

Re: Bet Hedging, Risk Aversion, Sex, and the Unit of Selection

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- *From:* "g" <gillawton@xxxxxxxxxxxxxx>
 - *Date:* Tue, 24 Jan 2006 13:35:13 -0500 (EST)
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"Perplexed in Peoria" <jimmenegay@xxxxxxxxxxxxxx> wrote in message
[news:dr4589\\$18qt\\$1@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:dr4589$18qt$1@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)

>

> "g" <gillawton@xxxxxxxxxxxxxx> wrote in message

> [news:dr3g4g\\$vr6\\$1@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:dr3g4g$vr6$1@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)

>>

>> "Perplexed in Peoria" <jimmenegay@xxxxxxxxxxxxxx> wrote in message

>> [news:dr1gik\\$80f\\$1@xxxxxxxxxxxxxxxxxxxxxxxxxxxx](mailto:news:dr1gik$80f$1@xxxxxxxxxxxxxxxxxxxxxxxxxxxx)

>>

- > In the interests of full disclosure, I should admit I am a bit out of
- > the mainstream in my tolerance for and use of teleological language
- > for natural entities which quite clearly DO NOT think conscious thoughts.
- >
- > But not all THAT far from the mainstream. I didn't invent the biological
- > use of the term 'bet hedging', for example.

My impression is that you are not at all outside the mainstream in relying upon conventions.

Let me say, again for emphasis, that I do not object to exchanges among biologists among their own in which idioms have developed which --- only to an outsider --- would seem to suggest that gene's put a cognitive toe in the ecological water and decide what they might do if they want to live vicariously through duplication of themselves.

Sometimes I do wonder whether such idioms "could" possibly induce subliminal messages into the psyches of those who use them, in much the same way that use of the N-word may induce into the psyches of children certain racial attitudes which the parents, if asked, vehemently deny.

I hate to remind so often, but I am a person who simply tries to make sense of things, and not one who believes he has all the answers nor one who wishes to stamp his ideas on others. What I do enjoy is posing what if's, in order to get other people's thoughts (especially

Re: Bet Hedging, Risk Aversion, Sex, and the Unit of Selection

brilliant other people's thoughts)
around questions that sort of haunt me... in hopes they might add dimensions
or pertinent information.

Not recently -- but some years ago -- I got intensely interested in the area
of subliminal suggestion. You may recall that pictures and written
statements were fit into television shows and movies so briefly that
the images or words did not register consciously on the audience; but the
audience could be, and was, influenced by these images. For example, I
recall reading about the use of this gimmick to get motion picture theater
audiences to buy more concession products, and it worked. Once the word got
out, there were lots of people who objected, saying this was unreasonable
and unfair psychological manipulation.

In one horror show, an image of something was flashed in advance of a
murder, to build a feeling of dread. I think it may have been a human
skull. Whether anyone objected to that one or not, I do not know.

HOWEVER, I know for a fact that medical professionals in the
psychology-related fields do study techniques of suggestion that have been
established to be effective in implanting certain healthy thought patterns
and behaviors, while wordings that would suggest unhealthy attitudes and
behaviors are avoided. Once I read an article about care of the elderly, in
which the author referred to several responsible studies which established
that some acts by family members subliminally implanted an attitude in an
elderly person that it was "time for them to die." One such act was selling
of the family home. Sometimes families have an elderly person who must be
cared for in a retirement home and must rely upon public assistance to pay
the bills; and the laws DO NOT require sale of the family home to
qualify... even where the person is irreversibly beyond being capable of
recovering sufficient health to return to that home. If I understand
correctly, the reasons for this have to do with the impact of that "die
signal" on at least SOME patients.

Medical doctors are trained to be aware that things said around anesthetized
individuals and comatose patients can have dramatic impact on the progress
of those individuals toward getting well or dying.

Again... all I am saying is that I cannot help but wonder if, or to what
extent, language suggesting that
genes "strategize" or have a desire to see to the survival of copies of
themselves ...etc, might influence subliminally how experiments are set up,
how their results are interpreted, and such.

It is not exactly an outlandish thing to wonder about, I do not think.

g

> [snip]

>

>> > 1. Sex exists because it provides a mechanism for bet hedging.

>

Re: Bet Hedging, Risk Aversion, Sex, and the Unit of Selection

>> But please allow me to submit that other mechanisms may work, too.
>> Consider
>> for example some of the mechanisms utilized by pathogens for spreading
>> "advantageous traits" which currently are tormenting medical researchers
>> with respect to the increasing resistance of pathogens to antibiotics
>> and,
>> concomitant increase of those same pathogens for resistance even to the
>> innate immune systems of humans. One of those mechanisms is
>> "conjugation,"
>> I think, and another "transformation."
>
> Yes indeed. In fact, if you have looked at the Bergstrom/Lachmann paper,
> you will notice that they are talking about asexual bacteria as the
> hedgers of bets.
>
>> > 2. But this only makes sense if the unit of selection is seen
>> > as the gene-clone, as in a gene's eye view justification
>> > of Hamilton's rule. A gene clone can spread its bets
>> > evenly among the alternatives – it has a 'stake' that is
>> > divisible. Organisms, for the most part, do not.
>>
>> Sorry, but every time someone makes this leap, I end up jumping my
>> hardest
>> and ending up at the bottom of a canyon of confusion. For me, something
>> is
>> assumed in arriving at a gene's eye view that leaves me (not having
>> assumed
>> it) unable to take it and run with it to anywhere. Every gene's-eye-view
>> seems to me to suggest that genes are proactive in assessing what the
>> ecology of a given evolutionary moment is doing, and what vectors of
>> change
>> are occurring within that moment which can predict in advance what is
>> going
>> to neutral now, but advantageous later on, and such... but I am unable to
>> presume that genes are psychic, that genes are able to assess by some
>> physiological means what is going around them, and that genes are capable
>> of
>> strategizing what to do -- or try to do -- about what is in the road
>> immediately ahead or at some distance ahead.
>
> Quite frankly, I don't see your problem. Under random mutation and
> natural selection, those entities which do leave progeny can be said
> to have behaved AS IF they had directed their own mutations so as to
> achieve some end. That is true of rabbits, which evolve as if 'trying'
> to increase their fitness; it is true of bacteria, which evolve as if
> trying to maximize the count of offspring; and it is true of genes.
>
> The same metaphor is being used in all cases; it is a standard metaphor;
> and those who refuse to 'get used to it' are going to be perpetually
> condemned to having their complaints fall on deaf ears.
>

Re: Bet Hedging, Risk Aversion, Sex, and the Unit of Selection

>> > 3. As suggested in the paper by Bergstrom and Lachmann
>> > The Fitness Value of Information
>> > Carl Bergstrom and Michael Lachmann
>> > http://arxiv.org/PS_cache/q-bio/pdf/0510/0510007.pdf
>> > the process of natural selection can be given an information
>> > theoretic interpretation in which there is an identity between
>> > fitness (Fisher's r) and information acquired about the actual
>> > distribution of environments.
>>
>> Bergstrom and Lachmann may have something there... something which can be
>> put to actual testing in lab. If so, I look forward to being told how,
>> and
>> what the results are. In absence of that, I hold in reserve any
>> conclusion
>> pro or con on the issue.
>
> Bergstrom and Lachmann have constructed a model, not a theory about how
> nature works. You don't test this kind of thing in the lab or in the
> field.
> You and Edser both seem confused on this issue.
>
> What Bergstrom and Lachmann have discovered is an unexpected property
> of models of evolution. They haven't discovered something about
> evolution itself – about physical reality.
>
>> ... I get the impression some
>> might make a single assumption as to what might be, and then launch into
>> a
>> long, intricate chain of assumptions which -- unless the first is
>> valid --
>> the rest are leaving empirical things farther and farther behind...
>> advancing,
>> as it were, into more and more complex suppositions based upon
>> suppositions.
>
> Yes. And what is wrong with that?
>
>

• **References:**

- ◆ **Bet Hedging, Risk Aversion, Sex, and the Unit of Selection**
 ◇ From: Perplexed in Peoria
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• Prev by Date: **Re: OF SCIENCE AND ARROGANCE**

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- Next by Date: ***Re: Unconsciousness Regained***
- Previous by thread: ***Re: Bet Hedging, Risk Aversion, Sex, and the Unit of Selection***
- Next by thread: ***Re: Bet Hedging, Risk Aversion, Sex, and the Unit of Selection***
- Index(es):
 - ◆ ***Date***
 - ◆ ***Thread***