Re: Homo : glacials = more marine exploitation?

Source: http://sci.tech−archive.net/Archive/sci.anthropology.paleo/2009−02/msg00433.html

- *From*: spiznet <mark@xxxxxxxxxxx>
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On Feb 23, 2:12 am, rmacfarl <rmacf...@xxxxxxxxxxxxxxxx> wrote:

> On Feb 23, 5:57 pm, rmacfarl <rmacf...@xxxxxxxxxxxxxxxx> wrote:
>
> > On Feb 22, 9:10 pm, Marc Verhaegen <m_verhae...@xxxxxxxxx> wrote:
> >
> > > Neandertal diet was not dolphin−safe
> >
> > > Chris Stringer and colleagues (including Finlayson and
> > > Barton) have a paper
> > > in the current PNAS early bin describing Neandertal
> > > exploitation of marine
> > > mammals in the Gibraltar caves (Vanguard and Gorham's).
> > > The Neandertals left
> > > some seals and dolphin bones with cutmarks behind, along
> > > with a lot of
> > > mollusk shells.
> >
> > > When I pulled up the paper, it sounded very familiar to me,
> > > like I'd written
> > > about it before. And indeed, I had, although I hadn't posted
> > > the results. A
> > > couple of years ago I was doing some research on the
> > > Gibraltar caves and I
> > > ran across a website from Oxford covering the Gibraltar
> > > excavations....
> >
> > Credit where it's due, which means not to Marc. Anyone unfamiliar with

> the Belgian bonehead's esoteric vernacular could be fooled into thinking that that passage, which Marc posted without attribution, referred to work he had done himself. Of course, it didn't. The whole passage was written by John Hawks on his blog, from whence Marc cut & pasted it:
>
> http://johnhawks.net/weblog/reviews/neandertals/diet/gorhams−vanguard...
>
> Posting someone else's work under your own name without attribution Marc? That's called "plagiarism", didn't you know that? That would get you sacked instantly from an academic or journalistic posting. Good thing no university or science magazine have ever been misguided enough to give you a job...
>
> Ross Macfarlane

> And in case anyone should be wondering how Hawks regards the aquatic ape theory:
>
> http://johnhawks.net/weblog/topics/pseudoscience/aquatic_ape_theory.html

Here it is:

One of the most common arguments about human evolution on the Internet is whether hominids ever went through an "aquatic phase" in their evolution. The Aquatic Ape Theory proposes that such an aquatic phase, during which ancestral hominids relied on a water habitat, explains much of the distinctive anatomy of recent humans. Proponents of the Aquatic Ape Theory compare the predictions of their model with the predictions that they derive for a traditionalist model, which they term the "Savanna model". In their view, an aquatic phase provides a better explanation for many human characteristics that the savanna model finds difficult to explain.
For example, why do humans lack fur? Most anthropologists believe the lack of fur derives from selection associated with thermoregulation. In this account, humans are unlike most primates in using sweating as a significant source of evaporative heat loss. This system is efficient in humans because it exploits the latent heat of condensation to carry away much more heat than is possible through radiation, convection, or shade alone. But sweating would not work on a furry hominid, because evaporation from the fur does not carry away nearly the amount of heat lost by direct skin transfer.
The Aquatic Ape Theory rejects this hypothesis, noting that:

the mechanism of sweating in humans is especially wasteful of water−−a rare commodity in the hot savanna
other medium−sized mammals in the hot savanna environment do not use this mechanism of heat loss
the loss of fur has required the development of a significantly costly form of insulation for the human body, a relatively thick layer of subcutaneous fat
By this argument, the theory proposes that it makes more sense that humans developed hairlessness and their unique glandular system of sweating in an environment where water was both plentiful and continuously available.
Several other distinctive human features are treated by this hypothesis. Bipedalism itself is suggested for its value in wading into moderately deep bodies of water.
If the Aquatic Ape Theory explains so much, why do the majority of anthropologists not subscribe to it? It is hard to find a clear answer to this question on the Internet. Responses to the Aquatic Ape Theory both on Web sites and on Internet news groups tend to digress into the a number of specific topics that detract from an answer this question instead of answering it. Consider the following list of responses:
"Hominids leading into the water sources available to them would have nothing to protect them from crocodiles and other large predators."
"Paleontologists have never found fossil evidence of this aquatic ape.
"
"There may be gaps in the fossil record, but it is unlikely that those gaps will be filled by new primates and entirely different from any known form in their ecology."
Supporters of the Aquatic Ape Theory can provide answers to each of these questions. They can talk about the great quantity of littoral resources for a primate foraging along the seashore. They can talk about the rarity of crocodiles along the seashore and the failure of other land predators to pursue their prey into the waves. The can talk about the geological record of sea level changes, as the reason that geological strata that might contain these ancestors like inaccessible to paleontologists.
And they can continue to criticize the "Savanna model" as inadequate to explain human features−especially soft tissue characteristics. This process itself displays an element of the disingenuousness, considering that the fossil evidence increasingly suggests that hominids did not originate on the savanna at all. In fact all hominid sites earlier than around 3 million years appear to represent woodland of an open or closed nature. It appears quite evident now that our "descent from the trees" didn't take us out of the woods. As the present evidence continues to develop, the Aquatic Ape debate gets farther and farther from relevance.
But if all these issues are distractions, how can we explain the reluctance of anthropologists to seriously examine the Aquatic Ape Theory? Proponents of the theory tend to argue that this is more than blindness on the part of the paleoanthropological establishment. Instead, they argue, professional paleoanthropologists are engaged in a more or less deliberate conspiracy to exert their hegemonic control

over the field by a marginalizing alternative viewpoints.
In this, some proponents of the Aquatic Ape Theory take the same position as creationists, arguing that it is the dominant culture of science rather than the intrinsic value of current scientific ideas that excludes them from debate.
Like most other professional anthropologists, I am well aware that there is no active conspiracy under way to preclude strange ideas from scientific evaluation. In fact I have seen many strange ideas come down the pike over the years that received far more celebrity than notoriety. The history of new research in the field will show to any close observer the value of breaking with scientific norms. This is so much the case in the study of human evolution that has provoked published complaints on the part of senior scientists. But despite these grumblings, there is nothing that anyone can do to prevent the publication of credible research in the field, and little they can do to prevent the publication of incredible research. There is much more to be gained for young scientists in pushing a new or outlandish idea that has serious empirical support than in mindlessly following the dictates of the aging graybeards.

From this I think we can conclude at least something small: that many

anthropological eyes looking over the predictions of the Aquatic Ape Theory would have found by now some serious reasons to support it, if there were any.
But there is more than a small reason why the Aquatic Ape Theory is not believed by anthropologists. The large reason is parsimony. Evaluating the parsimony of hypotheses is a fundamental aspect of the scientific method. The idea is that hypotheses differ with respect to the kind of assumptions that the requires to make. Some hypotheses require a large number of assumptions, others require fewer assumptions. Some hypotheses require fairly extraordinary assumptions.
One of the characteristics of parsimony is the ability of a hypothesis to link many different effects with a single cause. It is under this qualification that the Aquatic Ape Theory appears very appealing. By positing a single assumption −− that as yet undiscovered hominids lived in a unique aquatic environment −− the theory is able to encompass the evolution of several different characteristics of the human body that otherwise would not appear to be tightly linked to each other. In other words, the hypothesis appears to be simple as an explanation for many different characteristics, requiring only one assumption (and its many associated effects) instead of a separate evolutionary explanation for every characteristic.
But this appeal ignores another fundamental characteristic of parsimony: a hypothesis that depends on one explanation is more parsimonious than a hypothesis that invokes multiple explanations. Consider the proposed "aquatic phase" of human evolution, which the Aquatic Ape Theory posits to explain human characteristics that are uncommon in land mammals. Certainly it makes sense that hominids would develop new anatomies to adapt to such an alien environment. But once those hominids returned to land, forsaking their aquatic homeland, the

same features that were adaptive in the water would now be maladaptive on land. What would prevent those hominids from reverting to the features of their land−based ancestors, as well as nearly every other medium−sized land mammal? More than simple phylogenetic inertia is required to explain this, since the very reasons that the aquatic ape theory rejects the savanna model would apply to the descendants of the aquatic apes when they moved to the savanna. This is far from trivial, since fossil hominids did inhabit open woodland starting by 6 million years ago, and did move to open savanna by 3 million years ago.
Nor can the theory hide behind the idea of exaptation. One might propose that the features that were originally adapted in the aquatic environment found new purposes when the formerly aquatic apes moved onto land. But each of these features still requires an adaptive explanation for why it would be maintained. And each of these adaptive explanations would probably be equally credible as an evolutionary hypothesis for the origin of the characteristics outside the aquatic environment.
In other words, the Aquatic Ape Theory explains all of these features, but it explains them all twice. Every one of the features encompassed by the theory still requires a reason for it to be maintained after hominids left the aquatic environment. Every one of these reasons probably would be sufficient to explain the evolution of the traits in the absence of the aquatic environment. This is more than unparsimonious. It leaves the Aquatic Ape Theory explaining nothing whatsoever about the evolution of the hominids. This is why professional anthropologists reject the theory, even if they haven't fully thought through the logic.

I couldn't have said it better myself!
−Spiznet
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