

Progress

Class 6 - Great Men and Women

Kevin A. Bryan - Toronto Rotman - Oct 22 2025

After class notes in Red

No great man lives in vain. The History of the world is but the Biography of great men.

Carlyle, On Heroes...

Not that no one else contributes! But that the genius of the few drives history. I should clarify that modern historians DO NOT LIKE Great Man Theory. And neither do economists like Carlyle - so bigoted he calls us "the dismal science" because many economists believed in the equality of the races and argued against slavery, and so bigoted he was anti-*Irish* ("become British or become extinct"). Golly!

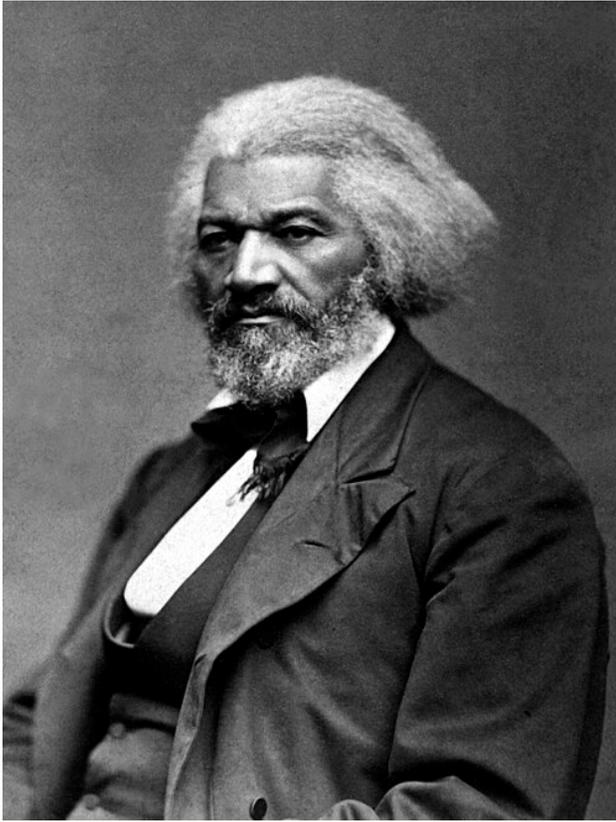
"Universal History, the history of what man has accomplished in this world, is at bottom the History of the Great Men who have worked here. They were the leaders of men, these great ones; the modellers, patterns, and in a wide sense creators, of whatsoever the general mass of men contrived to do or to attain; all things that we see standing accomplished in the world are properly the outer material result, the practical realisation and embodiment, of Thoughts that dwelt in the Great Men sent into the world..." - you can see he doesn't mean only Great Men matter

No great man lives in vain. The History of the world is but the Biography of great men.

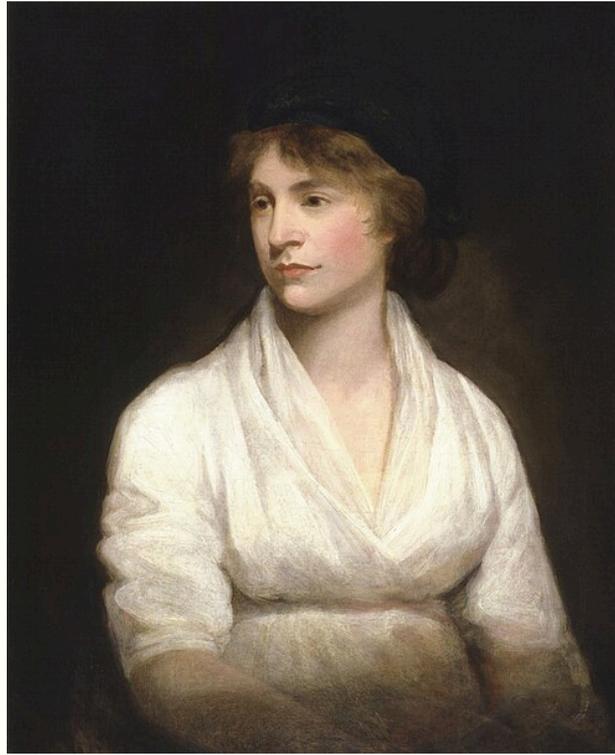
Carlyle, On Heroes...

(We mean Great as in Great Depression, not as in great vacation!)

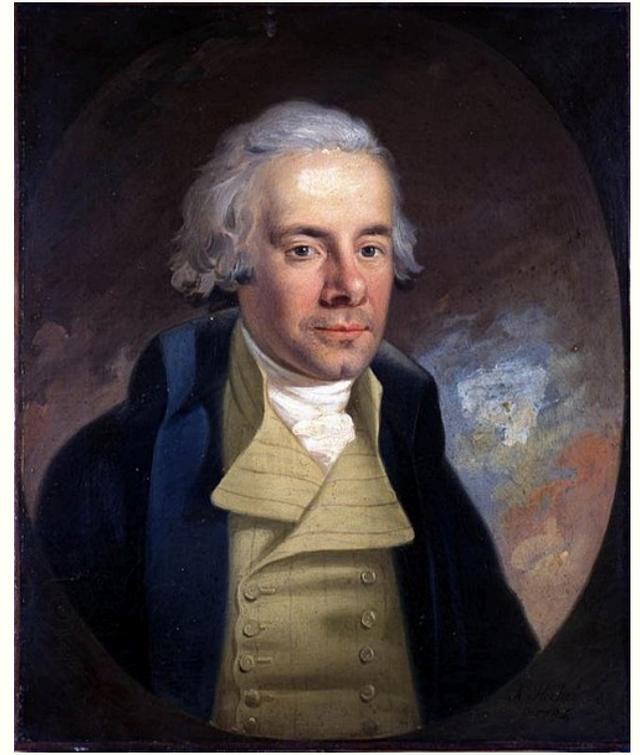
That is, great as in consequential. In this case, a Hitler or a Pol Pot would be great in their impact on the world, but certainly not their morality!



Douglass



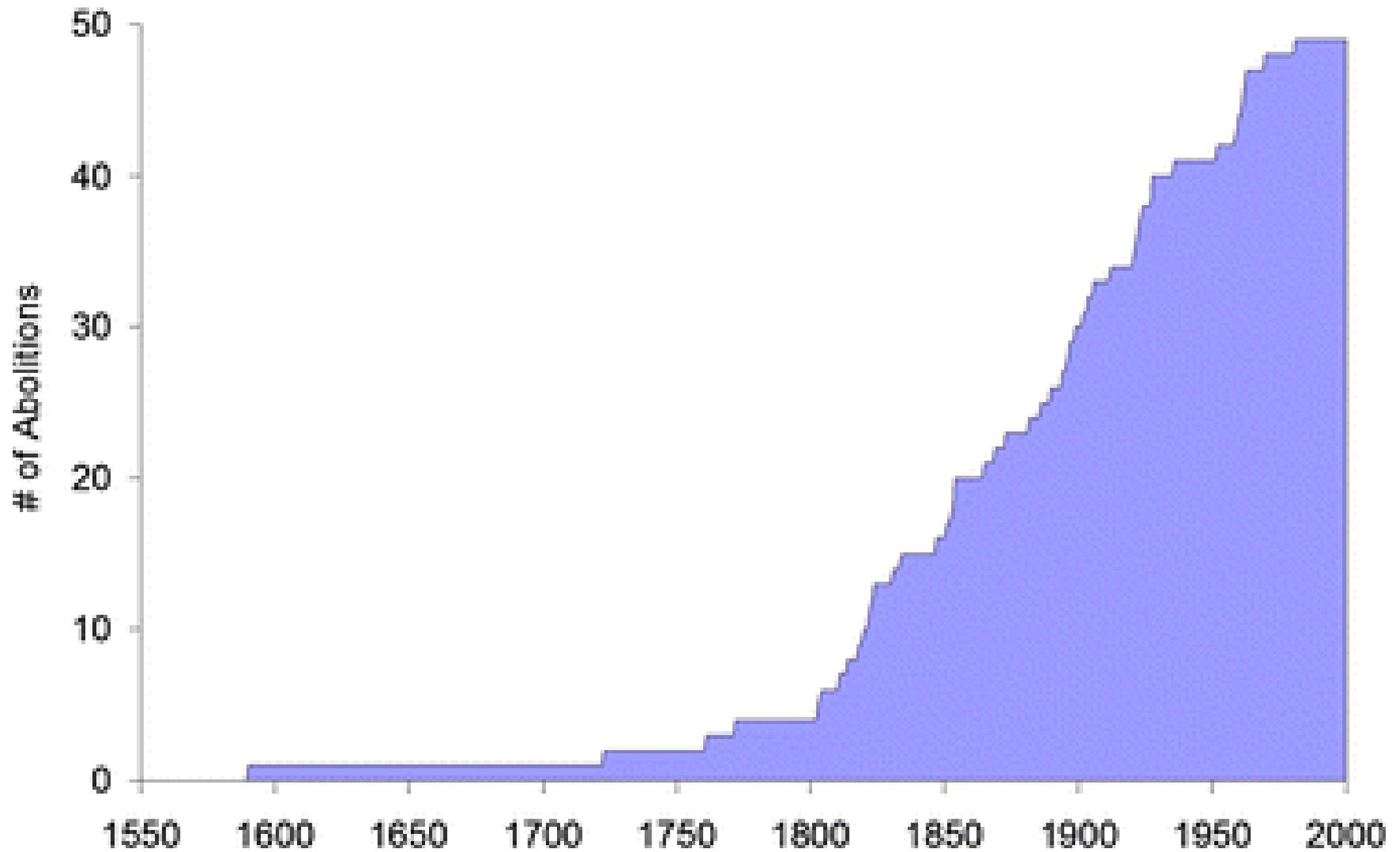
Wollstonecraft



Wilberforce

These folks were critical in ending slavery (and bringing forward the idea of general human rights), or were they? That is, see the next slide.

Timeline for Abolition of Slavery



Or was it just right place time, since slavery ends all over the world at almost the same time? Or maybe the Douglasses, Wilberforces, and Wollstonecrafts influenced other folks, so were even *more* influential than you thought? How shall we know? This is a question that can in part be answered empirically.

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Some examples of "it sure seems like this particular person made a breakthrough". In these cases, for creativity in music, but one can imagine "individuals doing something that seems like a 'big new thing'" in other fields. This is Fela Kuti, the great Nigerian singer.

<https://www.youtube.com/embed/IF16CR-oBOM?si=rsc0N4cEARUKG5H2&start=433>

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[https://www.youtube.com/embed/2EIy6BjQPs0?
si=pr4bO8dNQFLT7Y1m&start=32](https://www.youtube.com/embed/2EIy6BjQPs0?si=pr4bO8dNQFLT7Y1m&start=32)

And U Srinivas, with his modern mandolin playing:

<https://www.youtube.com/embed/2EIy6BjQPs0?si=pr4bO8dNQFLT7Y1m&start=32>

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https://www.youtube.com/embed/kr-wKqy5HnU?si=f6eQzJl1b_c5sW-B

And the crazy modern classical music of Stravinsky's Augurs of Spring:

https://www.youtube.com/embed/kr-wKqy5HnU?si=f6eQzJl1b_c5sW-B



This is in 1929!

Or how about van der Rohe's ("The Master"!) Barcelona Pavilion built almost 100 years ago. The chairs you may recognize are also by van der Rohe. Can anything look more modern? This fellow and his compatriots literally brought the modern architectural world into existence.

We shall ask today:

- Are individuals necessary for progress?
- Can an individual of a certain constitution drive progress in different times/places?

That is, is it "right time", "right person at right time", or "right person" that leads to moments of progress?

An argument: the distribution of skills in areas
we can measure is pretty Pareto.

*How many battalions are the equivalent of a Napoleon? How many minor
poets will give us a Shakespeare?*

Hook, *The Hero in History*

Ogburn 1926: "A most interesting fact about living organisms is that when a particular trait of a random number of living organisms of the same species is measured, it is found to be distributed according to the normal probability curve. Measurement in psychology also indicates that mental traits, like such physical traits as height and stature, fall into frequency distributions of the same general shape as the normal probability curve. This distribution seems to be true not only for simple mental traits but also for combinations and complexes of traits, such as logical reasoning and even general mental ability. It seems probable therefore that such traits as inventive ability or any particular combination of traits of greatness would also be similarly distributed. We therefore think that the biological bases of the different kinds of greatness occur in the normal probability curve of frequencies."

*If I have seen further it is by standing
on the shoulders of Giants*

Newton, Letter to Hooke

*Genius is one percent inspiration
and ninety-nine percent
perspiration.*

Edison

And even among the legends, there is debate among them as to how important their individual constitutions were compared to "social forces". How can we separate the two? We shall see...

And what therefore is loyalty proper, the life-breath of all society, but an effluence of Hero-worship, submissive admiration for the truly great? Society is founded on Hero-worship.

Carlyle, On Heroes...

Carlyle thought - great men bring the world forward, so like a pagan looking out at a beautiful rock or Plato's cave dweller seeing the sun, you ought worship those bigger than yourself for they matter. He argued more in politics and statesmanship and similar fields, but we may mean it as well for technical progress and other parts of progress more germane to this course.

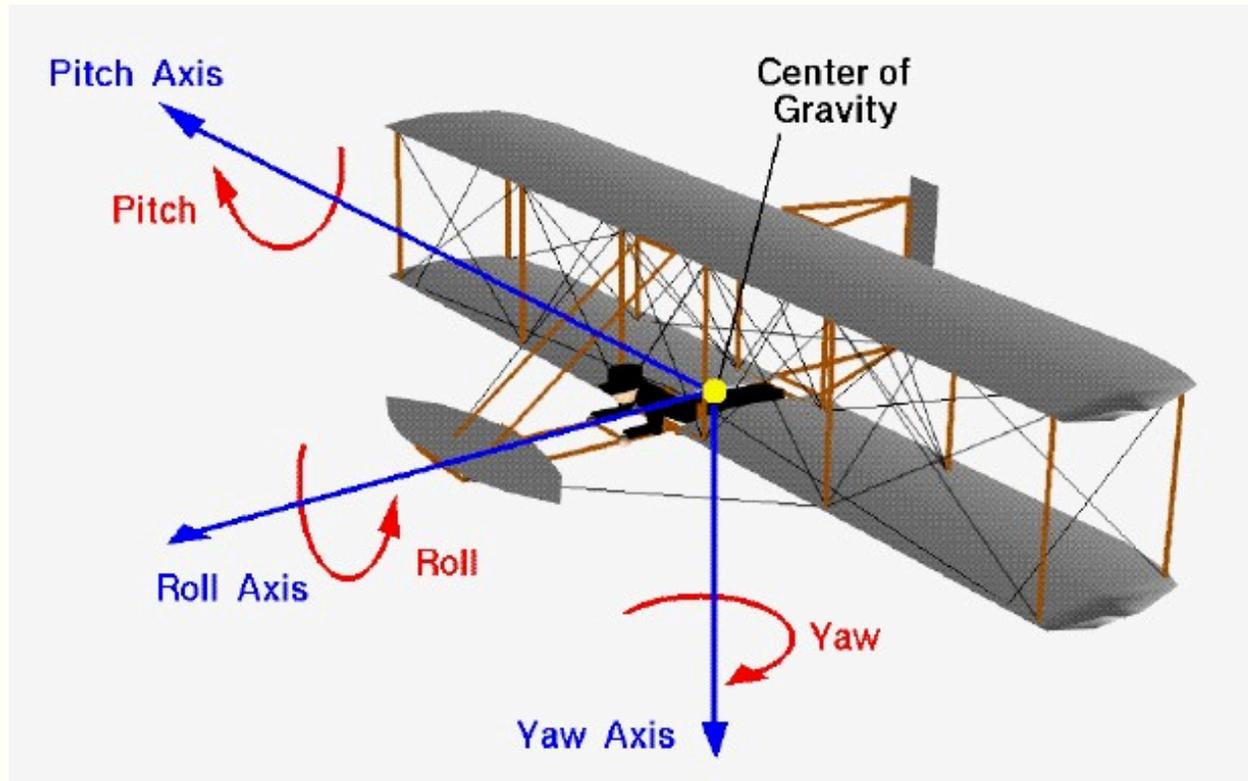
But if we can agree that individuals differ in their degree of accomplishment, what determines that variation?

Your family and childhood environment, how easy it is to do big new things (we saw many reasons why already this term!), how one gets credit for big new things, the incentives given to for big new things (should we really credit the individual for all this?).
More broadly, in Carlyle's day, the individual was perhaps overrated (the "lone genius"); today do we too much overrate broad social forces, or, when the individual clearly mattered, assume that *even at far right tails of achievement* it was all just "well, he came from a rich family"?

At one time the materials exist for inventing the automobile, at another time not...A new country is settled providing exceptional opportunities for social organization. Under such cultural opportunities great achievement is probable. The second cultural situation which affects the achievement of great men is the social valuations of the group. One group may greatly value artistic achievement and stimulate effort along those lines. Another group values religious leadership, while another encourages commercial enterprise.

Ogburn, Social Forces

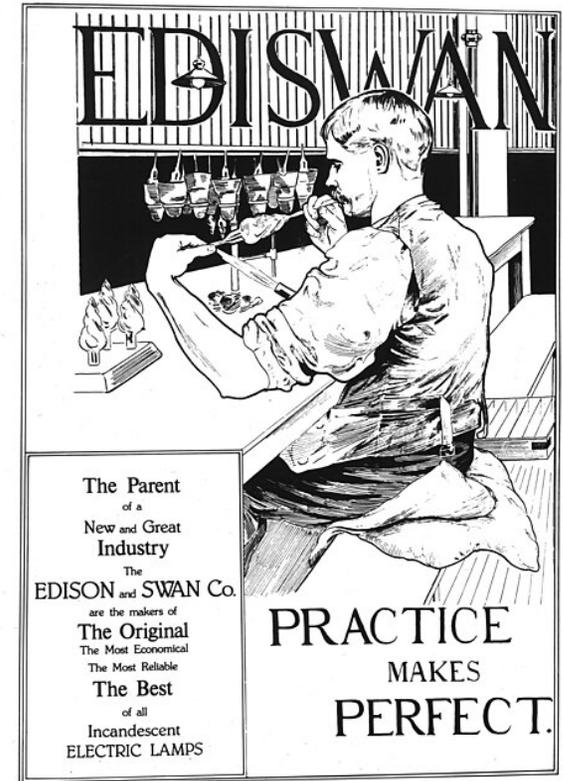
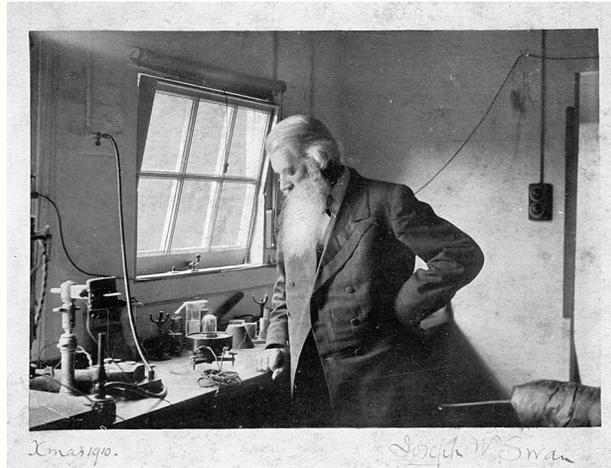
Ogburn, a great sociologist studying innovation (incl. an early list of multiple invention), argues that without the opportune moment, so-called great men wouldn't do much, and that given that moment, many could have done it.
Side note on social forces: Ogburn relies heavily on an anthropologist named Kroeber who studied trends and invention. Kroeber's daughter was even more interested in the factors which determine novelty: she is the sci-fi writer Ursula Le Guin!



What *exactly* did the Wrights invent?

The Wrights main invention was not the "airplane". It was the system of ropes attached to fabric wings that keep the plane stable (they were bicycle salesman after all!). Now we use something called "ailerons" to do this - a French word because they were French-invented.

When the Wrights worked, we had powerful light engines, ideas on gliding, the basic structure of wings and 3 axis control, etc. Imagine if the Wrights invented only a glider with their control system, and a powerful enough engine came later? We would call the inventor of the engine the "inventor of the airplane". Somewhat arbitrary, no? This is Ogburn's point.



The "counterfactual" method against Great Man Theory

"Edison has had an 'opening night.' His aim is to open night until it shall be as day." But Edison and Swan both patented incandescent lightbulbs in 1880. Edison's was more practical for a lighting system, but both important enough that they formed a single company in UK to merge patents there. How common were multiple invention? Fairly common - ideas are "in the air". Ogburn actually worked on tabulating this! So the counterfactual of "Edison never lives" is "literally we get the lightbulb the same year".

*Necessity has been called the mother of invention
but necessity did not produce scientific medicine
among the primitive peoples.*

Ogburn, Social Forces

Ogburn: "Nor does the need of great men in any endeavor necessarily bring them forth. The required cultural materials must be present."
No matter how good a doctor or how clever or how ambitious a Papuan in the Highlands in 1920 was, they would not have invented penicillin. For
Ogburn, necessity plus opportunity - and when you have both, more than one person faces the same set.

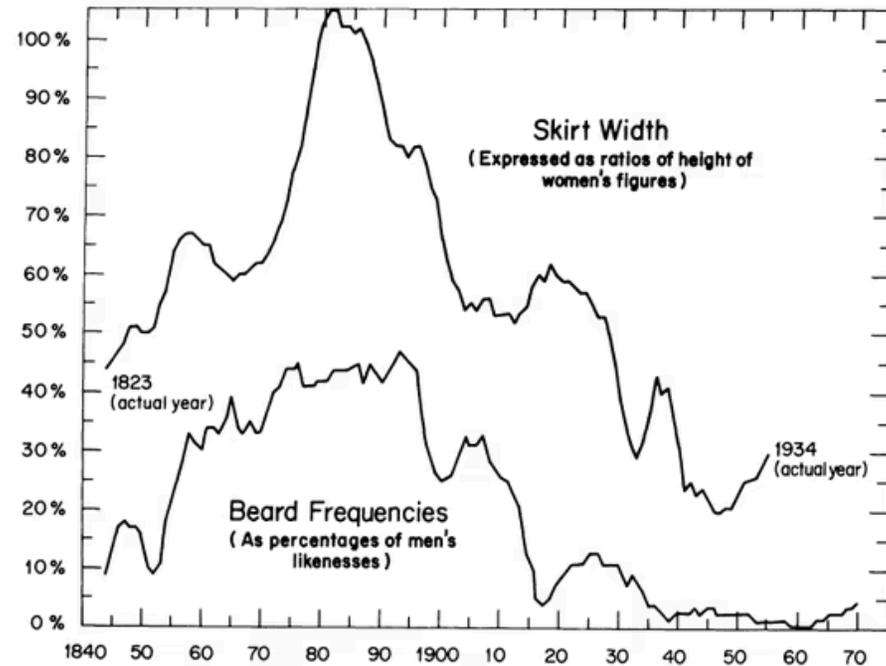


FIG. 3.—Skirt width (1823–1934) and beard frequency fluctuations (1844–1955), five-year moving averages. The time scales of the two curves have been positioned to allow for assumed 21-year lead in skirt fluctuations possibly related to comparative youthfulness of subjects in Richardson and Kroeber's population samples for dress (see text for further explanation). Coefficient of correlations for the two series, $r = .867$. Sources: skirt widths (Richardson and Kroeber 1940, table 8); beard frequencies, Appendix.

The "control" method against Great Man Theory

An extension of the anthropologist Kroeber's calculations of fashion trends. You may think the Coco Chanel's of the world drive fashion forward, and yet, on objective grounds, fashion trends ebb and flow like business cycles, with few big structural breaks. If individuals matter so much for progress, why is it often "so smooth"? Even in limited areas like the width of women's skirts, no one person seems able to "control" it.

Some theories of "big historical change"

Great Man
Theory

Historical
Materialism

Providentialism

Functionalism,
and other social
forces

(There are many more such theories, of course)

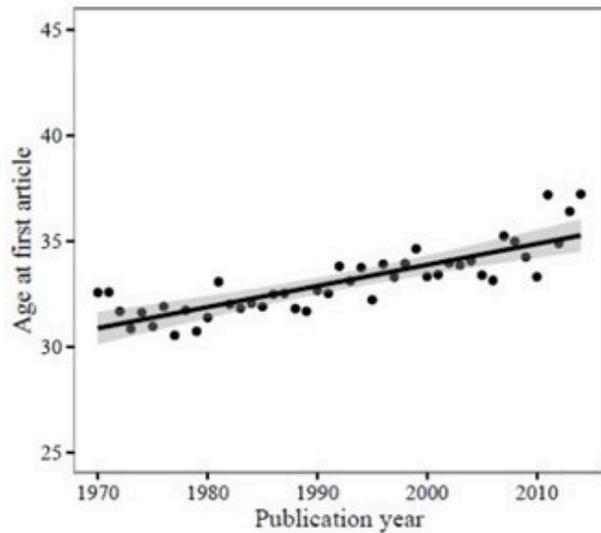
- Great Man Theory: History advances through the influence of exceptional leaders whose personal abilities and decisions redirect collective outcomes.
- Providentialism: Social change reflects the unfolding of a divine or metaphysical plan that orders human events toward a predetermined purpose.
- Historical Materialism: Transformations in society arise from conflicts and developments within the material economic base, especially class relations and modes of production.
- Functionalism: Social change results when structural strains or dysfunctions force institutions to adjust, restoring the stability and integration of the social system.
- For Ogburn: social value and preexisting cultural materials (like existing invention) drive new things. There are many other "big theories" of history.

While one generation may rather effortlessly bequeath its physical assets to the next, with human capital stocks, this is fundamentally not the case. The vessel of human capital - the individual - absorbs information at a limited rate, has limited capacity, and has limited time on earth.

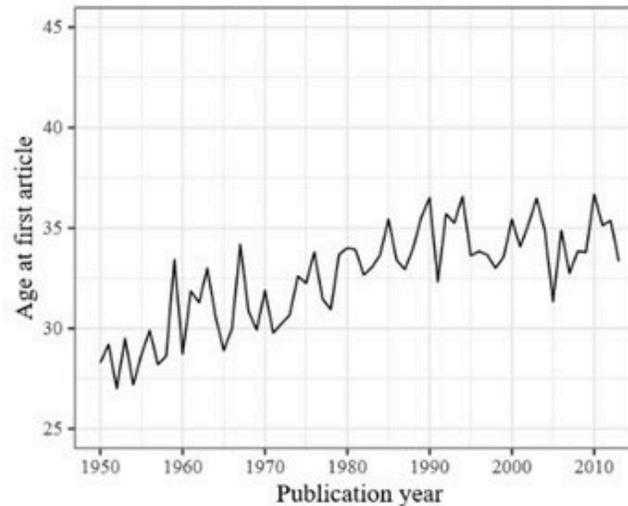
Jones, The Burden of Knowledge...

Let us see empirically though whether we can settle Carlyle's century-long debate with Ogburn. Ben Jones looks at important scientific breakthroughs. How do they happen?

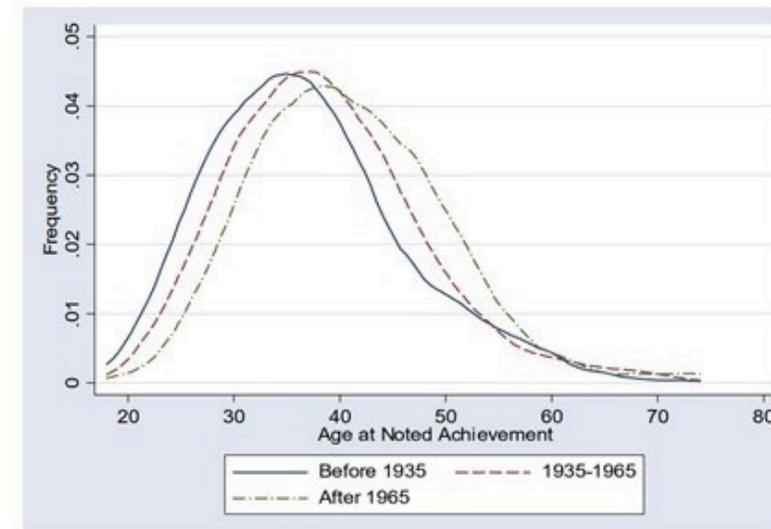
Age at first solo economics article



Age at first solo (top) mathematics article



Age distribution of Nobel achievement or great invention



Schweitzer and Brendel (2020) Brendel and Schweitzer (2019)

Jones (2010)

Courtesy Clancy (2020) at <https://mattsclancy.substack.com/p/are-ideas-getting-harder-to-find> building on Jones. 5 year increase in when Nobel-winning work was done...and 4 year increase in years of education. Time to first solo publication in math and economics: also up 5 years.

Team size grows over time. It seems like, to make a big scientific breakthrough, it is now harder and requires more training and more specialization than in the past, empirically. The individual can less push the frontier themselves.

The critical part: one's contribution depends on
one's formation

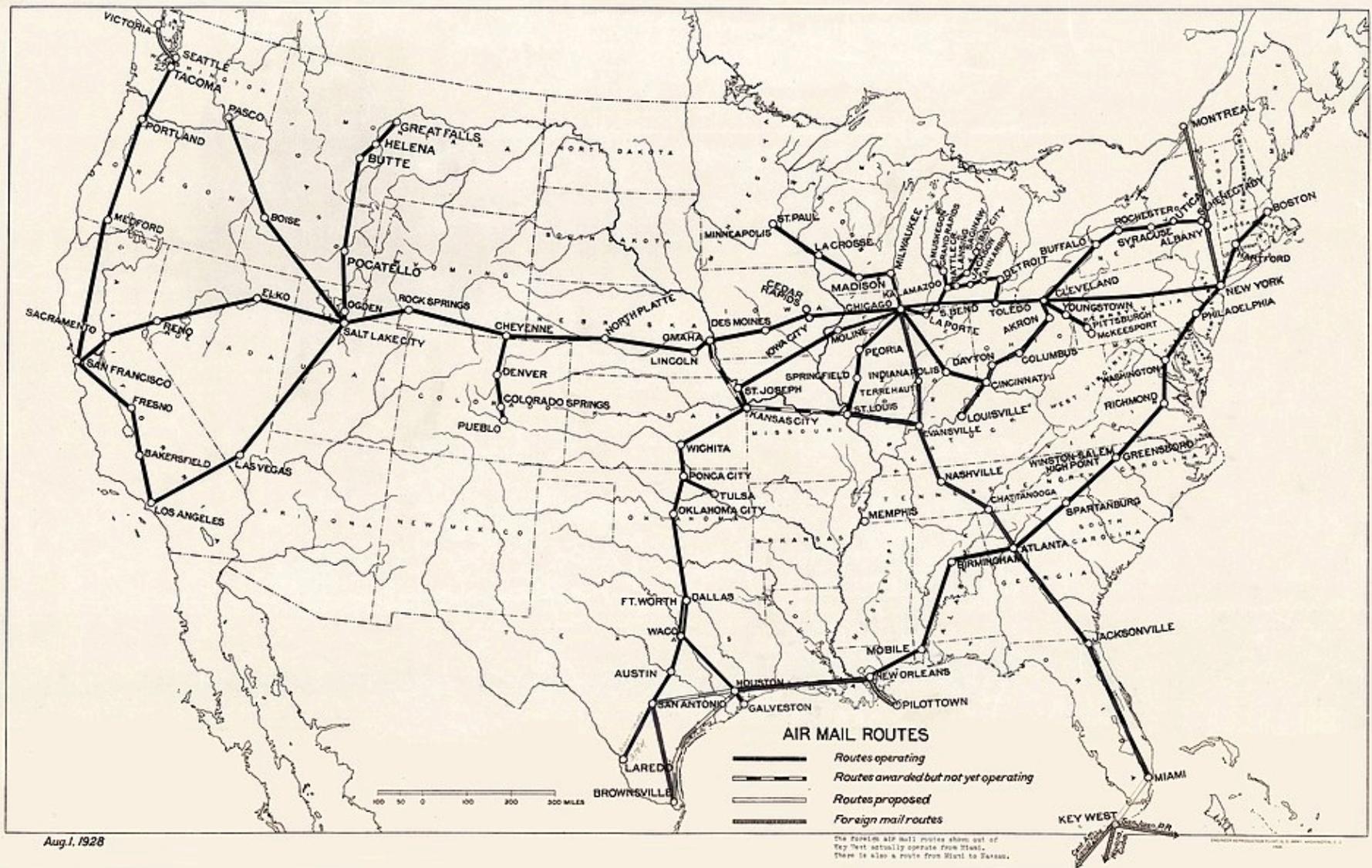
Even if it is not all social forces in the end, might
it be social forces in the beginning?

And let us see Bell et al's "Who Becomes an Inventor"? Who makes breakthroughs (and mind you, these are patents, so maybe not the "big progress" moments) depends enormously on factors in their childhood outside their control.

I imagine Carlyle would say, sure, that matters for 95th percentile talent, but Napoleon and Washington and Mandela and Charles Curtis and Edison and Marie Curie have the individual traits to make big steps forward no matter their (often humble!) backgrounds. Perhaps? How would we know?

- Top 1% in parental income 10x more likely to invent than Bottom 50%
- Even with similar youth math scores
- If you move to a town with lots of scientists working on area X, you become more likely to invent in area X

Question - Who has a patent? What was your family situation and where did you grow up? What field is it in? Bell et al find some pretty wild facts here.



A great example of random factors in childhood and progress: Sohn et al SMJ 2024 find large increase in aviation patenting in counties that had somewhat random stops for transcontinental flights (determined centrally until 1934 Air Mail Scandal). So some become inventors because of things as random as their childhood having early planes stop there. These people may still be important, but a force outside them drove things.

We can say quite surely that no matter how important individuals are, the "burden of knowledge" they face and the environment they grow up in matter...and importantly so.

So Ogburn must be right in part. "Right time" and "the factors that make the Right Person" vary, and this opportunity does affect how much one contributes to Progress. But does that mean the Right Person does not matter at all?

As soon as we go into details and inquire into the individual items in which progress was most conspicuous, the trail leads not to the doors of those firms that work under conditions of comparatively free competition but precisely to the doors of the large concerns...and a shocking suspicion dawns upon us that big business may have had more to do with creating that standard of life than with keeping it down.

Schumpeter, CSD

Let us turn to big business, a really important force in the past 150 years. If it's Great Men, why do faceless bureaucrats get so much done? Schumpeter *definitely* believes in the Great Man pushing things forward, but also observes that bureaucratic large corporations seem to be much better at driving down costs and making the modern world possible. How to square the circle here?



A quiet office job in the big bureaucracy...not bad?

This process of Creative Destruction is the essential fact about capitalism.

Schumpeter, CSD

What does that imply for Great Man Theory?

Answer: the entrepreneur may matter by creating the social forces that allow others to contribute to progress! "To undertake such new things is difficult and constitutes a distinct economic function, first, because they lie outside the routine tasks that everybody understands and secondly because the environment resists in many ways that vary, according to social conditions, from simple refusal either to finance or buy a new thing, to physical attack on the person who tries to produce it.

To act with confidence beyond the range of familiar beacons and to overcome that resistance requires aptitudes that are present in only a small fraction of the population and define the entrepreneurial type as well as the entrepreneurial function. This function does not essentially consist in either inventing anything or otherwise creating the conditions which the enterprise exploits. It consists in getting things done." - Schumpeter, Theory of Economic Development, 1934

It was the development of new technologies and the opening of new markets, which resulted in economies of scale and of scope and in reduced transaction costs, that made the large multiunit industrial enterprise come when it did, where it did, and in the way it did.

Chandler, Scale and Scope

And these large orgs that Schumpeterian entrepreneurs could help create would only become large because of technological changes that allowed these large orgs via "scale and scope". How much one person can create one org can create progress changes as a result of this type of technological change, Chandler might say.



No rail, steamship, telegraph, electricity? No modern corporation.

It was not until the 1870s, with the completion of the modern transportation and communication networks—the railroad, telegraph, steamship, and cable—and of the organizational and technological innovations essential to operate them as integrated systems, that materials could flow into a factory or processing plant and finished goods move out at a rate of speed and volume and with the precise timing required to achieve substantial economies of throughput.

- Chandler, S&S.

So, a survey. You are asked by a friend (or policymaker!) "how important are individuals to progress?"

Let's vote: 1-5, where 1 is "not at all" and 5 is "I imagine the most important factor we'll discuss this term". We'll keep track of these votes as we go!

Class average 2.81/5. We see the most skepticism of any factor so far here.

Next Week

Does Ambition Matter?

What is it that ambitious people do, and do people vary in their ambition?

