

Donating Embryos to Stem Cell Research

The “Problem” of Gratitude

Jackie Leach Scully · Erica Haines ·
Anika Mitzkat · Rouven Porz ·
Christoph Rehmann-Sutter

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Abstract This paper is based on linked qualitative studies of the donation of human embryos to stem cell research carried out in the United Kingdom, Switzerland, and China. All three studies used semi-structured interview protocols to allow an in-depth examination of donors’ and non-donors’ rationales for their donation decisions, with the aim of gaining information on contextual and other factors that play a role in donor decisions and identifying how these relate to factors that are more usually included in evaluations made by theoretical ethics. Our findings have implications for one factor that has previously been suggested as being of ethical concern: the role of gratitude. Our empirical work shows no

evidence that interpersonal gratitude is an important factor, but it does support the existence of a solidarity-based desire to “give something back” to medical research. Thus, we use empirical data to expand and refine the conceptual basis of bioethically theorizing the IVF–stem cell interface.

Keywords Embryo research · Embryo donation · Human embryonic stem cells · In vitro fertilisation (IVF) · Assisted reproductive technologies (ART)

Embryo Donation as a Sociomoral Practice

Embryos generated through assisted reproductive technologies (ART) are deemed surplus when, for some reason, they are not used for reproductive purposes (Svendsen and Koch 2008; Haines and Taylor 2011); instead, they are then disposed of or, where this is allowed by a country’s ART regulation, may be donated for a variety of research purposes. Thus, the generation and subsequent fate of embryos that are designated surplus are determined as much by legislation as by embryo biology or technological constraints. For example, legislatures differ in whether cryopreservation of embryos is permitted, meaning that in some countries any IVF embryos not immediately transferred for pregnancy are surplus, while in others they may be frozen for later transfer. In some countries, the law considers surplus embryos as the primary source of material for human embryonic stem

J. L. Scully (✉) · E. Haines
Policy, Ethics and Life Sciences Research Centre,
Newcastle University,
Claremont Bridge, Claremont Road,
Newcastle NE1 7RU, UK
e-mail: Jackie.scully@ncl.ac.uk

A. Mitzkat
Institute for History, Philosophy and Ethics of Medicine,
University Medical Center, Johannes Gutenberg-University,
Mainz, Germany

R. Porz
Ethics Unit, University Hospital,
Bern, Switzerland

C. Rehmann-Sutter
Institute for the History of Medicine and Science Studies,
University of Lübeck,
Lübeck, Germany

cell (hESC) research, while in others this use of embryos is expressly forbidden.

Although hESC research has been subjected to exhaustive ethical scrutiny, the lack of consensus on the ontological or ethical status of surplus embryos means that the uses to which they may then be put remain contested (Deckers 2007; Guenin 2008; Moller 2009). Even if using human embryos for stem cell research is deemed permissible, ethical issues continue to emerge as new social practices and roles develop around the act of embryo donation. The relative novelty of these practices and roles, complicated by the pace of change in technical possibility and regulation, mean that there is still uncertainty about how to conceptualise embryo donation, not just in terms of systematic ethics but as a sociomoral practice in everyday social life and morality (Banks, Scully, and Shakespeare 2006). From a sociological perspective, and also to understand more generally how everyday morality deals with unprecedented ethical dilemmas, it is important to examine which conceptualisations emerge as salient and how they are stabilised and used. For example, one way of thinking about the donation of embryos to research is as a bodily gift relationship, one of the many established by modern biomedicine such as the donation of eggs and sperm for reproductive purposes, organs or tissues for transplantation, blood for transfusion, and other biological tissues for research. Drawing analogies to existing practices in this way has proved helpful in other instances of bioethical novelty (Hofmann, Solbakk, and Holm 2006). However, analogies can equally well be misleading, if there are morally relevant but unacknowledged differences between situations. The contexts in which different organs and tissues are donated vary significantly, and these differences influence the sociomoral understanding of donation in each case and make them noncomparable in ethical terms. Reproductive tissue, for example, is generally distinguished from other types of donated tissue because eggs, sperm, and embryos have the potential to give rise to new individuals, not just to prolong the lives of existing individuals, or to be used for research. Because embryos are generally considered to have a different moral status from other tissues, the use of surplus embryos in research raises moral unease about the instrumentalization of human life that is not raised in quite the same way by the donation of either ova or sperm. It is therefore unclear whether an embryo can meaningfully

be treated as a “gift” (“donation”) without blurring the morally relevant differences between embryos and other tissues. Similarly, “hESC research,” to which the embryo may be given, is a domain of biomedical practices and not an entity. As such, hESC research is not a subject with which a gift relationship can be established (unlike, for instance, an organ recipient).

Empirical Exploration of Donation Decisions

Understanding the social and ethical meanings that are emerging for the practices associated with embryo donation calls for a detailed empirical examination of people’s reasoning behind donation decisions. However, most empirical studies of embryo donation have not focused on people’s donation rationales in depth (with some exceptions; for example, Haimes et al. 2008; De Lacey 2003). The scarcity of data on donor rationales means there is a corresponding lack of information on contextual and other factors that influence donor decisions and how these can be related to the evaluations of theoretical ethics.

The authors of this paper have been involved in a series of linked qualitative studies of practices of embryo donation, first in the United Kingdom (researcher Haimes and colleagues), then Switzerland (Scully, Rehmann-Sutter, and Porz), and in a smaller pilot project in China (Mitzkat, Rehmann-Sutter, and Haimes). All three studies shared an interest in understanding reasons for the donation or non-donation of embryos. While the studies in Switzerland and China drew upon the original U.K. design, each study was conducted independently, and the details of each project, including interview design, differed in light of the varying regulatory, clinical, and cultural contexts. However, by looking across the three data sets, we hope to gain cross-cultural insights into donation and non-donation rationales and the moral understandings on which they are based. The three studies all used open-ended, semi-structured, one-off interviews between the researcher and people who had been in the position of deciding whether to donate their surplus embryos to research. Interviews were designed to explore in depth not just the interviewees’ decision about donation but also the background to that decision, such as their IVF story, their family and other relationships, their relationship with the clinic and its staff, and so on.

The interviews were transcribed, coded, and initially analysed to identify the reasons for donation decisions given by participants in each study, using an interpretative approach that all of us have previously found useful for identifying key themes around decision-making and implicit or explicit ethical judgements (Charmaz 2006; Smith, Flowers, and Larkin 2009). The U.K. study ran for more than three years; after some familiarisation and observation in the collaborating clinic, 44 in-depth interviews were conducted with couples who had been asked to donate their surplus fresh embryos, generated through ongoing IVF treatment, to hESC research (Haimes and Taylor 2009). In the United Kingdom, it has been possible for some years to donate unused embryos to stem cell and other kinds of research and also to other couples. The Swiss study was carried out shortly after a change in the law that permitted fresh or cryopreserved surplus IVF embryos, under strictly defined conditions, to be donated *to stem cell research only*. In this study, 17 individuals who had variously chosen to donate or not to donate were interviewed; thus, the decision concerned the fate of cryopreserved embryos some time after the IVF treatment that had produced them (Scully, Rehmann-Sutter, and Porz 2010). The Chinese work involved a much smaller three-month pilot study carried out in a large ART hospital. It was designed as a pilot to provide a comparison with the U.K. and Swiss material and is, therefore, included here despite the low number of participants, but with no attempt to draw general conclusions from it. Legislation in China does not allow the donation of embryos to other couples, but consent can be given for a surplus embryo to be used in stem cell research or for it to be discarded. The study included participant observation of the information and consent procedures and qualitative interviews with five IVF patients, three choosing to donate to stem cell research and two refusing (Mitzkat, Haimes, and Rehmann-Sutter 2010). All three studies were approved by the relevant local ethics committees. For the purposes of this paper, the authors involved in the studies jointly compared the rationales for donation decisions given by their participants. We also independently reexamined interview transcripts for material relevant to the discussion of gratitude.

In the rest of this paper, we first identify and compare the main reasons given by participants in these three studies for their decisions to donate or to refuse to donate their surplus embryos to research. We then

look in more detail at the implications of our findings for one area of potential ethical concern: the possible role of gratitude in making embryo disposition decisions. In this way, we not only collect empirical data to help understand the emerging moral meaning of a new practice, but also give an example to show how empirical data can be used to question and then refine the conceptual basis of bioethical theory.

Reasons for Donating

Participants who chose to donate their surplus embryos to research had a background premise that donation is fundamentally permissible because embryos do not have the sort of ontological or moral status that would forbid it. The Swiss study discovered people stating this explicitly: “[Embryos] are not, they are not yet people; they aren’t beings with souls as far as I’m concerned,” as one Swiss participant said.¹ But this did not mean that the surplus embryos were considered as morally equivalent to any other tissue, and participants in both the Swiss and U.K. studies stated reservations about “simply throwing them out.” Several U.K. interviewees stopped themselves midway through sentences referring to the “left over embryos,” which they clearly felt, on reflection, was an inappropriate phrase. So the embryos did not have the sort of moral status that would have made it wrong to donate them, but neither were they completely disposable. To some of our participants, embryos had a value; they were a precious resource (Haimes et al. 2008) that made simply throwing them out an unjustifiable waste. As another U.K. interviewee put it: “I think it would have been a waste if they’d just been destroyed ... [I]t just really seemed a waste, really, not to have them used.” It was not always clear, however, quite how interviewees were using this notion of “precious”: whether with reference to economic “bio-value” (Waldby 2000; Waldby and Mitchell 2006) or because they had been obtained at intense personal and emotional cost, or because they had high moral value, or possibly a combination of all these aspects.

Particularly in the Swiss study, which involved cryopreserved embryos stored for some time, participants

¹ The three independent studies used different schemes to identify participants and quotes. To avoid confusion, all quotes are identified here only by the study from which they came.

referred to embryos' moral status in a nuanced way that was highly sensitive to the developmental stage of the embryo, its physical location (whether inside or outside the body), and its state (whether cryopreserved or not) (see Scully, Rehmann-Sutter, and Porz 2010). Participants in the Swiss and U.K. studies seemed less interested in explicitly defining "the" moral status of an abstract embryo than working out what their own particular embryos meant for them at defined points in their own story, and what this meaning then indicated it was morally permissible for them to do with that embryo.

Contribution to Research

Across all three studies the commonest rationale for opting to donate was a willingness to contribute to potentially curative medical research. Such research was seen as a valuable endeavour by those like the Swiss participant who said, "I feel that, fundamentally, research has to go on, and I support that." Donation of their spare embryos to research was therefore seen as a morally good act, based on a kind of ethical arithmetic in which simple disposal produced zero good from the surplus embryo, while donation had the potential to do good by supporting research. As one U.K. interviewee said, "It was quite simply that 'we've been helped by the system, we should help the system back.' ... Not because of some sort of martyrdom or heroics or anything like that, just quite simply that without such efforts things don't progress." In the U.K. study there was an added imperative to donate surplus embryos to research as there had been a lot of press coverage about the hoped-for curative outcomes of stem cell science: "I think the research is very important, like it was in the news a while ago to say that [the Senior Clinician] was successful in stem cell research and that's what you need in order to provide medical assistance in the future, so I'm all for it."

This observation raises a separate *ethical* concern about the patients' understanding of the information they were given about the research goals. Here, there were distinct differences between the three studies. In the Swiss study, the notification from the clinic storing the frozen embryos stated clearly that donation was to stem cell research, yet the majority of donors we interviewed who referred to research did so in terms that were directly relevant to infertility. For instance, one participant said, "A lot of preparatory work,

research work, went on before medicine was advanced enough that it was possible for us to have children. ... [T]his is now maybe a tiny tiny contribution, that we can give back, if we now donate a, er, fertilised egg, perhaps for further research." Note that in the Chinese pilot study none of the participants spoke in precise terms about the research involved; however, they described it broadly as "scientific research ... for the IVF treatment." One Chinese interviewee said she did not really know what the research was about, but trusted the doctors and hoped it would help other infertile women. In Switzerland, the donors were *former* IVF patients donating cryopreserved embryos; in China, they were *current* IVF patients donating either fresh or cryopreserved embryos. In neither of these studies were participants asked outright if they thought their donated embryo was being used in infertility research. However, the fact that they used phrases such as "helping others *as we have been helped*" (italics added) indicates a potential misunderstanding. It raises the possibility that if they had been fully aware that the research undertaken with their embryos did not concern infertility, participants might have chosen *against* donation.

The U.K. participants had much clearer ideas about the research to which they were being asked to donate; they knew that it was not for research on fertility issues. These participants, as in the Chinese study, were current patients donating fresh embryos. The differences in comprehension are therefore unlikely to be due to the request context (former vs. current patients or fresh vs. frozen embryos) in itself. However, in the U.K. study participants were asked to decide whether or not to donate to a number of specific projects, for each of which the goal and methodology was explained in detail, orally and in writing. It is possible that this level of engagement with the detail of the research underlies the difference. It will be important to clarify this, and to identify best practices for maximising patient comprehension of the research goals, because if (as our material indicates) the type of research to which people donate is a relevant factor in their moral evaluation, then the question of whether they fully understand its nature is ethically crucial.

Reparation

As we have seen, some of our participants reasoned that if their embryo was not going to be used for

pregnancy, then donating it to a good endeavour (research) would be more meaningful than simply discarding it. Notably in the Swiss interviews, however, several participants went further. For example, one interviewee said: “If we’ve created life that we, or I, don’t want any more, then maybe it’s least sinful, or however you want to put it, if something meaningful happens to it. ... I feel a little bit guilty sometimes, not very much, but a little bit like ... if we can at least give these embryos for a good reason, then it wasn’t completely in vain.” Using similar wording, another said, “If I’ve already gone a bit astray, and in a sense we’ve produced life, erm, then at the very least something meaningful should come out of it.”

Our interpretation of their statements is that they felt they had (inadvertently) done something wrong in “creating life” but then not using that life as intended in pregnancy, and that donation to a good endeavour would in some way make up for this wrong. (We want to be quite clear here that we are not arguing that failure to use an IVF embryo in pregnancy actually *is* a moral wrong, only that some of our participants said that in their case they felt so.) They did not indicate that they felt their use of IVF in itself had been wrong, but articulated the sense that in ending up with *surplus* embryos they had done something less than ideal. For these Swiss participants, then, their donation decision appears to have been driven in part by what we could call a *reparative urge*. No indication of any similar reparative urge was observed in either the U.K. or the Chinese interviews: we discuss this difference further below.

Reasons Not to Donate

Approximately half of the Swiss participants who were interviewed turned out to have decided against donation and instead have their surplus cryopreserved embryo(s) destroyed. None of these explicitly used the moral status of the embryo as the fundamental basis for rejecting donation to research. Rather, the most common reason given was anxiety and mistrust about what “the scientists” would do with their embryo, which was articulated either as disapproval of *specific types* of research (e.g., “not if it’s for cloning”) or as a more *general unwillingness* to relinquish responsibility of the embryo to unknown others. In both sets of reasoning, therefore, participants were expressing

unease about the loss of control over what would happen to their embryo. The two Chinese interviewees who had opted against donation also did so because of reservations about lack of knowledge of exactly what the embryos would be used for, explicitly mentioning the fear that they would be donated to (i.e., used to generate pregnancy in) other women. In addition, two of the Swiss participants gave financial reasons, that is, they expressed anger that they would not be compensated for giving up their embryo and that through donation researchers were “getting something for nothing.” In the U.K. study, speculation about why some people might refuse to donate raised concerns about what might be done with the embryos and whether a baby would be developed through experimentation; others wondered if “refusers” were worried that another infertile couple would receive their embryos and have a baby when they, the embryo providers, failed to do so. The U.K. sample contained only two actual refusers, who objected on the grounds of possible use in animal research (Haimes and Taylor 2009; Hug 2008).

The Problem of Gratitude

These observations provide material for an empirically grounded bioethics of the IVF–stem cell interface (Franklin 2006). In the rest of this paper, we consider a single aspect in detail: the potential “problem” of gratitude influencing informed consent.

Empirically, the main reasons given by our participants for donation were: (1) to avoid the waste of a precious resource, (2) to give something back to research, and (3) to compensate for a perceived moral wrong. In none of the three countries did our participants indicate that their decision arose out of any sense of gratitude to the physician who had given them IVF treatment. This is an important observation, because the possible impact of gratitude on informed consent in embryo donation has previously been raised by bioethical commentators. It has been suggested that if there is any institutional or procedural link between IVF treatment and hESC research, the potential donors’ gratitude toward the clinicians who have helped them to conceive may steer them toward opting for donation (Haimes and Luce 2006; Parry 2006; McLeod and Baylis 2007; also discussed in Roberts and Throsby 2008). The bioethical concern

is that parents who receive the “gift of a baby” will feel a sense of gratitude; feeling grateful might then cause parents to feel that they should respond with a gift in return; and if a request for donation of surplus embryos is made *in that context*, potential donors might inadvertently be encouraged to see donation as an appropriate form of return gift. In this way the moral emotion of gratitude could compromise the potential donor’s freedom to weigh the pros and cons of the request, which in turn means compromising the capacity to give fully voluntary consent. Even where the clinicians and researchers themselves are scrupulous about not using persuasion, gratitude might be persuading potential donors to do something they would not otherwise choose to do.

To avoid this possibility, countries that allow embryo donation for research may attempt a strict separation of IVF treatment and the stem cell research domain. (Not all legislatures do this, however: China is one country that does not.) In the United Kingdom, for example, it is accepted good practice that requests for donation of spare embryos should not be made by the physician(s) who delivered the original IVF treatment. In Switzerland, a predominant interpretation of the current law on embryo donation is that a couple undergoing IVF treatment should not be told even of the theoretical possibility that a surplus embryo might be generated unless it actually is (Porz et al. 2008). By setting up such physical and procedural barriers, regulators hope to rule out any conflict of interest on the part of the treating physician as well as the possibility of gratitude on the part of the patient. There are several theoretical questions that can be asked about a claim that the “risk” of gratitude affects potential donors’ decisions. For example, moral psychologists might want to examine the emotional exceptionalism in which gratitude is seen as potentially compromising, while other emotions, or even the absence of emotion, is not. There is also an obvious empirical question which does not seem to have been closely examined: whether potential embryo donors actually do experience a sense of personal gratitude to the physician—or one strong enough to sway their donation decision. Our findings suggest that they do not. However, they do indicate that participants’ rationales for donation indicate a desire to “give back” in a more complex way.

First, our empirical results show the importance of distinguishing between the three moral emotions of

gratitude, *indebtedness*, and *solidarity*. These three terms have overlapping meanings. What we normally mean by gratitude is an emotion primarily associated with *gifts* or with help that is *undeserved*. Gratitude has been defined as “a feeling of thankful appreciation for favours received” (Guralnik 1971, 327) and is experienced as a positive emotion. Watkins et al. (2006) provide a basis from experimental psychology for distinguishing between indebtedness and gratitude. One important distinction is that “indebtedness is an emotion of exchange, whereas gratitude is not” (Watkins et al. 2006, 236). Even if a debt of gratitude is felt, “it does not appear to be analogous to an economic debt” (Watkins et al. 2006, 239). Indebtedness, however, is, literally, a debt: a “state of obligation to repay another” (Mauss 2001, 2). A further feature associated with indebtedness but not with gratitude is the inherent imbalance of power, so that a hierarchy is created in which those who are indebted are rendered more vulnerable. The empirical social psychological work of Watkins et al. indicates that, in experimental settings at least, a person’s feelings of gratitude diminish as the expectation of return (indebtedness) increases. The more reciprocity is expected or demanded, the *more* indebted and the *less* grateful a beneficiary feels. Importantly for considering the effects of these social emotions on donation decisions, Watkins et al. found that the greater the expectation that something will be given back in return, the less motivated the participants were actually to comply with the norm of reciprocity (Watkins et al. 2006, 236). These results suggest that if patients were to sense any expectation of return by an individual physician or researcher, it would if anything *lessen* any gratitude they might have felt.

In the IVF context, what people have received (the thing for which they might feel grateful) is their baby or pregnancy, or at the very least, treatment. Donors who achieve this have not received a *gift*, but a medical service, which will have been paid for in one way or another. In Switzerland, where IVF is not covered by the mandatory health insurance, this will often be direct payment from the patients to the clinic, as it will also often be in China. In the United Kingdom, patients who do not already have children commonly receive two “free” cycles of NHS treatment (paid for through taxes on the population), and then they pay for future cycles directly through fees to the clinics. Whatever the system of payment, however, the point is that

the IVF physician or clinic has already been paid, directly or indirectly, for the treatment which produced the outcome. So in the case of embryo donation, it could be argued that neither gratitude nor indebtedness should be anticipated. Gratitude would not be expected, because what patients have received was not a favour or unexpected gift; and indebtedness would not be expected, because there is no debt if payment has already been made.

In our three studies, although we found appreciation and high esteem were expressed for the work of the treating hospital or team, we found no evidence of gratitude being expressed toward an individual physician. This is despite the fact that in both the United Kingdom and China mention was made of the well-known head physicians who led each clinic; the mentions were in appreciation of their reputations, not as a debt of gratitude. Participants wanted to do something with the surplus embryo that would be of benefit to research and medical treatment for infertility, but this was not directly associated with the physician who provided it originally. Indeed, some of our interviewees were critical of aspects of their own IVF treatment, while still wanting to support the infertility research enterprise overall. In this context, it should be remembered that about half the Swiss participants interviewed in fact chose not to donate, primarily out of anxiety about losing control over the fate of their embryos, but also in some cases because it meant researchers were “getting something for nothing.” Similarly, in the U.K. study, a few patients were suspicious that research was being prioritised over treatment and that embryos might have been kept back for the research rather than frozen. Although only a small number of participants expressed this view, it has particular relevance here as it indicates clearly the *absence* of either gratitude or indebtedness: indeed, it suggests that these participants felt that, if anything, donation would mean the researchers were receiving something beyond their entitlement or were indebted to the patients rather than the reverse.

Social exchanges may entail giving back not to an individual, because the individual may be unknowable or because the benefit may not have come from a single identifiable person, but to “the pattern of social life” (Becker 1986)—for example, giving back to the institutional biomedical research that had helped the participants. In *serial reciprocity*, person A receives something from person B, but pays back not to person

B but to some other third party (Moody 2008). Serial reciprocity accounts for the way that altruistic blood donors often *do* describe their action in terms of reciprocity, even though they have not received anything from the person to whom their blood eventually goes. What drives serial reciprocity is not gratitude or indebtedness to an individual or an organisation but a sense of solidarity with unknown others in the community.

In the case of embryo donation, what appears to be a directly reciprocal act of gratitude—a surplus embryo in return for treatment—may thus be understood as something quite different. Participants in our studies used a rationale for donation based not on reciprocal exchange between individuals, but on “giving back to” a research enterprise from which they had benefited and which they hoped would benefit unknown others in the future. For the Swiss and Chinese donors who choose to donate because they think they are supporting infertility research, these unknown others are not completely anonymous: they are “known” because of imaginatively shared experience. “Giving something back” to the research that had helped them (as they think they are doing) was not considered an obligation but, rather, a form of return that was meaningful and seemed especially fitting to them because of the experiences they had gone through. In the U.K. study, although there was greater clarity about the purpose of the research being contributed to, there was still a sense among embryo providers that they were benefiting from the fact that others had participated in research in the past which had improved IVF; they were clear in expressing solidarity with this imagined community of previous IVF research contributors by making their own contributions to research, albeit research in another domain.

At least some of our participants, then, also see their donation to research as an indirect way of passing on the benefit they have received from research to someone else, whose situation in some way resembles their own. The social meaning of this indirect reciprocity is neither gratitude nor indebtedness, but solidarity with other present and future patients.

Concluding Comments on Reparation, Solidarity, and Consent

To summarise: Our interpretation of the material suggests that donors’ reasons for donating were not

connected in any straightforward way to either gratitude or indebtedness. For some people the desire *not to waste* a valuable (in more than one sense) resource is foremost. A generally positive stance toward biomedical science means that donation is a good use of a valuable resource. With some of the Swiss participants, we also identified a *reparative* urge coming from a sense of moral unease, and here donation seems to offer a route through which the urge to make reparation can be satisfied. All of this suggests that neither gratitude nor indebtedness per se are present in decision-making at the IVF–stem cell interface, at least not in terms of undue inducement or of compromising the capacity for informed consent.

But this analysis leaves some difficult ethical issues still to be considered. The reparative urge foregrounds a different set of ethical questions about the socio-moral meaning of the generation of spare embryos and the act of donation. For example, the perceived need for reparation that appears to drive some of the Swiss participants' donation choices arises because people felt some sense of wrongdoing at creating embryos that are not used for pregnancy. The spirit of the Swiss legal framework strongly reinforces the sense that the occurrence of embryos not used for pregnancy is to be considered as wrong. From this point of view, one possible conclusion could be that the felt desire for reparation is in fact an ethically appropriate response: if the act of deliberately creating an embryo is a morally significant one, which needs to be justified by the good of its intended outcome (pregnancy), then not using it for the purpose that justifies it does indeed present a genuine ethical difficulty. On the other hand, the novelty of surplus embryos in the Swiss legal and social context (Scully and Rehmann-Sutter 2006) meant that many patients would have been unaware at the time of their IVF of the possibility of generating a surplus embryo. Moreover, in most cases there were perfectly valid clinical or legal reasons why the embryos could not be transferred, which fully justified the failure to use them as originally intended. That these factors were not in the participants' control arguably means there is less reason for a sense of wrongdoing. The Swiss participants were quite aware of the valid reasons why their embryos could not be transferred, and yet some of them *still* said that they had fallen short of some moral standard. We suggest that this persistent unease (which does not

appear so prevalent in the U.K. material) in part reflects Switzerland's prevailing sociocultural norms about ART. These are captured in Swiss legislation's highly defensive attitude toward embryos in general and the generation of surplus embryos in particular. Swiss law operates from the presumption that a surplus embryo is an *exceptional* event that will happen only through the failure of regulation and practice specifically set up to prevent it (Porz et al. 2008). In addition, as we discussed earlier, the generation of surplus embryos is still an unfamiliar social practice and the role of the embryo donor is one that lacks widespread cultural recognition. In the Swiss context of legal exceptionalism, then, producing one of these culturally unfamiliar entities may more readily be understood as something "wrong" for which reparation is in order. In the more permissive cultural and legislative context of the United Kingdom, although some interviewees expressed guilt about other aspects of the process (for example, inappropriate styles of speech about embryos), there was no sense that not using the embryos as intended *in itself* constituted a moral failing. If our interpretation is correct, as the creation of surplus embryos becomes normalised in Swiss society and the role of embryo donor becomes normalised in both the U.K. and Swiss (and other) societies, there will be a shift in ideas about the moral meaning of surplus embryos, and this should be empirically testable.

For the majority of the participants in Switzerland and the United Kingdom who chose to donate their surplus embryos, donation decisions were not driven by a reparative urge but by the feeling that donation expressed solidarity with research and/or other patients. What our empirical work shows is that gratitude to an individual must be distinguished from a solidarity-based desire to "give something back" to medical research. However, this does not necessarily mean that solidarity-based reciprocity has no relevant impact on the capacity for voluntary consent. One possible consequence, for example, is that if potential donors feel *solidarity* with the research enterprise, or with present and future patients, then they might also experience an *obligation* to support it. However, in all three studies there were people who chose *not* to donate (about half of the Swiss interviewees did not donate, while in the United Kingdom approximately 46 percent of those asked have been shown to opt against donation [Choudhary et al. 2004]), which

suggests either that there is no sense of obligation, or that it is neither universal nor irresistible.

There is a second problem if solidarity-based reciprocity is taken as something to be prevented. If there is a risk that gratitude felt by an *individual* could influence donation decisions, then the risk can be minimised by separating IVF and stem cell research physically and procedurally, as bioethicists have suggested and some clinics and guidelines have implemented. But if instead there is a desire to benefit research or to show solidarity with collective “others” rather than an individual, then what sort of physical or procedural barriers could be set up to prevent it having an influence? There are further theoretical questions to be explored here about the assumption that contextual emotions such as gratitude or solidarity compromise the decision to donate. The situation in which donation of a surplus embryo is a possibility comes about as a result of a variety of social, cultural, political, legal, and emotional features that combine to make the situation what it is. It will be important to identify carefully the features that are *constitutive* of the situation of having a surplus embryo (including a sense of solidarity to similar others, emotional bonds with the embryo that change over time, regret over the failure to use all embryos for pregnancy, and so on) and to consider whether these constitutive features can or should also be treated as factors that compromise the responsible, autonomous decision-making capacity of the people involved. This introduces the question of the extent to which any decision to donate can be detached from its context and the contextual factors that shape how people respond to donation requests.

Finally, we should not forget that the possibility that some donors misunderstand the *kind* of research they are donating to raises some ethical difficulty. It means that donors may be deciding for donation out of a *misplaced* sense of solidarity—a different ethical problem.

The deliberative processes of the donor participants in our three studies incorporated their appreciation of the particular moral value of their own embryos and of the value of biomedical research. These deliberations are complex, and the participants’ own dependency on pre-existing medical research and their affiliation with others in similar situations must be recognised, we suggest, in order to understand how they might configure donation as a means to cope with the moral ambivalence of the situation in which they find

themselves. Their decisions are not driven by some unacknowledged sense of debt, but rather are responsive to the emerging social and moral reality of embryo donation in the first decade of the 21st century.

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References

- Banks, S., J.L. Scully, and T. Shakespeare. 2006. Ordinary ethics: Lay people’s deliberations on social sex selection. *New Genetics and Society* 25(3): 289–303.
- Becker, L.C. 1986. *Reciprocity*. London: Routledge and Kegan Paul.
- Charmaz, K. 2006. *Constructing grounded theory: A practical guide through qualitative analysis*. London: Sage.
- Choudhary, M., E. Haimes, M. Herbert, M. Stojkovic, and A.P. Murdoch. 2004. Demographic, medical and treatment characteristics associated with couples’ decisions to donate fresh spare embryos for research. *Human Reproduction* 19(9): 2091–2096.
- de Lacey, S. 2003. Decisions for the fate of frozen embryos: Fresh insights into patients’ thinking and their rationales for donating or discarding embryos. *Human Reproduction* 22(6): 1751–1758.
- Deckers, J. 2007. An analysis of the arguments underpinning U.K. embryonic stem cell legislation on the embryo’s status. *Journal of Stem Cells* 2(1): 47–62.
- Franklin, S. 2006. Embryonic economies: The double reproductive value of stem cells. *BioSocieties* 1(1): 71–90.
- Guenin, L.M. 2008. *The morality of embryo use*. Cambridge: Cambridge University Press.
- Guralnik, D.B. 1971. *Webster’s new world dictionary*. Nashville: Southwestern.
- Haimes, E., and J. Luce. 2006. Studying potential donors’ views on embryonic stem cell therapies and preimplantation genetic diagnosis. *Human Fertility (Cambridge)* 9(2): 67–71.
- Haimes, E., and K. Taylor. 2009. Fresh embryo donation for human embryonic stem cell (hESC) research: The experiences and values of IVF couples asked to be embryo donors. *Human Reproduction* 24(9): 2142–2150.
- Haimes, E., and K. Taylor. 2011. The contributions of empirical evidence to socio-ethical debates on fresh embryo donation for human embryonic stem cell research. *Bioethics* 25(6): 334–341.
- Haimes, E., R.C. Porz, J.L. Scully, and C. Rehmann-Sutter. 2008. “So, what is an embryo?” A comparative study of the views of those asked to donate embryos for hESC research in the U.K. and Switzerland. *New Genetics and Society* 27(2): 113–126.
- Hofmann, B., J.H. Solbakk, and S. Holm. 2006. Teaching old dogs new tricks: The role of analogies in bioethical analysis and

- argumentation concerning new technologies. *Theoretical Medicine and Bioethics* 27(5): 397–413.
- Hug, K. 2008. Motivation to donate or not donate surplus embryos for stem-cell research: Literature review. *Fertility and Sterility* 89(2): 263–277.
- Mauss, M. 2001. *The gift: The form and reason for exchange in archaic societies*. Trans. W.D. Halls. New York: Routledge. Originally published as *Essai sur le don. Forme et raison de l'échange dans les sociétés archaïques* (Paris: Presses Universitaires de France 1950).
- McLeod, C., and F. Baylis. 2007. Donating fresh versus frozen embryos to stem cell research: In whose interests? *Bioethics* 21(9): 465–477.
- Mitzkat, A., E. Haimes, and C. Rehmann-Sutter. 2010. How reproductive and regenerative medicine meet in a Chinese fertility clinic. Interviews with women about the donation of embryos to stem cell research. *Journal of Medical Ethics* 36(12): 754–757.
- Moller, M. 2009. Human embryonic stem cell research and the discarded embryo argument. *Theoretical Medicine and Bioethics* 30(2): 131–145.
- Moody, M. 2008. Serial reciprocity: A preliminary statement. *Sociological Theory* 26(2): 130–151.
- Parry, S. 2006. (Re)constructing embryos in stem cell research: Exploring the meaning of embryos for people involved in fertility treatments. *Social Science & Medicine* 62(10): 2349–2359.
- Porz, R.C., P. Bürkli, G. Barrazetti, J.L. Scully, and C. Rehmann-Sutter. 2008. A challenged choice: Donating spare embryos to stem cell research in Switzerland. *Swiss Medical Weekly* 138(37–38): 551–556.
- Roberts, C., and K. Throsby. 2008. Paid to share: IVF patients, eggs and stem cell research. *Social Science & Medicine* 66(1): 159–169.
- Scully, J.L., and C. Rehmann-Sutter. 2006. Creating donors: The 2005 Swiss law on donation of “spare” embryos to hESC research. *Journal of Bioethical Inquiry* 3(1–2): 81–93.
- Scully, J., C. Rehmann-Sutter, and R. Porz. 2010. Human embryos: Donors’ and non-donors’ perspectives on embryo moral status. In *The “healthy” embryo: Social, biomedical, legal and philosophical perspectives*, ed. J. Nisker, F. Baylis, I. Karpin, C. McLeod, and R. Mykitiuk, 16–31. Cambridge: Cambridge University Press.
- Smith, J.A., P. Flowers, and M. Larkin. 2009. *Interpretative phenomenological analysis: Theory, method and research*. London: Sage.
- Svendsen, M.L., and L. Koch. 2008. Unpacking the “spare embryo”: Facilitating stem cell research in a moral landscape. *Social Studies of Science* 38(1): 93–110.
- Waldby, C. 2000. *The visible human project: Informatic bodies and posthuman medicine*. London: Routledge.
- Waldby, C., and R. Mitchell. 2006. *Tissue economies: Blood, organs, and cell lines in late capitalism*. Durham: Duke University Press.
- Watkins, P.C., J. Scheer, M. Ovnick, and R.D. Kolts. 2006. The debt of gratitude: Dissociating gratitude and indebtedness. *Cognition and Emotion* 20(2): 217–241.