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EDITORIAL

Gene by Gene

Over the years, scientists have developed many strains of genetically modified mice, many of which incorporate human versions of similar mouse genes. But there is something different in a recent experiment performed at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany. Scientists there have created a strain of mouse that contains the human variant of a gene, called FOXP2, associated with several critical tasks, including the human capacity for language.

What makes this different is how fundamentally human — and unmouse-like — language really is. Something essential to us, something defining in our species, has been implanted in a rodent.

FOXP2 happens to work pretty well in mice. Those with the new gene in place do in fact communicate differently with each other, by using slightly lower-pitched ultrasonic whistles. The nerve cells they grow in one region of the brain are also more complex than those in unaltered mice. These may sound like modest results, but they are striking. They help clarify the function of FOXP2, and, in doing so, they help scientists better understand what constellation of genes produces the capacity for language in humans and, thus, how we differ from our nearest primate relative, the chimpanzee.

What takes some getting used to is the idea of exploring what humanness really is — how complex and how little understood — by transplanting our genetic signatures, gene by gene, into other species. And there is another question hovering over this experiment: Just how alien to themselves do these transgenic mice become? To that question, scientists are bound to find no answers, until, perhaps, mice can speak for themselves.

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