

Re: Bipedalism in different substrates

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From: Bob Keeter (rkeeter_at_earthlink.net)

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"Pauline M Ross" <pmross@ross-software.co.uk> wrote in message
news:jpade0pqqsrnn0m82s82ad9f9sc1c6o9sf@4ax.com...

> On Fri, 02 Jul 2004 23:27:20 GMT, "Bob Keeter" <rkeeter@earthlink.net>

> wrote:

>

> >8-) NO. Crossing rivers is simply not a driving factor in the evolution
of

> >zebras (in their case, mostly since ability in the water has so little to
do

> >with the drowning deaths). Zebras and wilderbeest drown because their

> >comrades essentially trample them to death in the wild crossing.

>

> Yes, Bob, and which ones are more likely to get trampled, the good

> swimmers or the less good? the first ones across or the ones in the

> middle of the pack? the ones who find a safe exit route on the far

> side or the ones who follow the crowd and find the bank slippery with

> mud? You cannot seriously propose that an event that occurs several

> times a year and causes multiple deaths is going to have no selective

> effect, surely?

If the multiple deaths are due to "luck of the draw" and which animals are tripped, stumble on the rocks in the stream, etc, etc, etc, I certainly would. If swimming ability would decrease the number of animals that fall down, get pushed down, or break a leg, then yes. If not, then no.

> >For all practical purposes, ALL mammals swim. You really have

> >to look hard to find a mammal that doesnt. As for red herrings,

> >the point you make is extremely valid. Occasional, inconsequential

> >(even if deadly) encounters with water will not force adaptations.

> >That much is valid beyond belief. So long as it is applied rigorously.

>

> I'm having trouble envisaging an event which is simultaneously

> inconsequential and deadly :-) As to the proposal that all mammals

> swim, I would put it this way: a conventionally quadrupedal mammal

> finds it relatively easy to swim because their standard method of

> locomotion converts easily to a swimming stroke. A zebra trotting into

> a river and finding itself out of its depth simply continues to 'trot'

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- > *in the water, and ends up swimming; a basic doggy-paddle is not that*
- > *different. And, I repeat, if the price of failure is drowning, there*
- > *will be selective pressure on swimming ability.*

Random events, in which the survivor and victim are randomly selected will not select for physical characteristics. And if another zebra jumps off the river bank onto the back of that already swimming zebra does it matter how much better of a swimmer either animal might be? 8-)

- > *[Re Potts' environmental selection paper]*
- > >> *[Pauline] But one of his difficulties is that he assesses habitat without taking*
- > >> *water into account. Even where it is clearly relevant eg in the*
- > >> *'riparian-woodland scavenging' model, he emphasises only the woodland*
- > >> *part.*
- > >
- > >*-) *Is that a problem for him, or a problem for you?*
- >
- > *It's a problem for him, of course, because he is missing a large*
- > *element of the picture. If you are discussing the influence of the*
- > *environment on human evolution, you should take *all* elements of that*
- > *environment into account, don't you think?*

Absolutely! Now we both agree that the presence of water is an irrefutable REQUIREMENT right? Its only in the ways that our ancient hominids would have exploited that resource. In my case, that ancient hominid would have drank his fill, in your case, the presence of water and his hypothetical exploitation of that resource explains our posture, our skin covering, our physiology, our 8-) right?

- > >> *[Pauline] Yet we know from Kaye Reed's paper (don't we, Bob?) that*
- > >> *Australopithecus was found in well-watered woodland, and Paranthropus*
- > >> *in similar and somewhat drier habitats, but always including wetlands,*
- > >> *and early Homo in the same, plus some dry habitats. This gives a*
- > >> *uniformity to early hominin environments which Potts completely*
- > >> *misses.*
- > >
- > >Pauline, *I have NEVER claimed that an ancient hominid could possibly have*
- > >*survived without water. I will even go so far as to suggest that we*
- > *should*
- > >*add adjectives such as "reasonably plentiful". [Snip]*
- > >*ALL savanna animals must have ready access*
- > >*to water else they die! Simple as that. They die. No natural selection*
- > >*process, no evolutionary tendencies. If the water is not there, the*
- > *grazers*
- > >*will die. So would ancient hominids.*
- >
- > *Savanna-adapted animals must drink, but they don't need to drink as*
- > *often as animals from wetter terrain, and they drink a lot in one go.*
- > *Would you say this applies to humans?*

They don't need to drink as often as animals that obtain more water from their food. AFAIK, just about everyone agrees that gorillas rarely if ever drink water from a stream or pond, getting by quite nicely on the water contained in the lush jungle veggies, the dew on leaves, and small catchments.

As for how often "savanna animals" drink, have you ever owned a horse? If they have the water available, they drink when they want. If they are "out on the range" they drink whenever they can and yes, that is relatively infrequent compared to some other animals, and yes, in those situations they do drink their fill. And no, humans almost certainly need more water (per lb or body mass), more often than horses, at least if you select the right human diets. If you provide lots of fruit and water-laden veggies you might be surprised at how infrequently humans need to drink. 8-) But then we don't eat all that much dry grass either. . . . ;-)) By the way, what happens to a horse that eats a lot of dry grass and does not get a LOT of water to go with it?

> *But the issue is Potts' paper: he claims that there is no consistency*
> *to the type of environments where hominins are found, yet Reed found*
> *exactly that – they all include plenty of water. Not the occasional*
> *water-hole or savanna-surrounded river, but "well-watered" and*
> *"wetlands". If Potts had included water in his discussion of hominin*
> *habitats, he would have had that consistency.*

Of course all habitats with early hominids will have water! Who would be so foolish to think otherwise? Unless you want to hypothesize an existence based on modern gorillas (which actually do live in a very "water rich" environment), humans and hominids must drink. (aside from that no member of the human lineage appears to have the gut that would have allowed existing on the very moist but very fibrous and low-calorie food that a gorilla seems to get by on.)

If Potts had included the rather obvious fact that hominid existence is impossible without drinking water, would that appease you? Or do you require that he also add in totally conjectural wading and swimming contexts?

> *By the way, how would you rate "fools" to "idiots" on the scale of*
> *sociopathic ad hominem on USENET?*
>
> *This is tedious. I would rather ignore all this snide stuff, but since*
> *you ask me directly, I will tell you: on a scale of 1 to Jason*
> *Eshleman's little masterpiece, I would rate it a 1.*

Well, perhaps I have too high of an expectation of a professional scientist and those who would aspire to such. Have been a self-admitted fool for less.

> >
> *So. . . . My contention goes something along the lines of you can lead a*

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- > > *homind to water and eventually he must take a drink, but that does not even*
- > > *imply that he is irresistably forced to get his feet wet! 8-)*
- >
- > *No, indeed, and modern chimps, say, who can get all the food they need*
- > *without doing so, will avoid water. But in the much wetter Miocene and*
- > *early Pliocene, there may well have been times when the food available*
- > *without getting ones feet wet was not quite enough, and those*
- > *individuals who were prepared to wade or swim would have done better*
- > *than those who were not.*

Did you read the article I referenced on the observations of wild bonobos routinely wading? Interesting implications there! 8-)

- > > *Water is not simply a recurring feature, its an absolutely essential*
- > > *feature, . . . for at least drinking purposes. All other "purposes"*
- > *need*
- > > *evidence.*
- >
- > *There's very little direct evidence of what our ancestors were up to 2*
- > *or 5 or 10 Mya. We don't know directly whether they were wading, for*
- > *example, or what specifically they were eating. We have to look for*
- > *indirect evidence: what was the environment like? what food would have*
- > *been available? what do extant apes do in similar conditions?*

And if they were wading and gathering food from aquatic sources, just like the wild bonobos described in the Plank article, the implications toward bipedalism, hairlessness, sc fat, etc are exactly what?

- > > > *[Pauline] If one is proposing a hypothesis for the evolution of a species,*
- > > > *one of the first and most important questions is: why did this happen*
- > > > *to *this* species? Were there other species in the same environment,*
- > > > *did they evolve the same way and if not, why not? The more unusual the*
- > > > *proposed explanation, the more searching these questions have to be.*
- > > > *Potts is proposing a unique-to-humans hypothesis, yet he never*
- > > > *addresses them at all. It's a major weakness, in my view.*
- > >
- > > *OK, lets see if I can get this straight.*
- > > *a) Any evolutionary process that could lead one species in a give*
- > *direction*
- > > *should be expected to lead others in the same direction?*
- >
- > *No, not really. Why should it? Evolution doesn't work that way. Even*
- > *very similar species might react to the same evolutionary pressure in*
- > *different ways.*

But exposure to water causes hairlessness! Wading causes bipedalism! If we see hairlessness and bipedalism it obviously points to an aquatic existence! Right? 8-)

- > *But if you propose an explanation for some evolutionary change in a*
- > *species, part of that explanation must include the reason why other*
- > *species in similar conditions did *not* go that route. In other words,*
- > *you can't propose an explanation why something *did* happen, without*
- > *also explaining why it did *not* happen.*

Yep. That's a fact! have at it, and remember avoid those "human specific" answers... 8-)

- > >
- > >b) *An "explanation" that is unique to the human species is far fetched*
- (or
- > >at least less credible) *that a generalized process?*
- >
- > *Any unique explanation is less likely than one which applies in*
- > *multiple cases, yes. You would investigate the more common possibility*
- > *first.*

Yep. Sounds good! Go for it with each of the "proofs" of the AAH!

- > >
- > >c) *The "more unusual the proposed explanation", the more questions*
- > > *must be asked and the more strongly the conclusions must be*
- > > *supported with facts?*
- >
- > *I said "The more unusual the proposed explanation, the more searching*
- > *these questions [why other species evolved differently] have to be."*
- > *Conclusions always have to be supported with evidence (facts are thin*
- > *on the ground in PA).*

So we have to gather around the FACTS, rather than just assertions, contortions of the facts, implied "must haves" and such, and base our "most likely" assessments on the "ground truths"? Hmmmm. . . .

- > >
- > >8-) *Sometimes you truly surprise me! In this case, happily though!*
- >
- > *That's because you think the 'aquatic' explanations are unusual :-)*

Unusual is a bit weak of a term, but. . . .

- > >
- > >Lets start with "a"! *If I consider all aquatic and semi-aquatic mammals*
- > >under the weight of 150 lbs, and there are a host of them, did their
- > >adaptation to the water lead to the loss of fur or actually a thickening
- of
- > >the fur?
- >
- > *Well, now, all aquatic and semi-aquatic mammals under 150 lbs, so that*
- > *will include quite a 'host' of the smaller dolphins and porpoises,*
- > *right? So quite a few that have lost their fur. :-)*

Nope. Check the weights of the adult dolphins and porpoises. They look relatively small but that is because they pack a great deal of flesh into the smallest possible skin area. As far as I know, the harbor porpoise is the smallest cetacean and they average around 60kg with a top end of around 68kg or so.

<http://kingfish.coastal.edu/marine/375/porpoise.html>

Amazingly (!!!!) 150 lbs works out to about 68.18 kg. 8-) I usually don't like to open myself up to claims of being a fool, particularly when there are so many very convenient unit conversion tools around! 8-) So, how many dolphins and porpoises are there that are routinely smaller than 150 lbs? ; -)

> >Now lets look at "b". If I look at all of the other mammalian species that
> >have successfully adapted to an aquatic or semi aquatic existence, I see
> >NONE that have adopted the rather unique bipedal gait because of their
> >contact with water. NONE!
>
> But then of all the other mammalian species that have taken up an
> aquatic or semi-aquatic lifestyle, I see NONE that started out as
> arboreal apes. NONE! ; -)

But that is one of those "unique" answers! 8-) At once a question and a possibility! If I look amongst the ape family, exactly how many have adopted an "aquatic" existence. that would meet your requirements as an evolutionary "driver", without the technology of humans?

As for starting out at least to some degree arboreal, let me offer up our friends the otters! Some members of that particular group are renown for their climbing ability. One, that we have locally, is called a fisher or a fisher cat. Their favorite "trick" is to run a porcupine up a tree! The porcupine is generally well protected from any predator at that point with the spines facing down, unless the hunter is a fisher. The fisher will rapidly climb another tree and work his way through the limbs to the porcupine's tree and attack from above where the porcupine is virtually helpless. The fisher is one of the very few mammalian predators that actually pursues its stock and trade in the trees! True, not an ape, but at least to some degree arboreal. More commonality in terms of origin and widely different results. Hm

> >If an environment niche is sustainable it is not left empty nor is it abandoned.
> >There have
> >been huge areas of Africa (varying in size of course) entirely suitable for
> >the aquatic ape constantly over the last 10my or more, yet there are no
> >aquatic apes! Only us humans and the terrestrial apes are left, even though
> >the proposed niche is very much there [Snip]

>

- > *YES! Exactly.... only us humans and the terrestrial apes. Huge areas*
- > *entirely suitable, and only us humans and the terrestrial apes... If*
- > *an environment niche is sustainable it is not left empty nor is it*
- > *abandoned....*

And where is the human or ape with the webbed feet that would have inevitably resulted from millions of years of exposure to that environmental niche? (at least it is inevitable if we are to consider the other comparably sized mammals that live in that environment!) 8-)

> *No aquatic apes? Now I wonder where they are? ;-)*

Well, IMHO, there are perhaps two viable hypotheses. First is that there never were any. The other is that we have to "moderate" the definition of "aquatic" to include those creatures that need open and readily available water to drink! Do you think that little moderation might be excessive? So do I! 8-)

Regards
bk