

Re: Van Valen's MAXIMAND

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- *From:* "John Edser" <edser@xxxxxxxxxxx>
 - *Date:* Sat, 21 May 2005 14:51:37 -0400 (EDT)
-

Tim Tyler tim@xxxxxxxxxxx wrote:--

>>>> JE:--

>>>> In order to measure any relative fitness, i.e. any fitness
>>>> difference you must (at the very least) have two fitness
totals/sub
>>>> totals to compare. In order to have these you have to define a
>>>> minimum of two independent selectee's each of which has been
>>>> allocated one total/subtotal fitness. What are your two
independent
>>>> selectee's and what are their total/sub total fitnesses using
the
>>>> metric you have proposed? If the fitness totals are only sub
totals
>>>> then their comparison will not be definitive for any natural
>>>> selective result.

>>> TT:--

>>> E.g. biomass of species 1 and biomass of species 2.

>> JE:--

>> Does this mean that you are comparing the "biomass of species 1 and
>> biomass of species 2" in order to determine which species is
selected
>> for and which is selected against? If so: please more exactly define
the
>> two selectee's

> TT:--

> That would be the members of species 1 and species 2 at a point in
time.

JE:--

Two big problems remain unresolved. Darwin proved that species do not
actually exist, i.e. species classifications remain arbitrary. The
second problem is the "members of species 1 and species 2 at a point in
time" is just a forever on going SUB total of something which is always

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changing. Unless you can define finite totals you cannot discriminate between dependent and independent selective events which are entirely necessary for testability. Empirically the critical difference between dependent and independent fitnesses does actually exist within nature. Any heuristic that dissolves this critical barrier becomes useless because the necessary boundary that allows empirical evolution by natural selection has become dissolved.

>> JE:-

>> and then define the units of fitness that can be calculated for each of
>> them.

> TT:-

> That would be grams.

JE:-

Why should a species that consists of say 1000 individuals with a mean weight of 10 gms be equally fit as another species consisting of 2000 individuals with a mean weights of 5 gms? If they were the same species the individuals that have a mean weight of 5 gms would mostly be fitter because their parents could reproduce up to twice as many.

>> JE:-

>> You must state if each compared biomass is a total or just a subtotal
>> for each selectee you have defined.

> TT:-

> It's not clear how one would one distinguish between a total and a
> subtotal in this context.

JE:-

Then the idea is just scientifically useless because it can never be defined and therefore tested. It most certainly cannot replace any idea that provides empirically based totals which can be tested to refutation.

>>>> JE:-

>>>> Success at what?

>>> TT:-

>>> Becoming an ancestor.

>> JE:-

>> Do you argue that "becoming an ancestor" was causative to evolution or
>> was it just the result of another (unnamed) cause? If "neither" please
>> explain your position.

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> TT:-

> Becoming an ancestor can cause future evolutionary events, and can
> be the result of another cause, though probably not "just" the result
> of another cause – depending on what that is supposed to mean.

JE:-

Simply saying it was both confuses your argument. You should provide the logic for each and then provide an example.

>> JE:-

>> ...but within the sciences it is simply not enough for just you to
>> "think". You have to explicitly explain your thinking to others
who's
>> job is to remain sceptical. The question I asked was designed to
allow
>> you to make a more specific explanation to sceptics.
>> Do you agree or disagree that the logic of natural selection
requires a
>> comparison of at least two fitness total/sub totals where all units
of
>> fitness and at least two independent selectees must be defined as
>> countable objects/forces of _biology_?

> TT:-

> I'm not sure what "countable objects/forces of _biology_" are – but
> most of the rest of that sounds reasonable enough.

JE:-

I agree that measuring a biological maximand as a force is confusing but Van Valen was not counting photons (objects) to measure his maximand so he must be measuring some sort of force.

Can I take it that you agree that at least two fitness total/sub totals where all units of fitness and at least two independent selectees must be defined as countable objects of _biology_? If so do you agree that only the comparison of independent selectee totals and not sub totals is definitive for a selective event?

>snip<

>>> TT:-

>>> That was "families" – as in: phyla, orders, families, genera, and
>>> species – not "families" as in the Smiths and the Joneses.

>> JE:-

>> Ok. Your answer requires you to be much more specific. I will start
with
>> species. If species compete then one unit of selection has to be one
>> grouped unit called "one species". If fitnesses are to remain self
>> consistent then species must reproduce other species and not just
>> individuals within the same species grouping. Do you accept this

point?

> TT:–

- > Clearly species enjoy differential reproductive success.
- > They divide and form offspring species in a manner similar to the way asexual organisms reproduce.

JE:–

The species concept after Darwin remains empirically arbitrary so all species group selective events must also be arbitrary or Darwin must be wrong.

Just a heuristic model of group selection between species would select for one species as one grouped selectee to allocate limited resources into maximally budding off new species and not just expanding the existing parent species. would you agree?

>snip<

>>>> JE:–

- >>>> I agree that such a long–term "fitness" can be a useful but entirely
- >>>> heuristic concept. My question is: are you suggesting that it can
- >>>> replace the empirical Darwinian concept of fitness as I have defined
- >>>> it?

>>> TT:–

- >>> I'm afraid I don't always keep track of your definitions.

>> JE:_

- >> Here it is, yet again. [...]

> TT:–

- > So what are you asking again? Is it a drop–in replacement for that sort of fitness? No. It is another definition of fitness
- > with other applications? Yes.

JE:–

TDF remains the only refutable definition of a fitness that exists which I claim was always implicit within Darwinism, i.e. it represents a fully refutable Darwinian maximand fitness. If you take a natural population and artificially hold each parents TDF to be exactly the same then the prediction is that only zero natural selection can operate while this can remain the case.

> [...]

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>

>>> TT:-

>>> A consequence of the idea is that species trading body size
against

>>> the numbers of individuals supported in a given environment should

>>> not necessarily be regarded as being any less fit – simply because

>>> there are fewer of them.

>> JE:-

>> My biological understanding is that species (groups) cannot firstly

>> compete because they are always comprised of independently
selectable

>> Darwinian _individuals_.

> TT:-

> This is contrary to biology textbooks, which at least recognise group

> selection as a phenomenon exhibited in the laboratory.

JE:-

At this point I had not denied that group selection "as a phenomenon exhibited in the laboratory" I have simply stated that within all these experiments selection was firstly acting at the Darwinian fertile form level and only secondly at the supposed group level. The logic of such a situation is that Darwinian selection at the fertile organism level must always dominate group selection because it acts firstly. The supposed group selection experiments I have read were NOT just group selective. They simply extinguished entire groups of Darwinian individuals and did not extinguish other groups. Individual selection was happening firstly in every case. Note that what extinguishing groups differentially is NOT the same thing as measuring a comparison of total groups reproduced from each grouped parent within one meta population of groups.

>> TT:-

>> I cannot see any use of forcing a selective

>> competition between two different species via your metric of biomass
(or

>> anything else) while just ignoring the result of selection between

>> individuals which always happens *FIRSTLY*. No empirical evidence
exists

>> for species competition acting in disregard to the Darwinian fertile

>> form level which always acts first. All the evidence points to

>> competition firstly acting between fertile individuals within a
species

>> as Darwin originally implied. So called

>> independent gene fitness do not even exist in NATURE. Do you agree
or

>> disagree that the level that operates firstly must dominate all
other

>> levels within any multi level proposition?

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- > TT:–
- > Gene level and individual level selection are probably the most
- > important levels.

JE:–
No empirical "gene level" exists because all genomic gene fitnesses remain epistatic to all the genes within the one, same, genome. So only the "individual level" is actually empirical. Do you separate fertile and sterile individuals as different levels of selection?

- > TT:–
- > IMO, we can't see the strength of higher–levels
- > of selection very clearly yet – except to say that they are not
- obviously
- > strong. What we can say is that the higher levels definitely at
- > least exist, and can't be discounted.

JE:–
No valid multi level theory exists so not one simplified/over simplified model of multi level theory can be produced because all models have to be simplifications from an existing theory. Just to state multi levels of selection exist does not constitute a theory! I remain stunned and amazed that nearly all Neo Darwinists glibly assume multi levels of selection yet none of them can provide just a minimal theory of it: a theory of two independent levels of selection operating in nature.

- >>> TT:–
- >>> What matters more is how effective they are at utilising
- >>> environmental resources which they are in competition with
- >>> other species for – and their collective biomass can do
- >>> reasonable duty as a proxy for that.

- >> JE:–
- >> You have to more exactly define what they are utilising
- environmental
- >> resources *FOR*.

- > TT:–
- > Organisms are usually regarded as being "for" transforming resources
- > into offspring in biology.

JE:–
Yes, but if these organisms are only sterile, while they remain sterile the above is just a useless exercise.

- >> JE:–
- >> If and when you define it more exactly you end up making a maximand
- >> proposition of nature.

- > TT:–

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> My essay on the issue of what nature is maximising is this one:

>

> http://originoflife.net/bright_light/

JE:–

The proposition you provide on your website; "living systems evolve in a way that maximally degrades the energy resources available to them" can be refuted as a biological maximand. If the Total number of fertile forms reproduced into one population by each parent (TDF) becomes reduced simply because the degradation of their energy resources can be more quickly degraded in a way that reduces and does not increase TDF, then such an event will be selected against. I mean, spontaneous self combustion will be selected over biological reproduction using your maximand.

> TT:–

> As a brief summary, I don't think the question can be answered neatly,
> but I tend to regard thermodynamic metrics as the most fundamental –
> with my favourite such metric being the rate of entropy increase
> caused by the system in question.

JE:–

Darwin implicitly answered what was being maximised within biology. I claim to have explicitly understood what Darwin was implying.

> No single metric will ever be ideal, since organisms compete for
> resources on a multi–dimensional landscape – and maximisation
> on different timescales fundamentally requires different metrics.

JE:–

Only if independent fitness events remain unseparated from dependent fitness events. When they are separated a single metric can easily emerge: TDF.

>> TT:–

>> So far you have failed to provide such a definition. Van Valen has
>> provided one but it is non refutable. Darwin implied one which
remains
>> refutable to this very day. To my knowledge these are the only
>> evolutionists that have proposed a maximand for evolutionary theory.
>
> IMO, there are literally dozens of definitions of fitness, each of
which
> plays the role of a proposed biological maximand. IIRC, at one stage
there
> was a survey that identified in excess of 20 distinct definitions of
> fitness in the literature.

JE:–

Please provide an example of one maximand that has been proposed which is empirically refutable but remains non refuted.

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