

Human-Chimp Hybrids

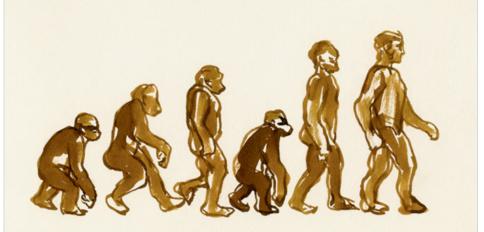


Illustration by Leanne Shapton

Human-chimp hybrids.

By STEPHEN MIHM
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On hearing of Darwin's theories, the wife of the bishop of Worcester supposedly exclaimed: "Descended from apes? My dear, let us hope that it is not true." Now the geneticist David Reich of the Broad Institute at <u>Harvard</u> and <u>M.I.T.</u> has advanced a theory that the bishop's wife would have found even more disturbing: human and chimp ancestors, after diverging into separate species millions of years ago, came back together and interbred.



Reich came up with the idea after comparing the genes of humans and chimps. When two species split from a common ancestor, their genes will continue to diverge, or mutate, at a regular clip over time. Reich and his team of researchers, after comparing some 20 million base pairs (the "rungs" of DNA) from humans and chimps, found that different genes began diverging at different times — with genes located on the X chromosome of humans and chimps parting ways most recently.

Reich's explanation is that the two populations interbred on repeated occasions over hundreds of thousands, if not millions, of years, producing hybrids of protohumans and protochimps. The male hybrids were likely to be sterile, but Reich posits that the female hybrids (with their two X chromosomes) were able to mate with males of one of the

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original species. This would explain why genes on the X chromosome of humans and chimps diverged more recently.

It's a radical concept. Conventional wisdom holds that the development of separate species happens quickly, most often when populations become separated by a geographical barrier. Even if these groups meet again and manage to mate before diverging too far from one another, their offspring will be unfit and die out. Or so the thinking goes.

By contrast, Reich argues that hybrids could play an important and positive role in speciation, introducing advantageous traits into a gene pool — including ours. If Reich is correct, the customary image of the human family tree, with its neat and discrete divisions, should be replaced by another metaphor: a dense and impenetrable thicket of branches concealing countless acts of interspecies sex. It's enough to make a bishop's wife blush.

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