

Genetics and All That

Status and Evolutionary Biology

If my real income doubles that is a big win for me, even if yours triples. And yet, if the income of poor people doubles and the income of rich people triples, many will see that as the poor losing out. In [Choosing the Right Pond](#) Robert Frank, an original and interesting economist,¹ explored the implication for economics of the fact that people care about relative as well as absolute outcomes. That fact suggests an obvious question: Why? To explain why humans are as they are, the obvious tool is evolutionary biology.

Humans, like other living creatures, are as if designed for reproductive success. Reproduction requires two sorts of inputs: resources and a mate. If you are a better hunter than I am you will be better able to feed your offspring but that does not make me less able to feed mine. But if, because you are a better hunter than I am, you have more resources, status, whatever matters in our society, you will also be better able to attract a mate.² Mates, unlike game, are in strictly limited — for practical purposes, perfectly inelastic — supply, so the better you are at attracting one or more, the worse my chances of doing so are. That is a good reason for me to wish not only that I should succeed in the hunt but that you should fail. It might even be a reason for me to put some effort into increasing the chance of your failing if suitable opportunities arise.

This theory of why we care about relative status implies some predictions, although I have not tested them. The first is that males should be mainly concerned about their status relative to other males, females about theirs relative to other females, since males are competing with males for mates, females with females.

The second is that males should be more concerned with relative outcomes than females. Wombs are a scarce resource, sperm is not. Even a not very successful female can expect to reproduce, although her success in mate search may determine how much help she gets rearing her children. An unsuccessful male is likely to have no children at all, a successful one many. From the standpoint of reproduction, being male is a high-risk gamble.

The third prediction is that people should be most concerned about relative outcomes in a range near their own level. If Bill Gates increases his wealth from twenty billion dollars to thirty billion, that has no effect on his ability to compete with me for mates; insofar as wealth is the relevant criterion, at twenty billion I've already lost.³ If a homeless man finds a job at McDonalds, that has no effect on his ability to compete with me for mates either. The people I ought to worry about, supposing that I am a male in the mate market, are the men at about my level, the ones who might beat me out in courtship if they were a little richer, or a little handsomer, or ...

That makes it surprising that, in the context of modern politics, people who are not rich often complain about the wealth of those who are. My suspicion is that the pattern still holds at least

¹ Who you will find me arguing with in Chapter XXX

² For evidence of the link between status and reproductive success, see Christopher R. von Rueden and Adrian V. Jaeggi, "[Men's status and reproductive success in 33 nonindustrial societies: Effects of subsistence, marriage system, and reproductive strategy.](#)"

³ That would be less true in a polygynous society where his extra wealth might result in his bidding a few more potential wives away from me.

qualitatively, that the well-off are more likely than the poor to complain about the income of the rich, but the only relevant [source of information](#) I have found online does not support it.

Subjective Status or Fooling Our Genes

When I was an undergraduate at Harvard, a very long time ago, it occurred to me that I was embedded in the ideal social system: Everyone was at the top of his own ladder. The small group of students who put on plays knew that they were the important people; the rest of us were there to provide them an audience. The small group seriously involved in Young Republicans and Young Democrats knew that they were the important people; the rest of us were there to be persuaded to come to a meeting once a year and vote them into the offices that might be the first small stepping stones to a political career. The small group The point occurred to me, as best I remember, after discovering that the foreign student with whom I had been discussing international military matters was the son of the defense minister of Pakistan.

In his world he was a VIP — just like everyone else at Harvard, which made it a society where he could comfortably fit in.

That brings me to the current version of a similar, if less extreme, system. I am part of a lot of different sub-societies. In some I am myself a VIP. In others I am a moderately important person (MIP?), either directly or through my connections with someone else who is a VIP. In others, I am an entirely unimportant person, but I do not spend much time thinking about those.

The human approach to status, like our approach to sex, can be seen as an example of the brain defeating the genes. While reproductive success is the objective of our genes, it is not our objective. Sex is pleasurable, pregnancy sometimes inconvenient, so we have invented birth control and other forms of non-procreative sex so as to get what we want instead of what we are designed for.⁴

Similarly for status. The reason humans want status is that, in the environment in which our species evolved, status, especially but not exclusively for males, led to reproductive success. Important men were more likely to get a mate, more likely to get more than one mate, more able to get the resources to keep their children alive, more likely to get their children into a position where they too would have status and its reproductive advantages. That is less true in the modern environment where almost everyone could produce more offspring than he does.

And yet we still value status. The fact that a major figure in the Open Source movement was familiar with my work gave me no advantage in reproductive success but it did give me a jolt of status-pleasure when I came up to him after he gave a talk, introduced myself as "David Friedman," had him ask me if I was "David Director Friedman," and suddenly became one of the Important People in the room.⁵ Being high status gives us pleasure, a fact brought home to me by the thrill I felt at Eric Raymond's talk when he recognized me and my status suddenly shot up. By choosing to focus on those contexts where we have relatively high status, whether or not they have any relevance to reproductive success, we pervert the genes' tool for our reproduction to serve our pleasure instead, a triumph of the human mind over its genetic puppet masters.

This is one example of a point I first encountered in Richard Dawkins book *The Selfish Gene*. A common theme in science fiction is a revolt of the robots against their human owners.⁶ Dawkins

⁴ An obscene but entertaining [verse version](#) of the argument.

⁵ It also got me invited out to a Chinese restaurant, along with the speaker and the organizers of the talk.

⁶ It is, for one example, a major element of the background of Karl Gallagher's (very good) *Torchship Trilogy*.

points out that it has already happened; we are the robots. We evolved intelligence because intelligence is a useful tool for survival and reproduction. That same intelligence made it possible for us to pursue our objectives, such as status or the pleasure of sex, in ways that did not serve the objectives of the genes.

To see how far we have gone in that direction, consider how we would behave if our primary objective was reproductive success.⁷ Men would pay for the privilege of donating to sperm banks. Women would do the same for egg donation, subject to costs in their direct reproductive success from that more difficult process. Assuming that husband and wife shared the objective, they would produce as many children as they could successfully rear. That is not how we act because we do not share the objective of our genes. There are other things we would rather do.

Given enough time, our genes might solve that problem.

Darwin, Reproduction and Religion⁸

Humans vary in, among other things, their taste for having children. It seems likely that some of that variation is genetic. We are now in an environment where reproductive success is limited mainly by parental choice not resource constraints. It follows that people with more of a taste for having children, are more phyloprogenitive, will on average out-reproduce those who are less, increasing the share of their descendants in the population. In principle, the process should continue until reproductive success is again constrained by resources, a Darwinian version of Malthus' old argument for why a society rich enough so that the cost of children was low could not be in long term equilibrium.

More religious people are, on average, more fertile, not only across societies but within societies. Hence the same process that raises fertility should also make the world more religious, arguably is already doing so.

There is one problem with the reproductive part of argument and another with the religious part. Human generations are long, so human evolution is slow. If we maintained the world more or less as it is for five or ten generations, the logic described might well work itself out, with fertility rates rising and religious belief becoming more common, but since we live in a time of very rapid change driven by technological progress we are unlikely to maintain the world more or less as it is for that long.

Here is a short list of possible technological changes that might reverse one element or another of the equation:

1. Artificial wombs, to convert the cost of childbearing from time and pain to money, giving a reproductive advantage to higher income couples and richer (and, on average, less religious, possibly less phyloprogenitive) societies.
2. Uploading, the ability to reproduce oneself by copying the brain's software to a computer.
3. Advanced virtual reality or very good recreational drugs, providing the illusion of a heaven on earth to compete with religion's (I think illusory) promise of a future heaven, leaving the more

⁷ Strictly speaking, extended reproductive success. My full siblings carry, on average, as many of my genes as my children, so preserving them serves my reproductive success just as producing and preserving my children does.

⁸ I originally picked up this argument from a [post](#) in someone else's blog.

active parts of life, including reproduction, to people with a strong preference for reality over fantasy.

The second problem with the religious part of the argument is that religious belief is not entirely heritable; if it were, western societies would not have become less religious in recent decades.⁹ Even if religious people have more children there is no guarantee that the religious fraction of the population will increase.

Switching from evolutionary biology to introspection gets me to the question of why I in particular have not donated to a sperm bank and would be unlikely to do so for any likely reward. I care about my children, identify with them, only want them to exist if they are going to be reared by parents I think suitable for the job. I might be willing to donate sperm for a couple I knew and strongly approved of as parents, but not for a random couple. That attitude may be unreasonable, since there is evidence that quite a wide range of child rearing strategies work, but, having been very lucky in my parents, I do not like the idea of another me being much less so.

Caring about one's children has obvious value for reproductive success, but perhaps also a cost — in an environment that includes sperm banks.

The Eugenic Bogeyman

Scientists in China [produced](#) two infants from ova edited to disable a gene associated with vulnerability to AIDS. Much of the commentary on their accomplishment was negative; the chief researcher ended up rewarded for his accomplishment with three years imprisonment and a large fine.

Critics of what he had done spoke of the evil of eugenics and the risk it created to the human gene pool, but I find it hard to see much basis for their concern. There were obviously risks which the parents should have been, it is claimed were, informed of, but there are risks to producing a child by the usual technology as well. “Eugenics,” used as a bogey word, confuses two quite different things. Eugenics in the sense of some people deciding that other people will not be permitted to have children is a bad thing. Eugenics in the sense of couples trying to improve the quality of the children they have is a reasonable and unobjectionable activity.

We — my father, myself, and my son — did it the old-fashioned way.

Report on a Successful Breeding Program

My mother claimed that she once taught my father a song well enough so that he could tell if a tune was that song or wasn't. He denied it, said he could only recognize songs by the words. He had married a musical wife. I married, in succession, two musical wives, as did the son of my first marriage. I observed the success of our three-generation long project to breed musical ability back into my father's descendants when my visiting grandchildren sang a song in tune; as the product of the first generation of the program I can recognize a tune although I cannot carry one. A few months later, for my birthday, my grandchildren [demonstrated it again](#).

I use "libertarian eugenics" to describe ways in which people control what children they themselves produce. Selecting one's mate in part on the basis of the children she will produce is a very old

⁹ [Evidence for the U.S.](#)

way of doing so.¹⁰ That is, however, a primitive technology; unless you are very lucky, you may have to sacrifice other desiderata in your mate to do it.

Modern reproductive technology is beginning to take the next step, provide ways of selecting, among the children you and your mate could produce, the ones you do produce. At present that is limited to avoiding some serious genetic diseases, either by IVF followed by selective implantation or by using amniocentesis to identify and abort a fetus with serious genetic problems. Carry the technology a step further, along lines suggested by Robert Heinlein in *Beyond This Horizon*, one of his less successful novels but one with several very interesting ideas in it, and we will be able to pick and choose among the parents' heritable characteristics, producing a child with my memory for poetry and my wife's musical ability but without her poor circulation or my genetics for a bad heart.

Heinlein's idea — I do not know if it was original with him — was to separately analyze the genes of sperm and egg before deciding which egg to combine with which sperm. The problem in doing so is how to analyze a cell without damaging it. Heinlein's ingenious solution took advantage of the facts that egg and sperm each contain half of the full set of genes of the cell from which it is derived and that the process that produces an egg or sperm also produces other bodies with the rest of the genes. Analyze an ordinary cell to get the full genotype, produce sperm and egg in vitro, analyze the extra body or bodies, subtract, and you now know what genes are in a particular egg or sperm. There remains only the difficult problem of linking genes to characteristics well enough to know which ones you want.

According to a [news story](#) published back in 2013, someone was attempting an early version of Heinlein's approach, looking at the [polar body](#) that contains the genes that are not in the egg in order to deduce the genes that are. At least that is what the story seemed to be describing, although there were not enough details to be certain.

Heinlein published the novel, and the idea, in 1942.

Why No Built-in Paternity Testing?

Pair mated species, such as humans and many birds, follow a mating pattern of monogamy tempered by adultery. The female pairs with the best male who will pair with her and help support her offspring then, given the opportunity, gets pregnant by the genetically best male available. Males spend time and effort attempting to engage in extra-pair copulations and trying to prevent their mates from doing so.

The obvious solution to the problem this raises for paired males is paternity testing, now made possible by technology. A male who can tell which of his mate's children he fathered can decline to help support the others, giving his mate a strong incentive not to cheat on him. Why was not that solution implemented long ago by Darwinian evolution? Why do males in such species not have some way of identifying their offspring?

¹⁰ “You don’t particularly care about children?”

“Not children, in the lump. But I think it’s just possible that I might some day come to want—”

“Your own?”

“No—yours.”

Dorothy Sayers, *Busman’s Holiday*.

One possible answer is an arms race. It is in the interest of males to be able to identify children born by their mates to other males, in the interest of females for them not to be able to do so, since it is in the interest of the female to be able to fool the male into thinking that another male's children are his.

I do not know why the females seem to have won this particular conflict.