

Statistics, Selection, Society, Individuals, Gender, Gossip, Conflict, and Careers

Source: <http://sci.tech-archive.net/Archive/sci.physics.research/2005-03/0261.html>

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Date: 03/09/05

Date: Wed, 9 Mar 2005 08:06:39 +0000 (UTC)

On Mon, 7 Mar 2005, Phillip Helbig, who failed to change the subject line to a more descriptive one, as I had requested—— an omission I have tried to rectify in this reply—— wrote

>> *I think the U.S.A. is still the nation best suited to provide this
>> particular service to the scientists of the world,
>
> Do I detect a bit of provincialism here?*

<cue: Sousa's march "Solid Men to the Front" is heard>

You detect the pat patriotism obligatory for prudent (cowardly) citizens of a country at war. May the best nation win!

<cue: the band unexpectedly staggers into tritone territory and crashes to a dissonant halt>

No wait—— that will happen –by definition–, won't it?

;-/

[Hmm.... Ives—— was –he– an "outsider"?]

>> *the question of why humans take such pleasure in, and feel such
>> compulsion to indulge in gossip.
>
> I think it is clear from evolutionary biology that gossip was essential
> for our survival back in the caveman days, thus it is still interesting
> to many people today, even if it is not as strongly needed as back then.*

I think you are suggesting that this might have been adaptive 10,000 years ago, but is now selectively neutral, or even a waste of valuable energy. That could well be, but I don't think one can assume this is true without a lot more evidence.

I see some deep underlying questions here: How can you tell whether a

given trait constitutes an "adaptation"? How best to track the presumably variable answer to the question of how adaptive a given trait/behavior is?

author = {George C. Williams},
title = {Adaptation and Natural Selection: a Critique of
Some Current Evolutionary Thought},
publisher = {Princeton University Press},
year = 1996}

author = {Jonathan Weiner},
title = {The Beak of the Finch: a Story of Evolution in our Time},
publisher = {Vintage},
year = 1995}

> *Sort of like sex. :-) Read some books by Steven Pinker.*

I have, I have! And I heartily second the recommendation! :-)

> *AVERAGE is the key term. There can be a woman who is taller than the
> average man, or even taller than all men, without changing the fact that
> most men are taller than most women. Second, the standard deviation
> tends to be larger in men. Thus, even if the average is the same, there
> will be more male overachievers, but also more underachievers. Most
> geniuses are male, but so are most idiots.*

Isn't that what I said?!

This truism accords with common experience, and not surprisingly, at least one study of SAT scores ;-/ has been claimed to "verify" it.

> *Fourth, whatever the average behaviour is, there is no justification in
> using this as a basis for discrimination.*

Surely it was clear that I wasn't saying otherwise? (I am not sure if you thought I -was-.)

FWIW, I do believe that professional societies should try to ensure that candidates are advanced on the basis of merit. Anything else is simply self-injurious---- to the -profession-.

And here the trouble starts, because it is not easy to assign an "accurate" or even -rational- linear ordering. But we are mathematical scientists, so surely we, of all groups, have a special responsibility to try to concoct some kind of rational approach! I.e. one supported by theorems and mathematical discussion, so that at least we all know precisely how the system works, and can criticize it on the basis of genuinely, mathematically demonstrable flaws, e.g. "statistical paradoxes". If you want to change the world, prove a better theorem!

[Speaking of paradoxes with political implications, Thomas Jefferson, who pointed out the possibility of paradoxical results in a proposed system for "fairly" apportioning representation, and who tried to concoct a more robust system, would probably have appreciated "Arrow's paradox" more than most of his fellow citizens circa 1785.]

Just to be clear, I too can think of certain –particular– women in our fields who in my own estimate do better research* than most of their male or gender–indeterminate colleagues, and I would expect (hope?) that if career advancement were determined by some rational optimization procedure, these individuals would not be held back.

[*Needless to say, I wish to define "quality of research" by how interesting it is to –me–. So does everyone else; aye, there's the rub! And yes, I know I failed to question whether faculty can perform any useful work other than research.]

But what I was really trying to get at is a little hard to express without further misunderstanding. I haven't the energy to attempt to express myself very clearly, but despite the dangers I'll try to take a stab.

Consider the situation of a contemporary female undergraduate who has done sufficiently well in math/sci courses to seriously consider graduate school, i.e. to consider attempting to pursue a career in math/science, rather than, oh, say, law school.

Now, we all know that intelligent students who did very well in UG classes often experience much difficulty in graduate classes, and that there is apparently no reliable way of predicting this in individual cases (unless the student has had the chance to take graduate courses and has performed well in them). It follows not only that UG students considering career choices, who have asked for advice from those with more experience (e.g. professors, or perhaps current graduate students), are often reduced to placing considerable weight upon lamentably imprecise information, such as averages.

Given this, is it possible that, despite being fully aware of what we just said about abilities averaged over a group versus individual abilities, that she might opt out of graduate school in part because she realizes she can only –guess– about the extent of her –personal– abilities, but she knows the "fact" that women are on average less likely to rise to the top of these professions? In particular, given the second "fact" she knows, that female lawyers are statistically much more prevalent than female physicists? (Hmm... I haven't actually checked that, but I'd be surprised if it weren't so.) I think it is very possible that she –would– opt out, and if so, I suggest that our young woman might in fact be making –the best possible use– (from the perspective of an individual seeking to maximize her potential) of all available information!

IOW, making what is in some sense the optimal choice (on the basis of necessarily partial information) for the –individual–, might not agree at

all, on average, with what seems "fair", or even what is "best for society".

So the question is: should society attempt to correct for this alleged effect, and if so how? I was trying to suggest that maybe society should –not– attempt to correct for such "second order" effects. But from reading press coverage and editorials, I have the strong impression that some commentators would not agree.

Of course, the notion of conflicts of interest between individuals and "society" (or males and females, parents and children, etc.) is not new, and such conflicts of interest frequently arise in evolutionary biology.

See

author = {John Maynard Smith},
title = {Did Darwin Get it Right?: Essays on Games, Sex,
and Evolution},
publisher = {Chapman and Hall},
year = 1989}

author = {John Maynard Smith},
title = {Games, Sex, and Evolution},
publisher = {Harvester–Wheatsheaf},
address = {New York},
year = 1988}

(among others).

> *Pinker's main field of research, by the way, is the development of
> language in children, extolled in his semi–popular book THE LANGUAGE
> INSTINCT.*

author = {Steven Pinker},
title = {The Language Instinct},
publisher = {Morrow},
year = 1994}

I think his books –decreased– in quality over time, alas:

author = {Steven Pinker},
title = {How the Mind Works},
publisher = {Norton},
year = 1997}

author = {Steven Pinker},
title = {The Blank Slate: the Modern Denial of Human Nature},
publisher = {Viking},
year = 2002}

> *Your speculations are nothing new to those familiar with the field.*
> :-)

Hmm... I'd have to reread his books to see whether these alleged similarities are more real than apparent. Maybe you were picking up on the fact that I expected my readers to have read the same bestsellers which I have?

Speaking of which, I didn't already do so, I'd also particularly recommend

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author = {Jared M. Diamond},  
title = {Guns, Germs, and Steel: the fates of Human Societies},  
publisher = {Norton},  
year = 1997}
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author = {Jared M. Diamond},  
title = {Collapse: how Societies Choose to Fail or Succeed}  
publisher = {Viking},  
year = 2005}
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"T. Essel" (vainly attempting to crawl back into a dark crevice)

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Maybe I should adopt an Ozzian signature, averring that nothing I say is in the slightest original? ;-/