

Re: chimps stronger than humans

Source: <http://sci.tech--archive.net/Archive/sci.anthropology.paleo/2009-04/msg00166.html>

- *From:* "James Howard" <jmh.anthropogeny.com@xxxxxxxxx>
 - *Date:* Fri, 10 Apr 2009 15:48:05 -0500
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First, thank you for your thoughtful reply.

I will answer these as a group; going back and forth just confuses matters; well it confuses me when I read a mixed up post / response thread. My post and your responses are all below this for reference.

No, I do not say "cold equals increased growth of brain and body." I say that higher DHEA allows living in the cold and extra DHEA increases growth of brain and body. I also suggest that situations that increase testosterone, especially when boxed in, may cause an increase in overall size. This is how I explain the very large gorillas and orangs that occurred in the tropics. The very large difference in males and females in these groups is due to the increased male testosterone. This increase occurs without the effects of cold causing increased DHEA. With that in mind, let us look at Boxgrove Man. Boxgrove Man was found in England, a peninsula at the time. I think it is very possible that Boxgrove Man increased size may be due to the same effect of a group being relatively isolated which increased testosterone and there was enough cold to select for DHEA. ...so Boxgrove Man became very large with the combined effect of testosterone increase and DHEA increase.

The Bergmann rule refers to animals actually being smaller farther north. I explained this effect by first suggesting the large mammals got big as selection for DHEA occurred. I then suggested that living farther north will require more DHEA for warmth generation. ...less DHEA for growth and more for warmth reduces overall growth. Boxgrove man lived in "relative" warmth and later, Neandertal, lived more during the ice ages so I suggest their smaller stature may be due to the use of some of their DHEA for warmth, so Neandertals were smaller. Again, I think the tropics produced some large animals as a result of increasing testosterone, that is, cold was not required.

Chimps and humans split off together. I suggest this is due to the increase in maternal testosterone which can be seen as less of a difference in size between male and female. Human evolution is driven by the appearance of increased maternal testosterone. Females gained in size rather than males being reduced in size during human evolution. This is why the male to female size difference was reduced. According to what I have posted here, increased maternal testosterone increases exposure of the fetal brain to maternal

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testosterone, which increases brain androgen receptors. This increases use of DHEA by the brain at the expense of body because of competition for available DHEA. (If one lives in the cold and gets bigger and moves north, the competition for DHEA between growth and warmth is due to the same competition.) So chimps differ from gorillas and orangs in this way. This did not occur in gorillas and orangs but together in the common ancestor of humans. This is why the chimps did not follow the pattern of gorillas; chimps' brain compete more for DHEA at the expense of the body.

"Lee Olsen" <paleocity@xxxxxxxxxxxx> wrote in message
news:8a1605f8-c3fb-49b0-9005-8769d5f2d9f9@xx
On Apr 10, 7:56 am, "James Howard" <jmh.anthropogeny....@xxxxxxxxxx>
wrote:

In reference to: > How does Neandertal, and Cro Magnon for that matter,
fit
into

this framework? Both had very large brains in hyper-robust bodies."

I think living in cold environments requires extra DHEA. The individuals who could not provide sufficient DHEA to provide resistance body temperatures, died. Extra DHEA would provide increased growth and development of the brain and body. (The next text is intended as further explanation.)

Your whole scenario is based on a false premis, i.e., cold equals increased growth of brain and body. Tom has made an excellent point, he just did not go back far enough in time for his example. The Boxgrove Man, Homo heidelbergensis, was bigger, taller, stronger, and also had a very large brain, ca. 1200 cc. He lived in a temperate interglacial climate, proven by lions and spotted hyenas. From then on Western European Neandertals got smaller (with St. C being a real whimp in size, being one of the last), so this makes your prediction of colder equals larger just backwards of what actually happened. Cro-Mags were another later input from Africa and the same cycle repeated itself.

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This principle may also explain why ice age animals grew larger.

Wrong again, Africa also lost some large Pleistocene animals during the extinction process.

However, if a species is in a position whereby testosterone may also be selected, then this increased testosterone may amplify the effects of cold-induced DHEA. Hence, the Neandertals exhibited exaggerated sizes, produced, I suggest, by the early groups being concentrated in specific, cold areas.

Nope, Neandertals favored southern, warmer, climates when available, they dealt with reindeer and mammoths only when they had to.

Concentration, I suggest, causes selection for testosterone. Since gorillas and orangutans are large and live in the tropics, I would think their increase in size is more of a testosterone effect.

Then after chimps and gorillas split, they BOTH live in temperate warm climates, why did chimps not follow your predicted pattern?

If anyone responds to this, they will probably mention "Bergmann' Rule." If an animal increases in size due to extra DHEA triggered by cold and reaches a limit in DHEA production, then the extra DHEA is used for warmth at the expense of size. So animals farther north become smaller as a result.

Chimps and H h demonstrate that you are not correct in your reasoning.

(Now, to answer another question likely to be generated by the foregoing, I think chimps are smaller than gorillas and orangs due to increased testosterone in the "common ancestor" of chimps and humans.

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But neither g/o/pan lived in a cold climate, you have it just backwards.

Tall humans and short ones lived in both warm and cold climates.

That is, the female in the common ancestor increased in testosterone which exposed the brains of their fetuses to increased testosterone. This began the process of producing a brain which competed better for available DHEA. Hence, chimps and humans produce more testosterone than gorillas and orangs but are smaller.) James Michael Howard

But above you claimed "I think living in coldgrowth and development of the brain and body"

According to this reasoning, gorillas/orangs should also have larger brains than chimps, and they don't. You have a non-starter hypothesis that explains nothing.