing innocent persons is always wrong. It seems hypocritical, then, of Tim to appeal to NILp; this relies on a principle (killing innocent people is impermissible) that Tim is willing to disregard himself. However, it is not immediately clear that from an objective viewpoint Tim's killing of Mika cannot be justified by mixed NILp in this modified scenario.

Moreover, returning to embryo research, it is not clear why a researcher using a research embryo must always have planned killing that embryo from the start. True, if the researcher created the embryo herself, or requested its creation, this is quite strong evidence for the fact that she planned to kill it all along. However, not every researcher using a research embryo must have created or requested its creation. A researcher could simply use a research embryo independently created by another researcher who no longer wishes to use it himself.

So, where does this leave us? Outka's criteria do not clearly license the conclusion that NILp cannot, from an objective viewpoint, justify any research on research embryos. Perhaps it might be possible to argue that some combination of Outka's conditions might work, but I think there is a more promising route to take.

5.1. The agency cost

So far I have ignored a potential problem that afflicts my formulation of NILp, as well as other standard formulations that appear in the literature. Suppose that in *Tim and the Indians*, the good that comes out of Tim shooting Mika is not that nineteen Indians are saved (there are no other Indians in this scenario), but that someone in a nearby village receives a free meal at the local restaurant (so the offer is: if Tim shoots Mika someone will get a free meal, if he does not shoot Mika, the soldiers will shoot Mika and no one will get a free meal). Intuitively it is much less clear that NILp could presumptively justify Tim's shooting of Mika in this modified scenario. Why is that? I suggest that to explain this, we need to modify NILp by adding a condition. This condition holds that for NILp to justify an agent intentionally causing a loss that it would normally be impermissible to intentionally cause, the good that comes out of causing this loss must be proportionate to what I call the 'agency cost'. This is the moral cost of an agent being related in a certain way to the loss she causes,

for example, the moral cost of the agent causing the loss, rather than merely allowing the loss to occur. Many (in particular those appealing to NILp) would think that there is a morally relevant difference between Tim shooting Mika, and Tim allowing the captain to shoot Mika; when Tim shoots Mika, his conduct possesses a wrong-making feature that it would not have possessed had he merely allowed the captain to shoot Mika. This might be understood as an instance of a more general moral difference between doing or causing and allowing harm. But the agency cost does not *need* to be understood in terms of the moral distinction between doing or causing and allowing; it might also be understood in terms of, for example, the moral distinction between direct versus indirect harming, or intended versus merely foreseen harm; indeed, it may even be understood in terms of the adverse effects of the action on the agent's character.²³ An agency cost exists whenever the agent's particular relationship to the loss that she causes constitutes a wrong-making feature of her conduct, and the size of the cost is determined by the moral weight of this factor. It is this cost, I believe, which has to be proportionate to the good that comes out of the agent causing the loss. That is, I think, why it is implausible that NILp could justify Tim's killing of Mika if the only good that came out of that was that someone in a nearby village receives a free meal. The good is not proportionate to the agency cost. It is not proportionate to the moral cost involved in the fact that Tim shoots Mika, instead of allowing the Captain to shoot Mika.

If this is correct, then NILp should be modified as follows:

The nothing-is-lost principle (NILp). It is presumptively permissible to intentionally cause a certain loss that it would normally be impermissible to intentionally cause if (1) the loss is going to occur in any case, (2) something good is expected to come out of

causing the loss, and (3), the good that is expected to come out of causing the loss is proportionate to the agency cost.

So how could this help us find a justification for the view that NILp can justify killing discarded embryos but not research embryos?

It may be the case that, when a researcher kills a discarded embryo, condition (3) is met (the good that comes out of killing the discarded embryo is proportionate to the agency cost), but that when a researcher kills a research embryo condition (3) is not met.

Earlier, I pointed out that the good that is expected to come out of research with research embryos is at least as great as the good that is expected to come out of research with discarded embryos. Both types of embryo research hold enormous promise for preventing or alleviating human suffering. Since the good that is expected to come out of killing a research embryo and the good that is expected to come out of killing a discarded embryo are equally large, it must be the agency cost that is different.

Though in both cases the researcher bears an agency cost because of her relationship to the present embryo's death – for example, in both cases the researcher kills the embryo instead of allowing others to kill it – there may be another wrong-making feature that is only present when a researcher kills a research embryo, not when she kills a discarded embryo. If this is so, the good that comes out of killing a research embryo might be disproportionate to the agency cost involved in doing so, even though the same good would be proportionate to the agency cost involved in killing a discarded embryo. The question is, then, what this additional wrong-making feature could be.

One important difference between *Tim and the Indians* and embryo research that I have ignored so far is that the latter is an ongoing practice rather than an individual action that is

unlikely to be repeated. It is unlikely that the circumstances which Tim encounters will occur again, let alone, recur on a regular basis. Thus, it is unlikely that Tim's response to the circumstances he encounters will have any effect on whether similar actions are performed in the future. Destructive embryo research, however, is something that is typically done by researchers in a systematic way with legal endorsement. The circumstances in which (prospective) embryo researchers find themselves are repeated over and over. This makes it much more likely that a single instance of killing an embryo will have an effect on the future actions of others. It is this effect on others that I believe may help to explain why a killing a research embryo cannot be justified by NILp.

How does a researcher killing a research embryo influence the future actions of others, and how does this offer an explanation for why NILp cannot justify it?

First, by killing a research embryo, a researcher may soften attitudes towards embryo killing. She may thereby make it more likely that embryos will be killed by other researchers, instead of being donated to others to ensure their use for reproductive purposes. Second, by killing a research embryo, a researcher also contributes to a demand for more research embryos, thereby encouraging the creation of embryos doomed to never be used for reproductive purposes. To formulate it in Outka's terminology: even though the researcher did not contribute to 'the circumstances he encounters' now, by contributing to a demand for more research embryos he contributes to the existence of future circumstances similar to the ones he currently encounters: circumstances which virtually ensure that each research embryo is going to die given what others will do and regardless of what an individual researcher does. Through this mechanism, a researcher destroying a research embryo encourages further embryo deaths.

However, if the researcher abstained from killing the embryo, and ‘merely’ allowed others to kill it, surely further embryo deaths would also be encouraged, though not by the researcher in question. So whatever the researcher does, further embryo deaths will be encouraged. Why, then, can NILp not justify killing a research embryo? The reason is that the relationship between the researcher and the future losses she contributes to by killing the embryo brings an agency cost to her action. The fact that she, rather than others, encourages further embryos deaths adds a wrong-making feature to her action, and this matters to those who appeal to NILp..

Thus, when a researcher kills a research embryo, two losses occur – the loss of life of the present embryo and the loss of life of future embryos – and there is an agency cost associated with each. If the researcher does not kill the embryo, both of these losses will still occur, but in neither case will the researcher bear any agency cost.

It could be argued, then, that when a researcher kills a *research* embryo, the good that comes out of it is not proportionate to the agency cost, though it would be if the researcher were causing only a loss to the present embryo. If that is true, then the third condition of NILp is not met and NILp cannot justify destructive research on research embryos. On the other hand, it might seem that NILp *can* justify the killing of *discarded* embryos, since in this case there is no question of contributing to further embryo killings. The discarded embryos are created, and doomed to death, by fertility doctors and their patients, and their actions are not likely to be influenced by the actions of researchers.

6. Why the nothing-is-lost principle cannot justify killing discarded embryos

I believe that this final step is too quick, however. By killing a discarded embryo, a researcher also encourages further embryo deaths. Although a society that accepts IVF is unlikely to

suddenly stop offering IVF treatments, it might still change the practice in such a way that fewer surplus embryos are created, and thus fewer embryos will be discarded. The benefits that flow from doing research on discarded embryos may weaken any incentive to implement or further develop forms of IVF that result in fewer discarded embryos destined to die. (The creation and freezing of surplus embryos is not a requirement of IVF. It is done to reduce harm and discomfort for the woman undergoing IVF. In some countries, including Italy, IVF is performed without the creation and freezing of surplus embryos.) A researcher killing a discarded embryo may also cause those already uncertain about the moral status of the embryo to feel increasingly comfortable about killing embryos, making it easier to accept that embryos will not be used for reproduction, and reducing efforts to help ‘rescue’ embryos through adoption. Thus, it seems that by killing a discarded embryo, a researcher also contributes to the existence of future circumstances that are similar to the ‘deplorable’ circumstances she currently encounters. As a result, a researcher destroying a discarded embryo also contributes to further embryo deaths. This adds the same wrong-making feature to the researcher’s action as in the case of a researcher killing a research embryo. Both types of research seem to involve the same agency cost, for they both involve (i) intentionally causing the present embryo to die, and (ii) foreseeably contributing to future embryo deaths.

Unless there is another reason why the agency cost of a researcher killing a research embryo is significantly²⁴ higher than the agency cost of a researcher killing a discarded embryo, and it is now up to the defender of the discarded-created distinction to show this, we should accept that if the good that comes out of killing a *research* embryo is not proportionate to the agency cost, then the good that comes out of killing a *discarded* embryo must not be proportionate to the agency cost either.²⁵ Thus, if NILp fails to justify killing research embryos because the

proportionality condition is not satisfied, it also fails to justify killing discarded embryos, for the same reason.

7. Conclusion

I have argued that the nothing-is-lost principle (NILp) cannot support the discarded-created distinction. After establishing that NILp could plausibly justify killing a person, and thus a discarded embryo if embryos are persons, I considered Brock's weaker and stronger versions of the principle. I agreed with Brock that neither of these versions can justify killing discarded embryos. I then developed a plausible version of NILp – mixed NILp – which *could* perhaps justify killing discarded embryos. However, it turned out that *if* mixed NILp could indeed justify killing discarded embryos, then it could also justify killing *research* embryos. I then considered Outka's proposed specifications of NILp to see whether these could explain the claim that NILp can justify killing discarded embryos but not research embryos, but concluded that they do not clearly license the conclusion that NILp cannot, from an objective viewpoint, justify any research on research embryos.

I argued that a more plausible route to take is to add a condition to NILp which holds that the good produced by an agent causing a loss be proportionate to the *agency cost*. I defined the agency cost as the moral cost of an agent being related to the loss in a certain way, for example, the moral cost of the agent causing the loss, instead of her allowing the loss to occur. However, I concluded that the agency cost involved when a researcher destroys a research embryo seems to be equally large as the agency cost involved when a researcher destroys a discarded embryo. The main reason being that whether one performs research using discarded embryos or research embryos, one encourages the creation of embryos that are doomed to be destroyed. Thus, NILp cannot support the discarded-created distinction.

The principle either presumptively justifies both research on discarded embryos and research on research embryos, or it justifies neither.

¹ In most countries where IVF is practised, on average five to ten embryos are produced per IVF cycle. One or two are transferred to the uterus, while the remaining embryos are stored in nitrogen freezers. If an attempt to achieve a pregnancy fails, one or two embryos can be thawed for another attempt. Freezing of several embryos has the advantage that women do not have to undergo the hormone therapy and egg retrieval procedure after each failed attempt to generate a pregnancy. At the start of the IVF treatment, the couple must indicate one of the following options for handling of any surplus frozen embryos: (1) donation to other infertile couples, (2) donation to scientific research, or (3) allowing the embryos to perish. Most embryo research, including most embryonic stem cell research, is performed on embryos donated for research, as under option (2).

² National Institutes of Health, *Final Report of the Human Embryo Research Panel* (Bethesda, Maryland: NIH, 1994), pp. 42-5.

³ Some believe that embryos created through cloning have a lower moral status than embryos created through IVF, as they lack the potential to develop into a person (see, for example, Paul R. McHugh, 'Zygote and "clonote"-the ethical use of embryonic stem cells', *New England Journal Of Medicine*, 351, 27 (2004): 209–10). They typically find research with cloned embryos less problematic than research using discarded embryos. However, many are not convinced by this line of thought as they believe cloned embryos may eventually be able to develop into a person (see, for example, Louis M. Guenin. *The Morality of Embryo Use* (Cambridge: Cambridge University Press, 2008), pp. 189-90). This may well be true. I therefore assume in this paper that discarded and research embryos have the same moral status.

⁴ I focus on this argument because it is widely used (not only in the stem cell debate) and hasn't received sufficient philosophical attention. It has often either been taken for granted or dismissed too easily. I have dealt with other arguments adduced in support of the discarded-created distinction elsewhere, including in 'Creating and sacrificing embryos for stem cells', *Journal of Medical Ethics*, 31,6 (2005): 366–70 and 'Embryo deaths in reproduction and embryo research: a reply to Murphy's double effect argument', *Journal of Medical Ethics*, doi:10.1136/medethics-2012-101065 (Published Online First, 2012).

⁵ Gene Outka, 'The ethics of embryonic stem cell research and the principle of nothing is lost'. *Yale Journal of Health Policy Law & Ethics*, 9, 585 (2009): 585-602 (596).

⁶ Gene Outka, 'The ethics of human stem cell research', *Kennedy Institute of Ethics Journal*, 12, 2 (2002): 175-213.
Michael R. Prieur, Joan Atkinson, Laurie Hardingham, David Hill, Gillian Kernaghan, Debra Miller, Sandy Morton, Mary Rowell, John F. Vallely, and Suzanne Wilson, 'Stem cell research in a catholic institution: yes or no?' *Kennedy Institute of Ethics Journal*, 16, 1 (2006): 73-98.

⁷ George J. Annas, Arthur Caplan, and Sherman Elias, 'Stem cell politics, ethics and medical progress', *Nature Medicine*, 5, 12 (1999): 1339-41 (1340).

⁸ The nothing-is-lost principle is notorious for exploitation by contrivance. It is on this basis that many simply dismiss arguments that appeal to it. (For example, a typical objection is that NILp is implausible because it is obviously impermissible to kill one's grandmother, even though she's going to die soon anyway.) However, as I show in this section, there are cases where it could be plausibly appealed to, even when the life of a person is at stake. I aim to formulate the strongest possible version of the principle in order to subject it to a thorough analysis.

⁹ Bernard A.O. Williams, 'A critique of utilitarianism' in John J.C. Smart and Bernard A.O. Williams (eds.) *Utilitarianism: For and Against* (Cambridge: Cambridge University Press, 1973), pp. 82-117. My change consists in specifying which Indian is going to be killed in any case.

¹⁰ I believe that this is true even if Tim cannot be 100% sure whether the soldiers are going to kill all the Indians if he doesn't shoot Mika. I think it is sufficient for NILp to plausibly justify Tim's killing of Mika if Tim has *good reason* to believe that the soldiers will kill all the Indians if he does not shoot Mika.

¹¹ Outka (2009) op. cit., p. 595.

¹² Dan W. Brock, 'Creating embryos for use in stem cell research', *Journal of Law, Medicine & Ethics*, 38, 2 (2010): 229-237.

¹³ Brock op. cit., p. 232.

¹⁴ I am assuming here that the agent is the researcher, as the question we are concerned with is whether it is permissible for a researcher to kill an embryo to obtain stem cells.

¹⁵ Note that what options are reasonable will partly depend on what moral status one accords to the embryo.

¹⁶ Brock op. cit., p. 232.

¹⁷ Outka op. cit.; Ronald M. Green, 'Benefiting from 'evil': an incipient moral problem in human stem cell research', *Bioethics*, 16, 6 (2002): 544-56.

¹⁸ Note that, interestingly, research embryos created through cloning do not (yet) have this potential, which implies that even the stronger version of NIL_p could possibly apply to the destruction of these embryos. Since cloned embryos may not be able to give rise to live offspring in the near future, they are going to die or be destroyed soon given what anyone could do.

¹⁹ See, for example, Brock op. cit.

²⁰ Outka (2009) op. cit., p. 596.

²¹ Outka (2009) op. cit., p. 600.

²² In his Tanner Lectures 'Incentives, Inequality and Community', G.A. Cohen (1991) argues that an argument's persuasive value may depend on who appeals to the argument. Gerald A. Cohen. *Tanner Lectures 'Incentives, Inequality and Community'* (1991). <http://tannerlectures.utah.edu/lectures/documents/cohen92.pdf>.

²³ I'm indebted to Justin Weinberg for the reference to character formation.

²⁴ I have been assuming that the good that is expected to come out of research using a research embryo and the good that is expected to come out of research using a discarded embryo is equally large. However, given that research with research embryos could solve problems that research with discarded embryos cannot solve, the good that is expected to come out of that research could be said to be larger than the good expected to come out of research with discarded embryos. This suggests that even if the agency cost would be somewhat greater

when a researcher kills a research embryo than when she kills a discarded embryo, this cost might still be outweighed by the larger expected benefits of the research. Thus, defenders of the discarded-created distinction would have to show that the agency cost associated with a researcher killing a research embryo is *significantly* higher than that associated with a researcher killing a discarded embryo.

²⁵ A possible candidate for an increased agency cost in the case of research on research embryos is that it is much worse to encourage the existence of research embryos because the creation of research embryos treats the embryos with disrespect, whereas the creation of surplus embryos in the context of IVF is compatible with respectful treatment of the embryo. I argue elsewhere that this argument fails ('Against the discarded-created distinction' in Muireann Quigley, Sarah Chan, and John Harris (eds.) *Embryonic Stem Cell Research. Stem Cells: New Frontiers in Science and Ethics* (World Scientific Publishing, 2012) pp.137-162.