SciAm Perspectives

Designing Rules for Designer Babies

More oversight is needed to prevent misuse of new reproductive technologies

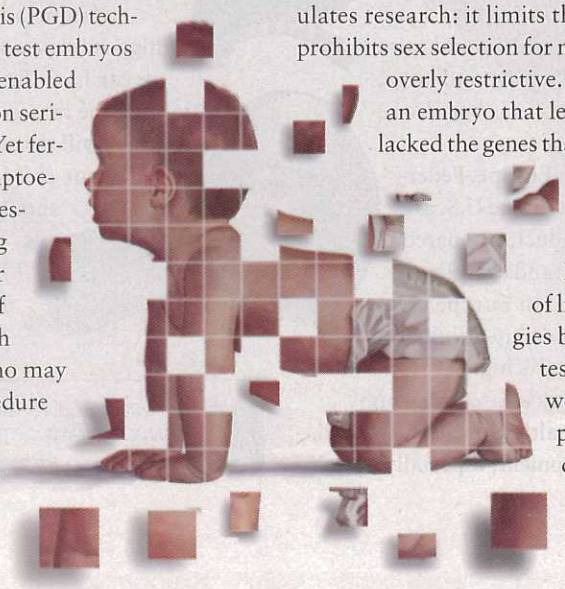
BY THE EDITORS

On March 3 the cover story of the *New York Daily News* trumpeted a simple imperative to "Design Your Baby." The screaming headline related to a service that would try to allow parents to choose their baby's hair, eye and skin color. A day later the Fertility Institutes reconsidered. The organization made an "internal, self regulatory decision" to scrap the project because of "public perception" and the "apparent negative societal impacts involved," it noted in a statement.

The change of heart will do nothing to stymie the dawning era of what the article called "Build-A-Bear" babies. The use (and abuse) of advanced fertility technology that evokes fears of Gattaca, Brave New World and, of course, the Nazis' quest for a blonde, blue-eyed race of Aryans continues apace. A recent survey found that about 10 percent of a group who went for genetic counseling in New York City expressed interest in screening for tall stature and that some 13 percent said they would be willing to test for superior intelligence. The Fertility Institutes is still building the foundation for a nascent dial-a-trait catalogue: it routinely accepts clients who wish to select the sex of their child.

The decision to scrap the designer baby service came just a few weeks after Nadya Suleman, a single, unemployed California mother living on food stamps, gained notoriety after giving birth to octuplets through in vitro fertilization. The Suleman brouhaha showed that even routine uses of reproductive technologies can be fraught with issues that bear on ethics and patient safety.

The preimplantation genetic diagnosis (PGD) technique used by the Fertility Institutes to test embryos before implantation in the womb has enabled thousands of parents to avoid passing on serious genetic diseases to their offspring. Yet fertility specialists are doing more than tiptoeing into a new era in which medical necessity is not the only impetus for seeking help. In the U.S., no binding rules deter a private clinic from offering a menu of traits or from implanting a woman with a collection of embryos. Physicians who may receive more than $10,000 for a procedure serve as the sole arbiters of a series of thorny ethical, safety and social welfare questions. The 33-year-old Suleman already had six children, and her physician implanted her with six embryos, two of which split into twins. American Society for Reproductive Medicine (ASRM) voluntary guidelines suggest that, under normal circumstances, no more than two embryos be transferred to a woman younger than 35 because of the risk of complications.



MATT COLLINS

Of course, any office consultation with a fertility doctor will likely neglect the nuances of more encompassing ethical dilemmas. Should parents be allowed to pick embryos for specific tissue types so that their new baby can serve as a donor for an ailing sibling? For that matter, should a deaf parent who embraces his or her condition be permitted to select an embryo apt to produce a child unable to hear? Finally, will selection of traits perceived to be desirable end up diminishing variability within the gene pool, the raw material of natural selection?

In the wake of the octuplets' birth, some legislators made hasty bids to enact regulation at the state level—and one bill was drafted with the help of antiabortion advocates. The intricacies of regulating fertility technology requires more careful consideration that can only come with a measure of federal guidance. As part of the push toward health care reform, the Obama administration should carefully inspect the British model.

Since 1991 the U.K.'s Human Fertilization and Embryology Authority (HFEA) has made rules for in vitro fertilization and any type of embryo manipulation. The HFEA licenses clinics and regulates research: it limits the number of embryos implanted and prohibits sex selection for nonmedical reasons, but it is not always overly restrictive. It did not object to using PGD to pick an embryo that led to the birth of a girl in January who lacked the genes that would have predisposed her to breast cancer later in life.

HFEA may not serve as a precise template for a U.S. regulatory body. But a close look at nearly two decades of licensing a set of reproductive technologies by the country that brought us the first test-tube baby may build a better framework than reliance on the good faith of physicians who confront an inherent conflict of interest. ■