

Re: Bipedalism in different substrates

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From: Jason Eshleman (jae_at_vidi.ucdavis.edu)

Date: 07/03/04

Date: Sat, 3 Jul 2004 20:45:23 +0000 (UTC)

deowll <deowll@bellsouth.net> wrote:

>

> "Jason Eshleman" <jae@ucdavis.edu> wrote in message

> news:b7af43cb.0407022320.433a5f26@posting.google.com...

>> "deowll" <deowll@bellsouth.net> wrote in message

> news:<[VliFc.640\\$bj2.438@bignews5.bellsouth.net](mailto:VliFc.640$bj2.438@bignews5.bellsouth.net)>...

>>> "Jason Eshleman" <jae@vici.ucdavis.edu> wrote in message

>>> news:cc45su\$8k5\$1@woodrow.ucdavis.edu...

>>>> Bob Keeter <rkeeter@earthlink.net> wrote:

>>>> [snip]

>>>>

>>>>> No, the "arguement" against wading is that there is no real evidence

>for

>>>>> wading. No meaningful examples, no logic, no reason, no scientific

>>>>> "purpose" that requires hypothesizing that concept. But. . . that

>>>>> arguement

>>>>> is the old standard arguement and it is totally destroyed (in some

>>>>> people's view) by the words "might have", "could have", and after

>>>>> a completely childish, and egotistically polarized exercise in

> rhetoric,

>>>>> "must have". "Must have" is the real betrayer, since those words

> reveal

>>>>> that the debater agrees that there is no evidence, but his ideas are

>>> without

>>>>> possible reproach, *EVEN THOUGH* there is no evidence. Ever use

>>>>> the words "MUST HAVE", Algis?

>>>>

>>>>> Actually Bob, it's more complex. The argument is both that there

> needs to

>>>>> be real evidence for wading **and** evidence that wading, if it happened

>>>>> to any significant degree, could reasonably produce the morphological

>>>>> changes we see. Neither has been adequately addressed or

> substantiated

>>>>> save pure assertion backed by paranoid charges of conspiracies against

> the

>>>>> water and all who talk about it.

>>>>

>>>>> The adaptive response is still the one I have the biggest problem

>with.

>>>> *That the morphology we see would result from wading *isn't* clear. If apes can wade (a point that gets hammered out) and can and do so bipedally, what changes in morphology are necessary and why? *THIS* hasn't been adequately addressed beyond the "must haves" and "may haves."*

>>>> *[Note: other models fail to address this too. That other models fail to*

address something is not a reason to follow suit.]

>>>>

>>>> *The cry that this is an adaptation to avoid drowning misses several points. For starters, the *best* way, actually the only one that works*

100% of the time (to borrow a phrase) is to stay out of the water.

>Don't

>>>> *get in the water and you can't drown. As a result, to say that*

bipedality

>>>> *is a response to avoid drowning means that you need to make wading*

somewhat compulsory. This is possible (e.g. a "may have"), but isn't

clear and brings us back to the initial point that you made that we

need

>>>> *to better substantiate that wading happened in the first place.*

>>>>

>>>> *Beyond this, it's not at all clear that the changes necessary for*

**obligate* bipedalism [note: in an evolutionary sense, obligate isn't*

the

>>>> *same thing as "have to stand up in particular environment because they*

are

>>>> *"obliged to or they will drown"] result from wading. Apes have all*

the

>>>> *morphological adaptations to avoid drowning by standing erect in*

"waist

deep" water just as they have the necessary tools to stand up on dry

ground. [It still seems like the resident wading proponent has some

vision of a critically stupid ape who keeps wandering into the water

until

>>>> *his head is submerged and then dies.]*

>>>>

>>>> *And so, if apes can easily stand up when the water gets too big*

**without*

>>>> *any additional adaptations,* what *specifically* about our morphology*

that

>>>> *we share with the earliest clearly bipedal hominids gives a survival*

value

>>>> *over the facultative bipedality practiced by apes? There are clear,*

significantly measurable differences in our ability to move bipedally

and

>>>> *the ability of an ape to move bipedally over terrestrial terrains. It*

is

>>>> *not clear that these differences would be as great in an aquatic*

*environment. *This* has to be substantiated and it hasn't been. If*

>it
>> > > cannot be substantiated, it's totally irrelevant if apes wade
>bipedally
>> > > 100% or .0001% of the time.
>> > >
>> > Anything that causes a major portion of a population of apes to spend
>more
>> > time doing something is going to have some selection in favor of what
>ever
>> > the heck it is they are doing unless of course they don't need to.
>> >
>> > I will grant that apes are only moderately well adapted to walking erect
>and
>> > that if they spent more time doing it selection would favor those better
>> > adapted no matter what the reason.
>>
>> Sorry, but you're propagating one of the classic misunderstandings of
>> evolutionary biology. It matters not how much time you engage in an
>> activity if it doesn't affect survival or reproductive success. Apes
>> can walk around all day or not at all. In neither case will it
>> produce adaptive change *unless* their success at such activities
>> influences their reproductive success. This is a very important point
>> that seems to be glazed over more often than it should. The reasons
>> are important.
>
>Your view is reasonable if a being has unlimited time and resources. Then it
>can spend a great deal of time doing something without it affecting its
>reproductive success. I assume that time and resources are limited. No
>creature can spend a great deal of time doing anything without it affecting
>its reproductive success for good or ill.

That's conjecture. A creature can do something all the time or not at all and it won't result in evolutionary change in the lineage unless something about that behavior results in change in a heritable trait. If there is no heritable variation, there will be no evolution.

If humans spend more and more time watching TV, those few who get up off the couch to get it on every once in a while may well have a higher reproductive success, but this doesn't mean that there will be an adaptive response favoring less TV watching. That requires that there be some genetic regulatory mechanism for TV watching. If the trait is entirely cultural, no increase or decrease in the activity can influence adaptation.

>If a species changes its behavior so that it spends a great deal of time
>doing something it isn't great at it will affect the fuel budget and consume
>time it might have used doing other things and that affects everything else.

Important point: selection doesn't work on the species. It works on the individual. If the difference in behavior between individuals isn't heritable, then it's not relevant to natural selection.

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- >You do not have to observe them keeling over dead after taking a hike for
- >selection to occur within a population. In fact what happens to a given
- >individual most likely doesn't make a lot of difference in a healthy
- >population. It is what happens to a lot of individuals that matters and why
- >one creature succeeds and another fails is always going to involve a lot of
- >subtle factors that may not always be obvious even to a trained observer.
- >
- >That is my view. Turn about is fair play.
- >
- >Please explain to me how a being can spend a great deal of time doing
- >something without it effecting reproductive success?

It's not about whether or not the reproductive success is affected so much as it's about whether or not the reproductive differentials are regulated by some heritable trait. Differential reproductive success is only PART of the evolutionary equation. Heritable differences related to the differential success is completely required for adaptation to occur, else any change will be a result of chance genetic drift.