

# The creation of part-human, part-monkey embryos will discomfit many, but the potential benefits outweigh the risks

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Physics is famous for mind-bending ideas. Subatomic particles can be in many places at once. The flow of time depends on how fast you are moving. But because such ideas are confined to the realm of the invisibly tiny or the inhumanly vast, most people regard them as little more than diverting curiosities.

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Biology has mind-bending ideas, too. Since they may concern the everyday world of living bodies, their impact is often felt much more viscerally. One example is “chimeras”, organisms which, a bit like the mythological beast, are formed from cells of two distinct species. Scientists have already produced goat-sheep and mouse-rats. Now a group of American, Chinese and Spanish researchers has reported significant progress in the quest to create chimeras using human cells—in this case, combining them with [cells from monkeys to form functioning embryos](#).

It is another example of humanity’s growing power to tinker with the basics of life, a power which makes many people uncomfortable. The work leaves the very idea of a species looking at least a little blurry at the edges. Experiments involving human cells can break deep-seated taboos about human dignity, human exceptionalism and—among the religious—stir up worries about interfering with God’s creation.

There are also more practical concerns. The human-monkey embryos were not intended to grow to maturity. But it is right to wonder what might have happened if they had—and what should be done if, or when, someone decides to try. What is the moral and legal status of an organism with one human genome and one non-human one? What effect, if any, might the human cells have on the animal’s brain? Mindful of such worries, many places, including America and Britain, tightly regulate what is allowed. Much of the latest work was done in China.

Despite those concerns, the potential benefits outweigh the risks. Such research should always be done cautiously, and be properly monitored. But it should also be encouraged, because the rewards it brings could turn out to be significant. Chimeric embryos may offer a way around ethical problems that make experiments on human embryos difficult. That could lead to new treatments for congenital diseases. This particular bit of research was inspired by a desire to grow human organs in the bodies of animals, from where they could eventually be used for transplants. Easing the long-standing worldwide shortage of transplantable organs could save many lives. In America alone, more than 100,000 people are on transplant waiting-lists.

The best way to ensure that such research can proceed is to talk about it with the public, not just among scientists and expert regulators. Ethical debates around chimeras have been going on for years, but mostly in scientific journals and academic conferences—places where outsiders rarely venture. If dramatic demonstrations of this kind of scientific advance take people by surprise they are likely to create a backlash. Scientists should also work to ensure that international rules are harmonised, to the extent that is possible.

History offers grounds for optimism. Many biological technologies that were at first decried as reckless meddling with the natural order of things ended up proving much less frightening in practice than they once seemed in theory. In vitro fertilisation was once seen as unnatural; these days it is routine, at least in the rich world. Genetically modified crops provoked street protests and dire warnings about “Frankenfoods”. Billions of meals later, the technology has proved both safe and effective. Ultimately, however, scientists need to convince not just each other but the public, too.