

Re: Haldane's Dilemma – again, again, again, ...

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- *From:* "John Edser" <edser@xxxxxxxxxx>
 - *Date:* Tue, 13 Jun 2006 13:18:48 –0400 (EDT)
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pwemail@xxxxxxxxxx wrote:–

Joe Felsenstein wrote:

Here:

<http://www1.minn.net/~science/CostTheory1.pdf>

is a link to Remine's more recent summary of his argument.

Yes, I'm aware of that paper – which ReMine calls a clarification. It may indeed be – I'm not qualified to judge that. The question, though, is whether it is be counted as a solution or a modification of the dilemma. In "The Cost of Natural Selection", Haldane defined substitution as substitution of genes at the same locus. ReMine changes that to substitution of individuals – reproductive excess.

JE:–

ReMine is correct. You cannot substitute one base pair for another or one gene for another without substituting one individual for another (one fertile form to be exact). This is because all gene fitnesses remain dependently epistatic at just the one, single, Darwinian fertile form level of selection. Population geneticists oversimplify refutable Darwinian theory down to irrefutable gene centric models in which genes are granted a heuristic independent fitness, i.e. their own fictional independent level of selection. This provides mass confusion because these models are never corrected for this oversimplification.

snip<

Probably the best one can hope for is to say: some people say (this),

but

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others reply (that).

Yes, that was my idea – first to present, what haldane actually wrote back in 1957 – which, if nothing else, would make it easier to see, if it was at all the same cost concept that was the issue between papers.

At the risk of pushing my own views ... take a look at my 1971 article in American Naturalist. It argues that the "cost of natural selection" is imposed by environmental deterioration, which is counteracted by natural selection after a delay.

This appears to be the same model as used by Haldane – an environmental change with lowered fitness for the majority of the population, which in turn allows a previously rare allele to move towards fixation.

JE:–

A relative cost cannot absorb the absolute (total) cost allowing a "free" substitution, i.e. just a "free lunch" (as I explained in my post using an analogy). Gene centric population genetics appears to be full of "free lunches" because it remains 100% relative to something nobody will admit to.

My reading of Haldane's paper shows that it is discussing substitutions brought about in response to environmental deterioration.

That's how I read it as well, so it's probably correct ;–)

JE:–

The absolute cost of substitution has to be paid no matter what.

And no, offhand I don't know who first used the term "Haldane's Dilemma",

except that it can't have been Haldane.

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Well, so you can live with the claim that it was Leigh Van Valen, I guess.

JE:–

Van Valen of the "Red Queen" school... interesting....

Regards,

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