

# Scientists want debate on animals with human genes

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By [Kate Kelland](#)

LONDON (Reuters) - A mouse that can speak? A monkey with Down's Syndrome? Dogs with human hands or feet? British scientists want to know if such experiments are acceptable, or if they go too far in the name of medical research.

To find out, Britain's Academy of Medical Sciences launched a study Tuesday to look at the use of animals containing human material in scientific research.

The work is expected to take at least a year, but its leaders hope it will help establish guidelines for scientists in Britain and around the world on how far the public is prepared to see them go in mixing human genes into animals to discover ways to fight human diseases.

"Do these constructs challenge our idea of what it is to be human?" said Martin Bobrow, a professor of medical genetics at Cambridge University and chair of a 14-member group looking into the issue.

"It is important that we consider these questions now so that appropriate boundaries are recognized and research is able to fulfill its potential."

Using human material in animals is not new. Scientists have already created rhesus macaque monkeys that have a human form of the Huntingdon's gene so they can investigate how the disease develops; and mice with livers made from human cells are being used to study the effects of new drugs.

But scientists say the technology to put ever greater amounts of human genetic material into animals is spreading quickly around the world -- raising the possibility that some scientists in some places may want to push boundaries.

"There is a whole raft of new scientific techniques that will make it not only easier but also more important to be able to do these cross-species experiments," Bobrow said.

A row erupted in Britain last year over new laws allowing the creation of human-animal embryos for experimentation.

The row drew interventions from religious groups, who said such experiments pervert the course of nature, and scientific leaders, who say they are vital to research cures for diseases. One Catholic cardinal branded such work "Frankenstein science."

Bobrow said he and his colleagues were keen to avoid such frenzied debate again and hoped that by acting now they would be able to inform discussion rather than react to it.

But they said the discussions over human-animal embryos, which involve putting human DNA into cells derived from animals to produce stem cells, were "only half the conversation" and did not look at animals altered with human cells.

"They really didn't deal ... with a much broader range of issues like how far is it reasonable to try to mimic important human traits in animals," Bobrow said. "There are problems there in terms of social acceptance."

Bobrow said there was a "sort of understanding" within the scientific community that "as you get close to 50/50 mix" of human and animal material, the boundaries are near, but he said laws were vague at best.

"Do most of us care if we make a mouse whose blood cells or liver are human? Probably not," he said. "But if it can speak? If it can think? Or if it is conscious in a human way? Then we're in a completely different ballpark."