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DOI: 10.1159/000501434**"Have You Ever Seen A Chimpanzee Getting a Haircut?" Answering a Stimulating Question**

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Dear Editor,

The apparently foolish question why chimpanzees do not need a haircut has been raised a few years ago by Neufeld and Conroy [1]. They provided even an answer: the hair that grows on the head of the chimpanzees, and other mammals for that matter, is not scalp hair but just the extension of their fur. Why then do humans have such long scalp hair; and beard, for that matter? The logical answer is that they must be the result of a genetic mutation that allowed them to grow apparently unlimited.

The issue is only apparently futile. Not many mammals let their scalp hair grow that long. Lions have a mane; horses may exhibit a mane that reaches their knees. Some monkeys have sort of a beard: *Macacus silenus* or *Callicebus caquetensis*, or a subspecies of *Sanguinus imperator* (*subnigrescens*), or *Cercopithecus neglectus*. No mammals, however, display a beard as long as 17 feet 5 inches such as the one that can be admired at the Smithsonian Institute in Washington. It belonged to a Norwegian who let it grow unrestrained.

Neufeld and Conroy [1] report that the only genetic difference from other primates they found in the literature that may justify the mutation is a segment of DNA known as *PhHaA* that, in apes (*gHaA* and *cHaA* in gorilla and chimpanzees, respectively), generates a keratin protein. The same sequence is preserved in humans but is inactivated; it is a pseudogene. Pseudogenes have been considered "genomic fossils" or "junk DNA" so far; however, though they are not fully functional, they are now regarded as performing other, perhaps regulatory, functions. According to Neufeld and Conroy [1], the gene inactivation that led to *PhHaA* was responsible for the inordinate growth of hair and beards.

In Neufeld and Conroy's opinion, getting hair instead of fur generated several problems for hominids. They speculated that long hair would have made their head hotter, reduced their swimming speed, provided inaccurate information on gender, and offered a convenient haven for parasites.

At this point, a simple question should be answered: how long can straight head hair grow? And what about kinky hair?

We all know that "normal" hair grows at 0.4 mm/day, and that scalp hair cannot grow for any longer than 6 years, given that there are people whose scalp hair attain their feet. The Web, however, is plenty of pictures of very long hair, such as that of an Indian gentleman that is reported to reach 19.8 m, or those of an American girl who let them attain 16 m. Such lengths are implausible given that, at the canonic rate, a century would be needed to stretch out 14 m. There are even astonishing 6-m-long nails. Are they all fakes or is our scientific appraisal of the issue fundamentally wrong?

The question may have major anthropological implications. Mutations may have different effects depending on when they occur. If the mutation occurred when hominids had stone instruments, having very long hair had no importance at all as they could have been easily clipped. If it occurred instead when the hominid was still inhabiting trees, it could have played a major role in the evolutionary course.

In fact, if scalp hair can grow forever, early hominids must have had more severe problems than those proposed by Neufeld and Conroy [1]. How, for example, did they manage to swing from tree limb to tree limb as most apes do?

Actually, *PhHaA* seems to have appeared only less than 240,000 years ago [2], when the living human species in Africa was *Homo heidelbergensis*, who not only was ready to migrate to Europe and Asia but was also able to produce suitable stone instruments and could have easily confronted the severe handicap of having monster scalp hair and beards.

An alternative hypothesis may be that getting beards and hair instead of fur occurred 4–5 million years ago, when early hominids were still living on the trees and had not yet developed stone tools. Having appendages of that gigantic length was so deleterious a mutation to induce them to take the supreme decision of descending into the inhospitable savanna.

Disclosure Statement

The author declares no conflicts of interest.

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