

# Made-to-Order Embryos for Sale — A Brave New World?

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Embryo donation (also known as embryo adoption) is the compassionate gifting of residual cryopreserved embryos by consenting parents to infertile recipients. At present, only a limited number of such transactions occur. In 2010, the last year for which U.S. data were available, fewer than 1000 embryo donations were recorded. These acts of giving, unencumbered by federal law, are being guided by a limited number of state laws. Moreover, the practice is sanctioned by professional societies, such as the American Society for Reproductive Medicine, subject to the provision that “the selling of embryos per se is ethically unacceptable.”<sup>1</sup> As such, the not-for-profit donation of existing embryos by consenting parents comports with a triad of commonly held ethical attributes. First, donated embryos are not sold for profit. Second, donated embryos are (by original intent) generated for self-use. Third, donated embryos are the product of an unambiguous parental unit and as such are transferable. All told, embryo donation constitutes an established if limited component of present-day assisted reproduction.

## Embryo Banks

The proliferation of commercial gamete sources (e.g., sperm and oocyte banks) has opened the door to a made-to-order embryo industry in which embryos are generated with a commercial transaction in mind. This prospect of a for-profit embryo bank is no longer theoretical. Indeed, as recently as November 2012, the *Los Angeles Times* reported on one such clinic that “sharply cuts costs by creating a single batch of embryos from one oocyte donor and one sperm donor, then divvying it up among several patients.”<sup>2</sup> The report went on to state that “the clinic, not the customer, controls the embryos, typically making babies for three or four patients while paying just once for the donors and the laboratory work.”<sup>2</sup>

At present, the legal fabric relevant to the sale of embryos is limited. Since there is no federal law on the subject — the National Organ Transplant Act does not apply to gametes or embryos<sup>3</sup> — the practice appears to be legal in all but two states (a third is more ambiguous). In Louisiana and Florida, the sale of embryos for reproductive purposes as “valuable consideration” (i.e., beyond reimbursement for costs) has been explicitly rendered illegal.<sup>4</sup> New York, in turn, prohibits the creation of embryos from donor gametes for reproduction except on “the request of a specific patient who intends to use such embryos for her own treatment,”<sup>5</sup> which might be read to prohibit made-to-order embryo banks, though the language is more ambiguous. In this Sounding Board article we examine the legal and ethical issues raised by made-to-order embryos for sale, evaluate arguments for and against the practice, and recommend that state legislatures and professional organizations collaborate to devise legislative solutions to the thorniest challenges herein identified.

## For-Profit Embryo Sale versus Nonprofit Donation

The most obvious distinction between embryo donation and the sale of made-to-order embryos is the fact that the latter constitutes a for-profit transaction in which embryos are being treated as a profit-generating commodity. In light of the above, the ethics of selling made-to-order embryos could well be called into question. Indeed, it could be advanced that the sale of embryos is more troubling than the sale of gametes.

First, it might be postulated that the sale of embryos will crowd out embryo donation and in so doing exclude recipients of limited means. However, at present, there is no evidence that this will occur. Moreover, given the limited availability of donor embryos, further diminution of this pool

appears to be inconsequential.

Second, it could be argued that individuals will be coerced or exploited or unduly induced into selling gametes in order to form embryos. However, these concerns seem largely the same regardless of whether gametes are used to create embryos at the behest of prospective parents or by a commercial entity.

Third, it could be posited that the sale of embryos denigrates the value of reproduction by turning it into a commercial enterprise. To differentiate the sale of embryos from the sale of gametes, one would need to show that it is more corrupting of our views of reproduction than is the sale of gametes. It is unclear, however whether this argument is an empirical claim about attitude modification (that prohibition is justified to avoid the undesirable consequence of changes of attitudes) or a principled argument (that prohibition is justified even if undesirable consequences do not follow, because the practice is intrinsically wrong) and how either might be proven.<sup>6</sup> Furthermore, the argument that the sale of embryos denigrates reproduction may be incompatible with views held by supporters of reproductive rights and of human embryonic stem-cell therapies. In particular, it may be difficult to claim that respect for personhood requires that the sale of embryos be prohibited at a time when parentally sanctioned embryonic destruction (with or without the generation of a human embryonic stem-cell line) is being practiced. Even if one believes that embryos deserve special respect not granted to gametes, it is far from clear why the sale of embryos to facilitate family building is any more contrary to that respect than the destruction thereof.

Finally, it would be wrong to equate the sale of embryos with the patently illegal sale of children. The latter involves potential harm to an already existing child. The former involves choosing whether particular children will be produced or not, and the practice is more similar to the sale of gametes than the sale of children. Other issues — such as concern about accidental incest, in which children traceable to the same embryo batch later meet and become romantically involved — apply equally to embryo donation and to gamete sale more generally. In this context, the same potential solutions (e.g., registries, limitations on the number of children attributable to the same genetic parents) could be given consideration.

## **Existing versus Newly Created Embryos**

Another important distinction between embryo donation and embryo sale is the reliance on existing surplus embryos as distinct from newly created counterparts. To some observers, the latter may prove unacceptable because it dehumanizes reproduction, either by turning it into manufacturing or by distorting the parent–child relationship by providing parents with overweening control over genetic traits with the oppressive psychological parenting pressures that go with such control. However, it is not immediately apparent whether the generation of new embryos (possibly with limited preselected traits) is all that different from ordering the constituent gametes replete with particular desired attributes. Indeed, there may be fewer eugenic overtones or concerns about oppressive parental expectations, in that parents are buying one embryo from a batch of already made embryos, as compared with the more bespoke practice of ordering specific desired gametes.

Furthermore, it is not clear how the sale of made-to-order embryos differs from the sale of oocytes for the manufacture of embryos by somatic-cell nuclear transfer for stem-cell derivation, as is presently sanctioned by New York State.<sup>3</sup> Indeed, one might think that this practice — creating embryos for the purpose of destroying them to derive stem cells — is more ethically challenging than the notion of creating embryos for the purpose of alleviating infertility.

## **Legal Parentage of Made-to-Order Embryos**

Finally, there is the question of the parentage of made-to-order embryos. Existing state (statutory and case) law establishes (if imperfectly) legal parentage in the context of gamete donation. Similar guidance has been provided (again imperfectly) for the disposition of cryopreserved embryos whose parentage is being contested in the course of a legal divorce. In contrast, however, state statutes relevant to embryo donation are few and far between. Oklahoma requires physicians to file with the court explicit consents from both the donor and recipient parties to ensure the orderly transfer of parental rights and obligations.<sup>7</sup> Georgia, in turn, requires that the transfer of legal parentage be accomplished through a written contract and that the recipients petition the court for an order of adoption to formalize the transaction.<sup>7</sup> It is unclear whether either of these schemes can be adapted to the transfer of the legal parentage of made-to-order embryos. Indeed, in this circumstance, the sole potential guardian is the very clinic responsible for the generation and the sale of the embryos in question.

However, uncertainties inevitably abound. What, for example, would happen to made-to-order embryos if the relevant clinic goes bankrupt? What would happen to such embryos if a gamete provider objects to the sale after fertilization or demands that the embryos be returned or destroyed?<sup>8</sup> These unanswered legal questions give us the most pause about mainstreaming made-to-order embryos. Coordinated efforts by legislators and professionals will be required if this legal void is to be addressed.

It is readily apparent why the prospect of made-to-order embryos for sale may give rise to apprehension. However, viewed through a legal and ethical lens, the concerns raised by this potentiality appear to be similar to those associated with widely accepted and more common reproductive technologies, such as the sale of gametes. What is new and unique here is the lack of clear legal guidance as to the parentage of the embryos in question. Joint efforts by state legislatures and professional organizations will be required to forge appropriate legislation if made-to-order embryos for sale are to become a practicable reality.

[Disclosure forms](#) provided by the authors are available with the full text of this article at NEJM.org.

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