real-world economics review, issue no. 95
subscribe for free

The rise of human capital theory

Blair Fix [York University, Toronto, Canada]*

Abstract
Today, human capital theory dominates the study of personal income. But this has not always been so. In this essay, I chart the rise of human capital theory, and compare it to the rise (and fall) of *eugenics*. The comparison, I argue, is an apt one. Eugenics and human capital theory both focus on isolated traits of individuals. By doing so, both theories neglect the *social* nature of human behavior.

The most pernicious scientific theory?

If there was an award for the most pernicious scientific idea ever, what theory should get first prize? I would vote for eugenics, a theory that claims we can "improve" humanity through selective breeding (Galton, 1904).

If there was a second prize, I would give it to human capital theory. I think of human capital theory as "eugenics light". It purges the idea that abilities are innate (and that we should selectively breed the "fit"). But human capital theory keeps the Nietzschean idea that humanity's success can be attributed mostly to gifted *übermensch* (Nietzsche, 2005).

Among us, human capital theory claims, walk individuals who are unfathomably productive. These übermensch produce more in an hour than most of us do in a week. Take just 1% of these top individuals, and you will find that they out produce the bottom half of society![1] According to human capital theory, then, we could do away with half of society with no great loss to economic output. Of course, few human-capital theorists advocate such atrocities. But my point is that their theory contains the seeds of eugenics … even Nazism.

The ethical problems with eugenics and human capital theory are easy to spot. But what about the *scientific* problems? These are more difficult to tease out. Eugenics is based on the hard truth that many traits are heritable. Similarly, human capital theory is based on the reality that some people earn hundreds of times more income than others. Where both theories go wrong, however, is that they misunderstand humanity's *social* nature.

Yes, many individual traits are heritable. But it is a fallacy that traits that are good for individuals are also good for society. That is the core scientific flaw in eugenics. And yes, it is true that some people earn far more than others. But it is a fallacy that this income is caused by traits of the individual. In reality, income is a *social* trait.

* I thank John Medcalf, Mike Tench, Robin Shannon, Brent Gulanowski, Tom Ross, Steve Keen, Hilliard MacBeth, Joe Clarkson, Grace and Garry Fix, Pierre and Norbert Hornstein for their support.

[1] In the United States in 2019, the top 1% of earners took home 18.7% of all income. The bottom 50% of earners, in contrast, took home just 13.5% of all income. (Data is from the World Inequality Database, pre-tax income share of US adults, equal splits.) If human capital theory is correct, this income indicates productivity. So the top 1% produced more than the bottom half of society. And the average member of the top 1% produced abut 70 times more than a member of the bottom 50%. (The math: 18.7% / 13.5% × 50 = 69.2). So an übermensch member of the top 1% produced more in an hour than a bottom-50 percenter did in a week. Or so human capital theory would have us believe.

My goal in this essay is not to rigorously debunk human capital theory. (For a discussion of the problems with human capital theory, see Fix, 2018b.) Instead, I am going to chart its rise and speculate about its eventual fall. I will do so by looking at the rise and fall of eugenics. What is ominous is that the theory that debunks eugenics is today still more obscure than eugenics itself. In a century, will something similar hold for the theory that debunks the idea of human capital?

The rise and fall of eugenics

When Charles Darwin published his opus *On the Origin of Species* in 1859, it was only a matter of time before his ideas would be abused.[2] Darwin argued that species arose by survival of the fittest. Each generation, some individuals reproduced more than others, passing on their traits to the next generation. Over time, this caused organisms to adapt to their environment, eventually giving rise to new species. It was evolution by natural selection.
In the wild, this process is blind. (Nature has no goal.) But when humans entered the equation, natural selection started to have a conscious overseer. For millennia, humans have selectively bred domestic animals to have traits that we desired. Darwin called this guided process "artificial selection". Its success in creating distinct breeds of domestic animals, he argued, was evidence for the wider process of evolution by natural selection.

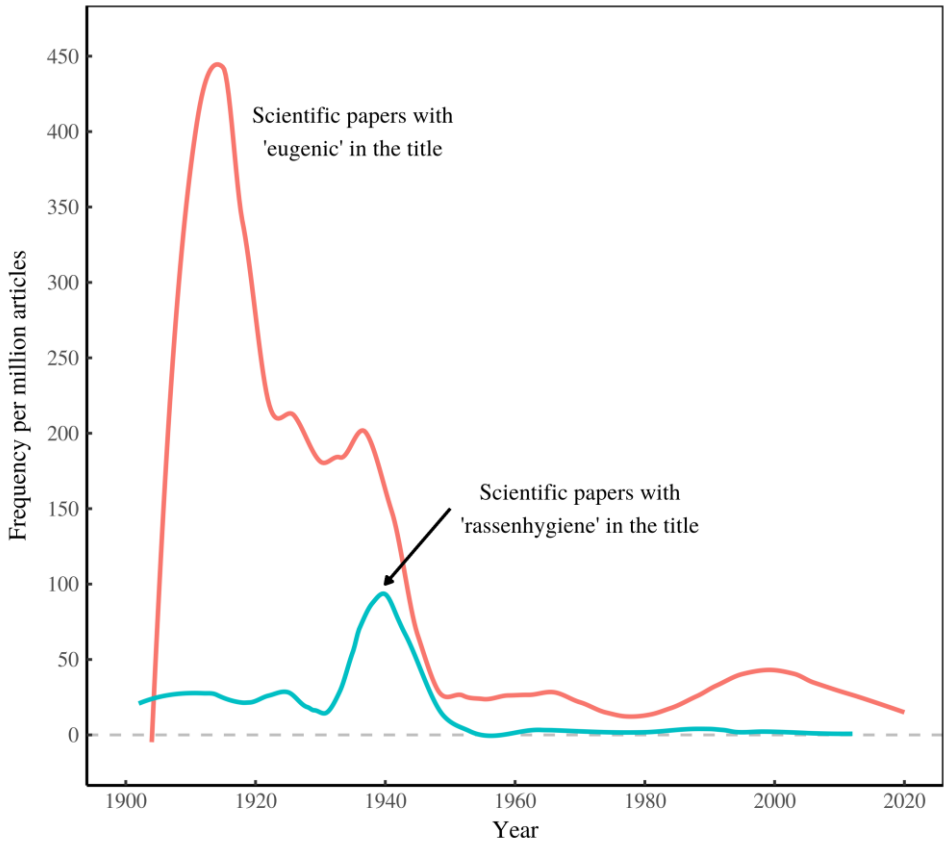
If we could change the traits of domestic animals through selective breeding, it seemed plausible that we could do the same with *humans*. And with that idea, *eugenics* was born. The word – which means "well-born" – was coined by 19th-century polymath Francis Galton, who was himself of impeccable pedigree. He was Charles Darwin's half cousin.

The prospect of selectively breeding humans raises obvious ethical problems. It requires first deciding who is "well-born" and who is not. (What are the criteria for this decision? And more importantly, who gets to decide?) And once this decision is made, the reproductive rights of the non-well-born must be removed. That rings of fascism. Despite the dubious ethics, eugenics became shockingly popular in the early 20th century. In the United States, "feeble-minded" individuals were sterilized en masse (Reilly, 1985; Sofair & Kaldjian, 2000). And later, Nazi Germany simply exterminated "unfit" individuals by the millions (Bloxham, 2009).

This Nazi monstrosity is written in mass graves throughout Europe. But it is also written in the scientific record. Figure 1 shows the frequency of the term "eugenic" in scientific papers. Its use exploded at the turn of the 20th century and remained popular until the end of World War II. It was not until the horrors of the Holocaust were revealed that eugenics became disgraced. On that front, the German term for eugenics – "rassenhygiene" (racial hygiene) – peaked ominously as the Holocaust was perpetrated.

[2] Actually, the seeds of abuse appear in the full title of Darwin's opus. The main title (still used today) was *On the Origin of Species by Means of Natural Selection*. The subtitle, however, has fallen out of favor. Darwin called it *the Preservation of Favoured Races in the Struggle for Life*.

Figure 1. The rise and fall of eugenics
I have plotted here the relative frequency of scientific papers containing the words "eugenic" and "rassenhygiene" in their titles. I have smoothed the trend using a LOESS regression. For data sources, see Sources and methods.

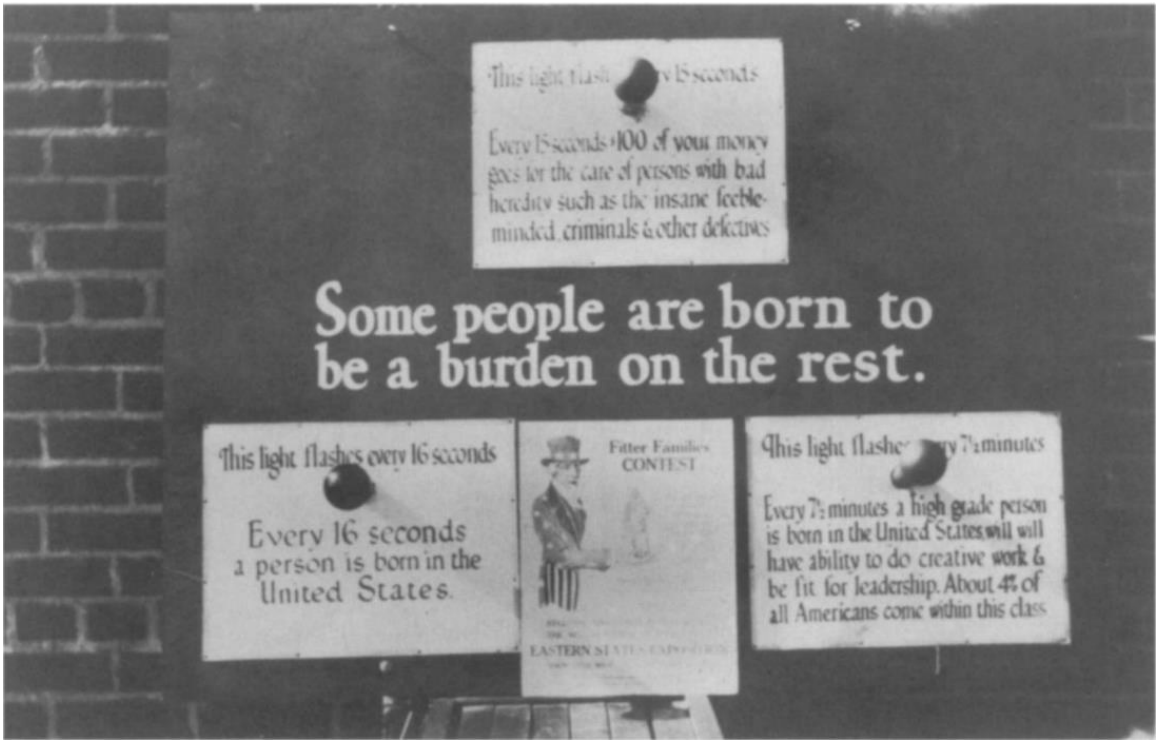


Productive individuals, productive society?

Barbarous as it is, let's put aside the ethical problems with eugenics. Even then, the science is dubious. The premise is that if we selectively breed for traits that we (the eugenicists) find desirable, the spread of these traits will lead to a better society. What are these "good" traits? I will let the eugenicists speak for themselves. Figure 2 shows a eugenics poster from 1926. It reads:

> **"Some people are born to be a burden on the rest.**
> Every 15 seconds $100 of your money goes for the care of persons with bad heredity such as the insane feeble-minded, criminals & other defectives.
> Every 7½ minutes a high grade person is born in the United States will (sic) will have ability to do creative work & be fit for leadership. About 4% of all Americans come within this class" (Eugenics poster from Selden, 2005).

Figure 2. A burden on the rest
A eugenics poster from the 1926 Philadelphia Sesqui-Centennial Exhibition.



Source: Selden (2005).

The logic in this eugenics poster is hard to miss. Some people, the eugenicists claim, are unproductive and do not contribute to society. These people should reproduce less. Meanwhile, "high-grade" productive individuals should reproduce more. The result will be a better society.

This sentiment is morally repugnant, yes. But might it be true? If we selectively bred "productive" individuals, would the result be a more productive society? Fortunately, no one has done this experiment on humans. But it has been done on domestic animals. And the results completely undermine the eugenicists' arguments.

In the 1990s, geneticist William Muir conducted experiments on chickens to see what would improve egg-laying productivity (Muir & Craig, 1998; Muir, 1996; Muir & Wilson, 2016). In one trial, he did exactly what the eugenicists recommend – he let only the most productive hens reproduce. The results were disastrous. Egg-laying productivity did not increase. It *plummeted*. Why? Because the resulting breed of hens was psychopathic. Instead of producing eggs, these "uber-hens" fought amongst themselves, sometimes to the death.

The reason this experiment did not work is that egg-laying productivity is not an isolated property of the individual hen. It is a joint property of the hen and her social environment. In Muir's experiment, the most productive hens laid more eggs not because they were innately more productive, but because they *suppressed* the productivity of less dominant chickens. By selecting for individual productivity, Muir had inadvertently bred for social dominance. The result was a breed of bully chicken that could not tolerate others.

The lesson here is that in social animals, traits that can be *measured* among individuals (like productivity) may not actually be traits *of* the individual. Instead, they are joint traits of both the individual and their social environment. Here is evolutionary biologist David Sloan Wilson reflecting on this fact:

> "Muir's experiments … challenge what it means for a trait to be regarded as an individual trait. If by 'individual trait' we mean a trait that can be measured in an individual, then egg productivity in hens qualifies. You just count the number of eggs that emerge from the hind end of a hen. If by "individual trait" we mean the process that resulted in the trait, then egg productivity in hens does not qualify. Instead, it is a social trait that depends not only on the properties of the individual hen but also on the properties of the hen's social environment" (Muir & Wilson, 2016).

A key problem with eugenics is that it neglects the social nature of human traits. It assumes that productivity is an innate trait of the individual, and that breeding for this trait would lead to a better society. It is a seductive idea that is deeply flawed. In all likelihood, selectively breeding people for productivity would, like chickens, lead to a psychopathic strain of human.

The rise of human capital theory

After the horrors of the Holocaust, eugenics fell into disrepute. As a result, few people today dare argue that we should selectively breed humans for productivity. Still, the sentiment behind eugenics (that some people are far more productive than others) lingers on in mainstream academia. It survives – even thrives – in *human capital theory*.

The ground work for human capital theory was laid just as eugenics fell out of favor. In the 1950s, economists at the University of Chicago tackled the question of individual income.[3] Why do some people earn more than others? The explanation that these economists settled on was that income resulted from *productivity*. So a CEO who earns hundreds of times more than a janitor does so for a simple reason: the CEO contributes far more to society.

The claim that income stems from productivity was not new. It dated back to the 19th-century work of John Bates Clark (1899) and Philip Wicksteed (1894), founders of the neoclassical theory of marginal productivity.[4] Clark and Wicksteed, though, were concerned only with the income of social *classes*. What the Chicago-school economists did was expand productivist theory to *individuals*.

Doing so required inventing a new form of capital. The idea was that individuals' skills and abilities actually constituted a stock of capital – *human capital*. This stock made individuals more productive, and hence, earn more income. Figure 3 shows key papers that initiated human capital theory.

[3] It is no coincidence that human capital theory arose out of the University of Chicago. The school was established in 1890 with a $600,000 donation from John D. Rockefeller. In return, the school became a bastion of neoclassical economics. Rockefeller later described his donation as "the best investment I ever made" (Collier & Horowitz, 1976; quoted in Nitzan & Bichler, 2009).

[4] We can go further and trace productivist sentiment back to the 17th-century philosopher John Locke, who argued that property comes from the exertion of productive labor (Locke, 1689).

Figure 3. Key papers that initiated human capital theory

The theory of human capital began in the late 1950s and early 1960s with papers by Chicago-school economists Gary Becker, Jacob Mincer, and Theodore Schultz. Pictured here from top to bottom: Becker (1962) and the 2nd edition of Becker (1964); Mincer (1958) and Mincer (1974); Schultz (1961) and (1970).

INVESTMENT IN HUMAN CAPITAL: A THEORETICAL ANALYSIS[1]

GARY S. BECKER

Columbia University and National Bureau of Economic Research

Human Capital

A THEORETICAL AND EMPIRICAL ANALYSIS, WITH SPECIAL REFERENCE TO EDUCATION

SECOND EDITION

BY

GARY S. BECKER

University of Chicago

THE JOURNAL OF POLITICAL ECONOMY

Volume LXVI AUGUST 1958 *Number 4*

INVESTMENT IN HUMAN CAPITAL AND PERSONAL INCOME DISTRIBUTION

JACOB MINCER

City College of New York

PROGRESS IN HUMAN CAPITAL ANALYSES OF THE DISTRIBUTION OF EARNINGS*

Jacob Mincer

The American Economic Review

VOLUME LI MARCH 1961 NUMBER ONE

INVESTMENT IN HUMAN CAPITAL*

By THEODORE W. SCHULTZ

THE RECKONING OF EDUCATION AS HUMAN CAPITAL • T. W. SCHULTZ • THE UNIVERSITY OF CHICAGO

The idea that skills constituted “human capital” was initially greeted with skepticism. For one thing, the term itself smacked of slavery. (Capital is property, so “human capital” implies human property.) For another, human capital theory overtly justified inequality. It implied that no matter how fat their incomes, the rich always earned what they produced. Any attempt (by the government) to redistribute income would therefore “distort” the natural order. During the 1950s and 1960s, there was little tolerance for such views. It was the era of welfare-state expansion, driven by Keynesian-style thinking. Yes, big government may have been “distorting” the free market – but society seemed all the better for it.

Until the 1970s, human capital theory remained obscure. But then politics began to change. In the words of Ronald Reagan, “People were tired of wasteful government programs and welfare chisellers” (1990). The welfare system was not a social safety net, Reagan declared. It was a “creator and reinforcer of dependency” (1987). Reagan’s language, you will note, is eerily similar to the eugenics sentiment of old:

> “Some people are born to be a burden on the rest.”

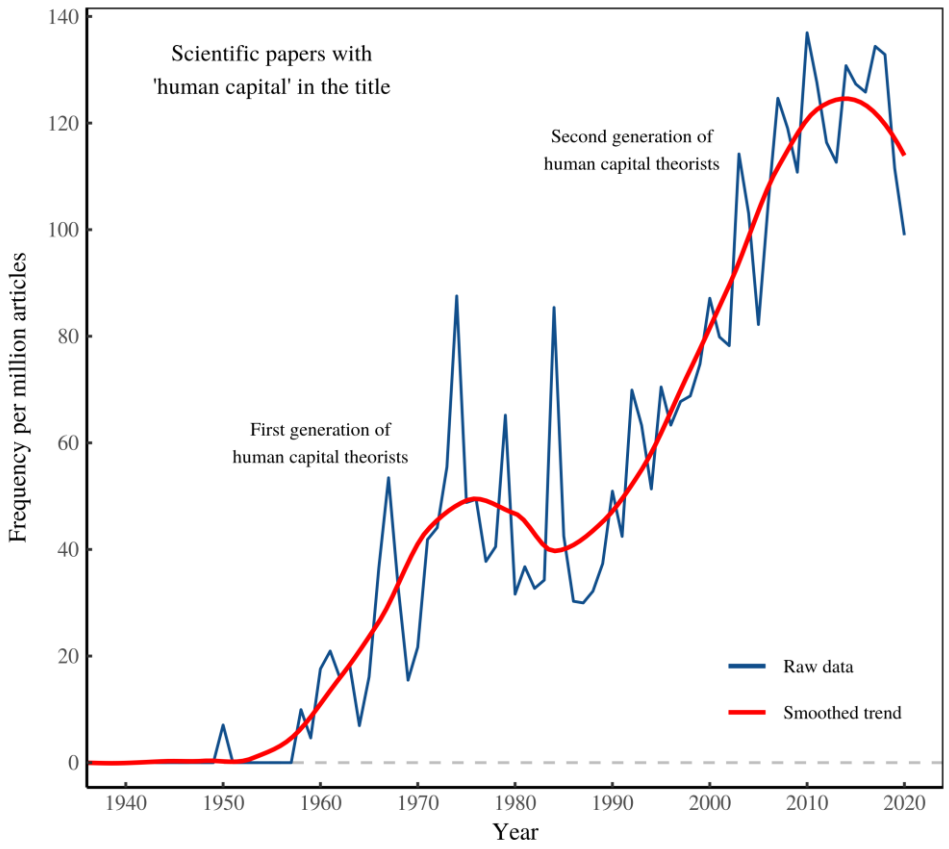
Yes, Reagan removed the crass genetic component. But the sentiment remained the same:

> "Some people are a burden on the rest."

The stage was set for a return to eugenics-style thinking – to the idea that the poor were a burden on the rich (not the other way around). As a result, the fortunes of human capital theory rose.

Figure 4 tracks this rise. I have plotted here the portion of scientific papers that contain the words "human capital" in their title. The first spat of papers appeared in the late 1950s and early 1960s, authored by Chicago-school economists Jacob Mincer, Gary Becker, and Theodore Schultz. This trio constituted the first generation of human capital theorists. By the 1970s they were famous, but their academic output soon tapered off.[5]

Figure 4. The rise of human capital theory
I have plotted here the frequency of the term "human capital" in the titles of scientific papers. The blue line shows raw data. The red line shows the smoothed trend. For data sources, see Sources and methods.



In the 1990s, a second generation of economists took up the human-capital mantle. By then, neoliberal politics was in full swing. The fact that human capital theory explicitly justified inequality was no longer a liability. It was a *selling point*. In 1999, for instance, Chicago-school

[5] A human capital theorist would say that Becker, Mincer and Schultz's output tapered with age because their human capital (much like a used car) *depreciated* with time.

economist Finis Welch delivered a lecture on human capital theory in which he declared that "inequality is an economic '*good*'" (Welch, 1999, emphasis added). As Figure 4 shows, human capital theory proliferated during this inequality-loving era. (Unsurprisingly, so did income inequality. See Piketty, 2014.)

Today, the fortunes of human capital theory seem to have peaked. Like eugenics before it, will human capital theory soon fall into disrepute? Or are we headed for a third wave of human-capital propaganda? It is hard to say. But what is scary is that eugenics collapsed not from any scientific reckoning, but because of a genocide. Will human capital theory collapse only when we plumb the depths of despotism? I do not want to find out.

Fiction over fact

As a scientist, I am fascinated by the human ability to delude ourselves – to choose convenient fiction over inconvenient fact. On that front, the collapse of eugenics (Figure 1) appears to be a victory. But it is only a partial one. Eugenics collapsed for ethical reasons (it produced a genocide). Yet the scientific reasons why eugenics is wrong remain obscure.

We can see the scientific flaws by returning to William Muir's chicken experiment. I have already told you about his psychopathic chickens, created by breeding the most productive hens. But I have not told you about his alternative trial. In it, he bred the most productive *group* of chickens. The result was an astonishing increase in egg-laying productivity.

The reason this group selection worked is that chickens are *social* animals. That means productivity is influenced by the social environment. By selecting productive groups, Muir selected for egg-laying ability, but also for sociality. The resulting social hens flourished together.

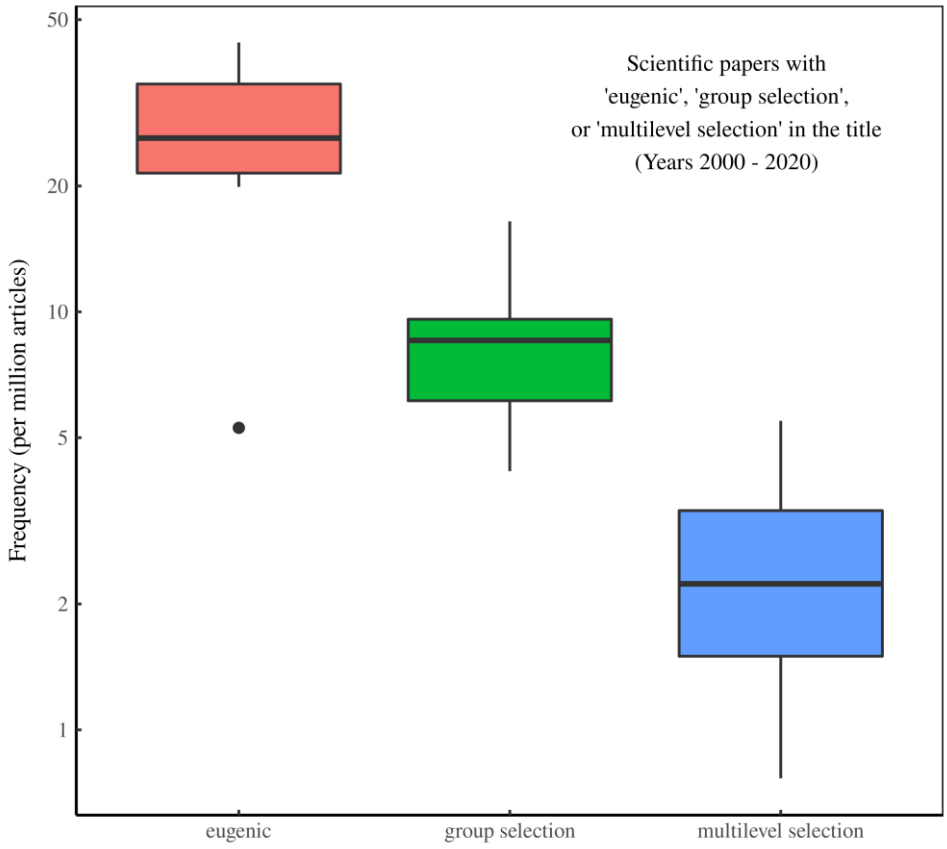
Something similar holds true for humans. The abilities of individuals cannot be separated from the social environment in which they occur. For this reason, any selective breeding based on individual traits is likely to have unintended consequences. If Muir's chicken experiment is any indication, breeding übermensch would not create an uber-productive society. It would create a psychopathic one.

The reason comes down to the unit of selection. As social animals, humans have been strongly shaped by the selection of *groups*. This group selection has tended to suppress selfish tendencies that are otherwise beneficial for individuals (Sober & Wilson, 1999; Wilson, 1997, 2015; Wilson & Wilson, 2007).

Back to eugenics. Yes, eugenics has collapsed into disrepute. And yet the reasons why it is scientifically flawed remain obscure. Today, papers containing the word "eugenic" in their title still outnumber those containing the word "group selection" or "multilevel selection" (Figure 5).[6] No, these modern eugenics papers are not *advocating* eugenics … they are investigating its history. Still, they appear not to be discussing (in their titles) a key scientific flaw in eugenics theory.

[6] The idea behind "multilevel selection" is that natural selection can act on any unit, ranging from "genes", to "individuals" to "groups of individuals". Multilevel selection theory recognizes that multicellular "individuals" are in fact just groups of organisms that are particularly cohesive (Okasha, 2005; Wilson, Van Vugt, & O'Gorman, 2008).

Figure 5. Eugenics is now obscure … but so are its scientific alternatives
I have plotted here the relative frequency of papers containing the word "eugenic", "group selection", or "multilevel selection" in their title. Data covers the years 2000–2020. Note that the vertical axis uses a log scale. For data sources, see Sources and methods.



Now to human capital theory. If, in the future, human capital theory falls into disrepute, my guess is that its scientific flaws will remain obscure. Let's review these flaws.

Human capital theory supposes that income stems from productivity, and that this productivity is an *isolated trait of the individual*. This thinking, when taken to the extreme, is ludicrous. It implies that an Egyptian Pharaoh was thousands of times more productive than his slaves. Moreover, because this productivity was embodied in the Pharaoh, he could do away with his slaves and still retain his wealth. It gets worse. According to the logic of human capital theory, the Pharaoh's slaves were actually a *burden* on the kingdom's per capita productivity. If the Pharaoh exterminated them, per capita productivity would skyrocket.[7]

[7] Imagine an economy consisting of the Pharaoh and 1000 slaves. In terms of living standard, imagine that the Pharaoh earns 1000 times the "income" of the average slave. In human capital theory, that means the Pharaoh is 1000 times more productive than each slave. With this "fact" in hand, let's do some productivity accounting. Let the productivity of a slave be 1. We find that national productivity per person is roughly double the productivity of a slave:

$$\text{productivity per capita} = \frac{(1\ \text{Pharaoh} \times 1000) + (1000\ \text{slaves} \times 1)}{1001\ \text{people}} \approx 2$$

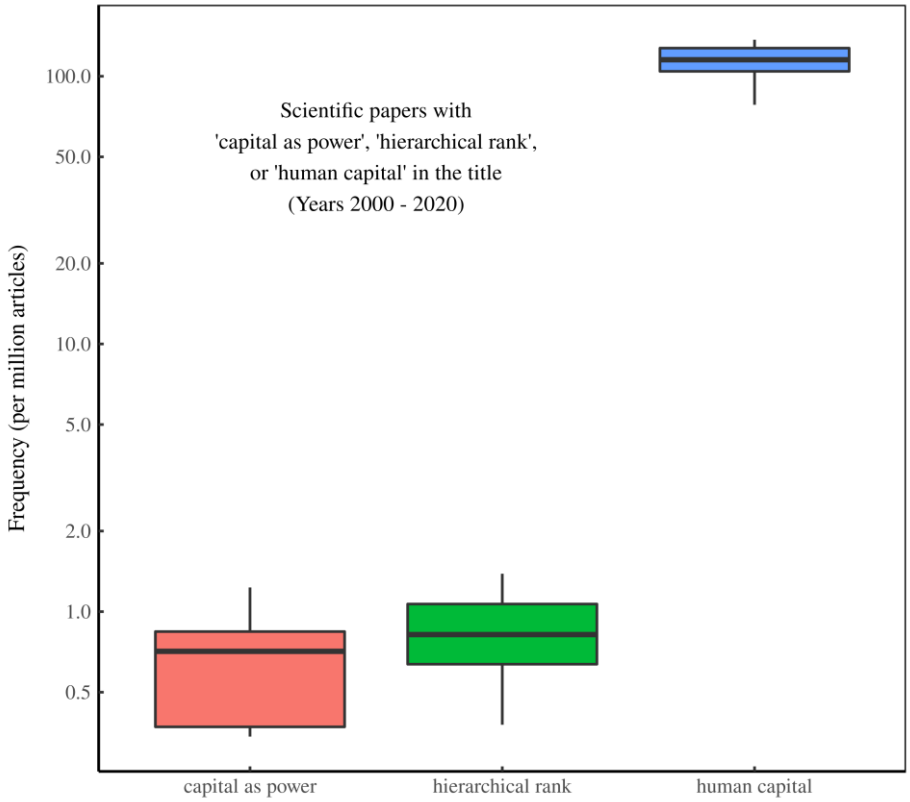
According to human capital theory, if the Pharaoh wants to increase national productivity, he should exterminate the slaves. Per capita productivity will then grow by a factor of 500:

In the real world, things are rather different. The truth is that the Egyptian Pharaoh owed his wealth not to human capital, but to his tremendous *power*. He sat atop a massive hierarchy – an army of slaves who answered his beck and call. Do away with the slave army and the Pharaoh's wealth would vanish.

When we apply human capital theory to a feudal society, we recognize that it is nonsense. But when applied to our own society – as economists do every day – human capital theory passes for "science". Yet reality remains the same. Today (as ever) wealth and income stem from power.

There are a variety of theories that acknowledge the realities of power. Jonathan Nitzan and Shimshon Bichler's (2009) theory of "capital as power" is one. My own investigation of how income relates to hierarchical rank is another (Fix, 2018a, 2019, 2020). The truth, though, is that these theories are flies on the human-capital elephant. As Figure 6 shows, scientific articles with "human capital" in the title outnumber those with "capital as power" or "hierarchical rank" by a *factor of 100*.

Figure 6. Flies on the human-capital elephant
I have plotted here the relative frequency of scientific papers containing the words "capital as power", "hierarchical rank" or "human capital" in their title. Data covers the years 2000–2020. Note that the vertical axis uses a log scale. For data sources, see Sources and methods.



$$\text{productivity per capita} = \frac{1\ \text{Pharaoh} \times 1000}{1\ \text{person}} = 1000$$

Never mind that in reality, the Pharaoh's wealth depends entirely on his army of slave labor. In human capital theory, reality is turned on its head — the *slaves are a burden on the Pharaoh*.

In the future, human capital theory (like eugenics before it) may fall into disrepute. In that case, the number of human-capital papers will surely shrink. But will theories that acknowledge the realities of power become wildly popular? My guess is no.

Again, we can take a cue from the fall of eugenics. Eugenics is scientifically flawed because it conceives of traits as residing in the individual, not their social environment. Yet when eugenics collapsed, the theory of group selection (which focuses on the social environment) did not become wildly popular. Why? A big reason is ideological. Like economics, biology has been seduced by methodological individualism – the dogmatic focus on traits of individuals.

When it comes to human capital theory, the problem is even worse. Here, when we expose the realities of power (a social trait), we undermine the legitimacy of the social order. That is a dangerous business. It can be done safely in obscurity. But if the realities (and injustices) of power become widely known, that means the social order has been put into question. That is good … if it leads to a more just society. But often, widespread discontent leads to reactionary repression.

If human capital theory someday becomes the fly on the power-theory-of-income elephant, it would signal not only a scientific revolution, but also a social one. I doubt I will live to see it happen. And if I do, I have no idea what type of society would emerge from the other side.

Sources and methods

Data and code used in this paper are available at the Open Science Framework: osf.io/btv8c/
To measure the word frequency in the titles of scientific papers, I use metadata from the Sci-Hub database. Sci-Hub houses roughly 80 million papers. The Sci-Hub metadata is available from Library Genesis: gen.lib.rus.ec/dbdumps/. The raw data comes as an SQL database dump. I have built an R function that can parse the SQL data, available at Github: github.com/blairfix/read_sql.

References

Becker, G. S. (1962) “Investment in human capital: A theoretical analysis.” *Journal of Political Economy*, *70*(5, Part 2), 9–49.

Becker, G. S. (1964) *Human capital: A theoretical and empirical analysis, with special reference to education*. University of Chicago Press.

Bloxham, D. (2009) *The final solution: A genocide*. Oxford University Press, USA.

Clark, J. B. (1899) *The distribution of wealth*. New York: Macmillan.

Collier, P., & Horowitz, D. (1976) *The Rockefellers: An American dynasty*. Henry Holt & Company.

Darwin, C. (1859) *On the origin of species*. London: John Murray.

Fix, B. (2018a) “Hierarchy and the power-law income distribution tail.” *Journal of Computational Social Science*, *1*(2), 471–491.

Fix, B. (2018b) “The trouble with human capital theory.” *Real-World Economics Review*, *86*, 15–32.

Fix, B. (2019) “Personal income and hierarchical power.” *Journal of Economic Issues*, *53*(4), 928–945.

Fix, B. (2020) "How the rich are different: Hierarchical power as the basis of income size and class." *Journal of Computational Social Science*, 1-52.

Galton, F. (1904) "Eugenics: Its definition, scope, and aims." *American Journal of Sociology*, *10*(1), 1-25.

Locke, J. (1689) *Second treatise of government: An essay concerning the true original, extent and end of civil government*. John Wiley & Sons.

Mincer, J. (1958) "Investment in human capital and personal income distribution." *Journal of Political Economy*, *66*(4), 281-302.

Mincer, J. (1974). *Progress in human capital analysis of the distribution of earnings*. National Bureau of Economic Research Cambridge, Mass., USA.

Muir, W., & Craig, J. (1998) "Improving animal well-being through genetic selection." *Poultry Science*, *77*(12), 1781-1788.

Muir, W. M. (1996) "Group selection for adaptation to multiple-hen cages: Selection program and direct responses." *Poultry Science*, *75*(4), 447-458.

Muir, W. M., & Wilson, D. S. (2016) "When the strong outbreed the weak: An interview with William Muir." https://evolution-institute.org/when-the-strong-outbreed-the-weak-an-interview-with-william-muir/

Nietzsche, F. W. (2005) *Thus spoke zarathustra: A book for everyone and nobody*. Oxford University Press, USA.

Nitzan, J., & Bichler, S. (2009) *Capital as power: A study of order and creorder*. New York: Routledge.

Okasha, S. (2005) "Multilevel selection and the major transitions in evolution." *Philosophy of Science*, *72*(5), 1013-1025.

Piketty, T. (2014) *Capital in the twenty-first century*. Cambridge: Harvard University Press.

Reagan, R. (1987) "Radio address to the nation on welfare reform." *Ronald Reagan Presidential Foundation & Institute*. https://www.reaganfoundation.org/ronald-reagan/reagan-quotes-speeches/radio-address-to-the-nation-on-welfare-reform/

Reagan, R. (1990) *An American life: The autobiography*. Simon; Schuster.

Reilly, P. R. (1985) "Eugenic sterilization in the United States." In *Genetics and the law III* (pp. 227-248). Springer.

Schultz, T. W. (1961) "Investment in human capital." *American Economic Review*, *51*(1), 1-17.

Schultz, T. W. (1970) "The reckoning of education as human capital." In *Education, income, and human capital* (pp. 297-306) NBER.

Selden, S. (2005) "Transforming better babies into fitter families: Archival resources and the history of the American eugenics movement, 1908-1930." *Proceedings of the American Philosophical Society*, 199-225.

Sober, E., & Wilson, D. S. (1999) *Unto others: The evolution and psychology of unselfish behavior*. Harvard University Press.

Sofair, A. N., & Kaldjian, L. C. (2000) "Eugenic sterilization and a qualified nazi analogy: The United States and Germany, 1930-1945." *Annals of Internal Medicine*, *132*(4), 312-319.

Welch, F. (1999) "In defense of inequality." *American Economic Review*, *89*(2), 1-17.

Wicksteed, P. H. (1894) *An essay on the co-ordination of the laws of distribution (1932 edition)*. London: London School of Economics.

Wilson, D. S. (1997) "Altruism and organism: Disentangling the themes of multilevel selection theory." *The American Naturalist*, *150*(S1), S122–S134.

Wilson, D. S. (2015) *Does altruism exist? Culture, genes, and the welfare of others*. Yale University Press.

Wilson, D. S., Van Vugt, M., & O'Gorman, R. (2008) "Multilevel selection theory and major evolutionary transitions: Implications for psychological science." *Current Directions in Psychological Science*, *17*(1), 6-9.

Wilson, D. S., & Wilson, E. O. (2007) "Rethinking the theoretical foundation of sociobiology." *The Quarterly Review of Biology*, *82*(4), 327-348.

Author contact: blairfix@gmail.com

SUGGESTED CITATION:
Fix, Blair (2021) "The rise of human capital theory." *real-world economics review*, issue no. 95, 22 March, pp. 29-41, http://www.paecon.net/PAEReview/issue95/Fix95.pdf.

You may post and read comments on this paper at https://rwer.wordpress.com/comments-on-rwer-issue-no-95/