

Progress

Class 4 - Liberty

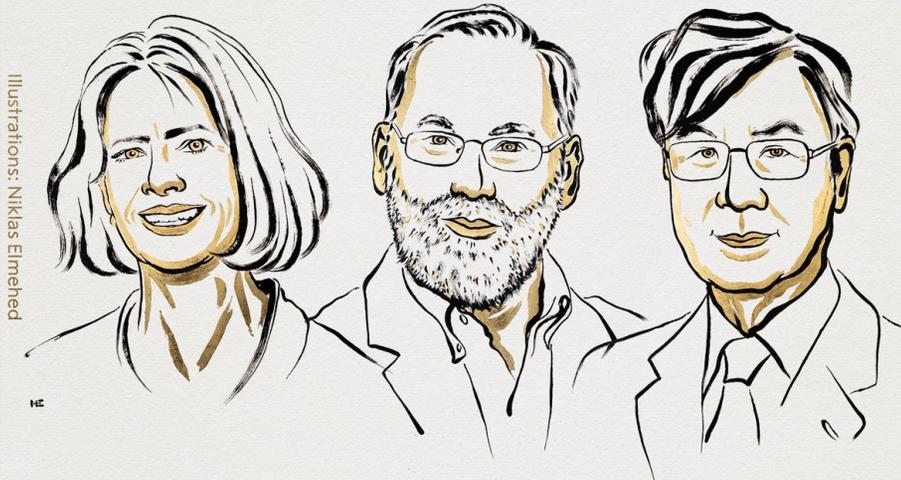
Kevin A. Bryan - Toronto Rotman - Oct 8, 2025

Notes after class are in red

Thus far

1. Progress: human standard of living can and will be improved by purposeful human action
2. The IR as the most important breakpoint in human progress
3. Science as 'capital' used to produce progress, with unusual institutions
4. Today: is liberty necessary? What is liberty anyway?

THE NOBEL PRIZE
IN PHYSIOLOGY OR MEDICINE 2025



Illustrations: Niklas Elmehed

Mary E.
Brunkow

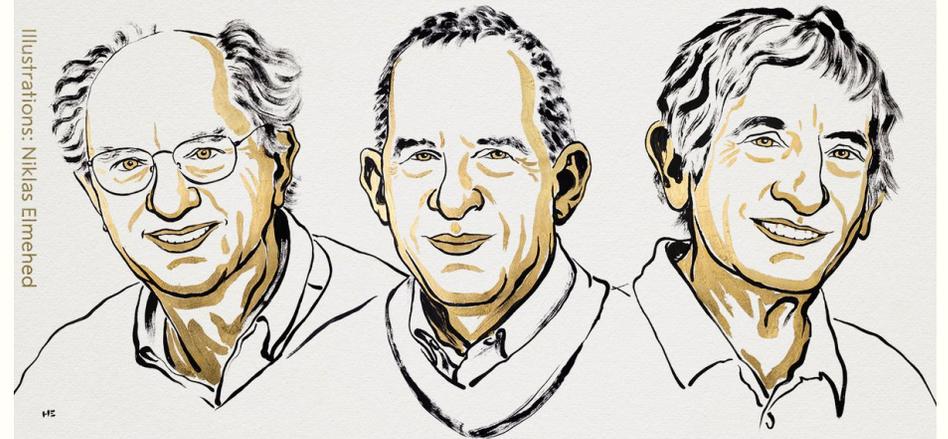
Fred
Ramsdell

Shimon
Sakaguchi

"for their discoveries concerning
peripheral immune tolerance"

THE NOBEL ASSEMBLY AT KAROLINSKA INSTITUTET

THE NOBEL PRIZE
IN PHYSICS 2025



Illustrations: Niklas Elmehed

John
Clarke

Michel H.
Devoret

John M.
Martinis

"for the discovery of macroscopic quantum
mechanical tunnelling and energy quantisation
in an electric circuit"

THE ROYAL SWEDISH ACADEMY OF SCIENCES

2/6 did their Nobel work in private sector, John M there now (and here!)

In our prior class, we saw that basic research may be undersupplied but as Rosenberg mentioned, there is some basic research in firms. Here's a great example from 2025 Nobels!



In the famous 2007 article by Jensen about Kerala fisherman, he notes how they used cell phones to gain access to more ports to sell fish if the price was higher. Note the topics we discuss today: local knowledge (the fisherman knows what he has, how the ocean is producing today, whether she has a wedding early the next day to attend and must go early and so on).

And also: capabilities (the cell phone allows the fisherman to achieve more of Sen's freedom by reducing constraints on action with the information), liberty on gender/family/household grounds, and more.

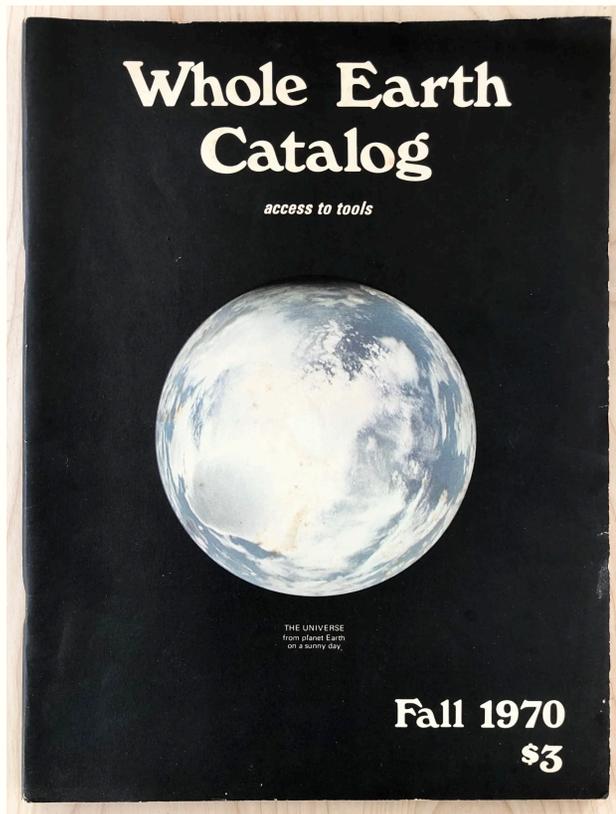
Let us define liberty

There is no great definition of liberty. Many, from JS Mill ("pursuing our own good in our own way, so long as we do not attempt to deprive others of theirs") to our writers today, have tried to give a definition. The big gaps are between "positive" rights and "negative" ones (limits on constraints from orgs, society, govt.). Let us be open in the class and consider the specific question: is liberty by any definition critical for progress, and why?



Where do you expect more progress?

Skateboarding (invented in California), Jobs and Woz at early Apple, Bell Labs 1950s institutional scientists. It may seem crazy that the culture on the left contributed more than the one on the right, but that is Brand's argument: the counterculture of California - a total rejection of authority and "old norms", is what allows for wild outcomes.



"Stay hungry. Stay foolish"

Stewart Brand's Whole Earth Catalog, Ken Kesey's "Further" bus, and Jarod Lanier (inventor of modern VR). Brand worked with Kesey and Merry Pranksters on their acid tests, and campaigned to have the first picture of the "Whole Earth" released. This picture "gave the sense that Earth's an island, surrounded by a lot of inhospitable space. And it's so graphic, this little blue, white, green and brown jewel-like icon amongst a quite featureless black vacuum", so yeah, he was a hippie!

The quote at the bottom from the Whole Earth Catalog, not originally from Apple. Kevin Kelly, founding editor of Wired, worked for Whole Earth. "WELL" an web bulletin board in the 1980s, was founded by Brand. Legends! But also, this culture of hippies, how important was it for the technological and cultural progress we saw in California? You can see, as in Brand, how linked the two are in many ways. And can you imagine a guy like Lanier moving up in the straightlaced business worlds of New York or London or Beijing? Highly recommended:

<https://conversationswithtyler.com/episodes/stewart-brand/>

“Access to computers should be unlimited and total.”

“All information should be free.”

“Mistrust authority — promote decentralization.”

“You can create art and beauty on a computer.”

“Computers can change your life for the better.”

Levy's (1984) Hacker credo

In particular, 'mistrust authority - promote decentralization'. Doesn't this sound like "Move fast and break things", or a crypto manifesto, or an AI manifesto? This sentiment has been around in California a long time: it also sounds like "Tune in turn on drop out" and not coincidentally.

Embedded Website:

<https://www.youtube.com/embed/JQ8ZiT1sn88?si=mjfXgxB-3bJWGCAL>

Engelbart's PARC demo shows the mouse, the GUI, windows, video conferencing, hypertext, file linking, etc. Engelbart read "As We may Think" while in the Navy in '46, but wanted more civilian benefit from tech. Moved to Ames as a military wind tunnel expert before absolutely blowing people's minds with this demo in 68.

But also note: this seminal moment in Silicon Valley came from an ex-Navy man who arrived there with the military and sure looks straightlaced, and who was working for PARC: *Xerox's* Palo Alto Research Center. So somewhat "high liberty" West Coast, but not exactly Timothy Leary.

Liberty: Mistrust authority — promote decentralization.

(Is the hippie story really true though? We'll see later this term when we discuss ambition...)



Frederick Terman, dean of engineering at Stanford, pushed to create VC industry and spinouts, first HP in a garage + military work in the 1930s, then Shockley comes out (randomly! his mom in PA was sick) with Shockley Semiconductor, then the Traitorous 8 -> Fairchild -> Intel, Xerox PARC moves out there to access talent, and on and on (we'll discuss the role of cities soon). Terman sure isn't a hippie.

But also, recall, all these folks went West to avoid the NYC suits! And "science advances one funeral at a time", recall, from Planck, so perhaps even the straightlaced folks who come to a "do what you want - mistrust authority" world become a bit more open to doing things in new ways, hence progress.



...in a system where the knowledge of the relevant facts is dispersed among many people, prices can act to coordinate the separate actions of different people.

Hayek, Use of Knowledge

Friedrich Hayek (Nobel in Economics, 1974)

Enormously influential - maybe the most influential economics article of all time. Literally changed how economists spoke about the benefits/costs of socialism, especially at Cowles. Helps lead to influential Mont Pelerin Society and many of the modern ideas about markets. Hard to overstate how inevitable socialism seemed - it was "modern"!



The socialist calculation debate (this is Chile's unused Cybersyn planning room): consider the argument of Oskar Lange to just let the Central Planning Board respond to surpluses and shortages by adjusting prices. Where is this likely to go wrong? What types of products? New ones, perhaps, ones requiring foresight and planning? Ones where the people have heterogenous tastes? Stafford Beer, the cybernetician who helped plan Cybersyn (and lived in Toronto, and gave the '73 Massey Lecture while doing this!) hooked up to a computer hundreds of telex machines to try to transmit information in a "rational" way across the whole system. This was what Hayek was arguing against!

The marvel is that in a case like that of a scarcity of one raw material, without an order being issued, without more than perhaps a handful of people knowing the cause, tens of thousands of people whose identity could not be ascertained by months of investigation, are made to use the material or its products more sparingly; i.e., they move in the right direction. I have deliberately used the word "marvel" to shock the reader out of the complacency with which we often take the working of this mechanism for granted.

Hayek, Use of Knowledge

Prices are signals, not just incentives!

Again, signals, not just incentives! On what to produce, and what makes people happy or satisfied, the relevant information is held in billions of heads. How can we use this? No way society can know all this. So we do use coordination sometimes - firms have board rooms. But markets work not because each of these board rooms get things right, but

Liberty: Improve welfare by letting us draw on local information to coordinate

(Though of course Hayek also saw substantive, deontological roles for the freedom to transact, as in *The Road to Serfdom*)

Note that this is not the hippie argument, but an argument that liberty is good for progress because of a constraint on how well a non-liberty economic system can utilize information. For the hippies, the liberty is itself the benefit, and perhaps for some types of innovative activity it helps speed them along.



Waldsterben



James C. Scott

Germany scientific forestry in late 1700s planted trees in rows, with high value crops, easy to harvest, maintained so all could be chopped in an area at once. Result: amazing for first rotation. But *second* crop was terrible. Why? Biomass on the forest floor, undergrowth crops, animal and insect life, etc. are all really important. The state made "legible" only a portion of what mattered.

James C. Scott was an anarchist - his "anarchist squint" notes the role of progress outside what is made legible by the state.

To understand Scott, give me your favorite
measure of progress and tell me why you think it
is good

Everyone always lists something that can be easily measured, like GDP, HDI, maternal mortality, and so on. But of course there are many hard to measure ways to see progress. Scott's argument: the state can only "see" some things, bad enough, but then tries to shoehorn individual behavior into "legible" activity, harming liberty.



Paris before- and after-Haussmann. Why the change?

Partly to reduce cholera and clean the city. But partly so the military can easily monitor the city!



Is any local lost here?

Of course not - the straightened streets are not to help Uncle Jamal find Cousin Abdul's house. They can do so even on the winding lanes (in this case, of Sana'a). But on the other hand, maybe it is less healthy? Paris was disgusting pre-Haussmann!

Mein Herr looked so thoroughly bewildered that I thought it best to change the subject. "What a useful thing a pocket-map is!" I remarked.

"That's another thing we've learned from *your* Nation," said Mein Herr, "map-making. But we've carried it much further than *you*. What do you consider the *largest* map that would be really useful?"

"About six inches to the mile."

"Only *six inches!*" exclaimed Mein Herr. "We very soon got to six *yards* to the mile. Then we tried a *hundred* yards to the mile. And then came the grandest idea of all! We actually made a map of the country, on the scale of a *mile to the mile!*"

"Have you used it much?" I enquired.

"It has never been spread out, yet," said Mein Herr: "the farmers objected: they said it would cover the whole country, and shut out the sunlight! So we now use the country itself, as its own map, and I assure you it does nearly as well. Now let me ask you *another* question. What is the smallest *world* you would care to inhabit?"

From Lewis Carroll, which influence
Borges.

"The Map is Not the Territory".

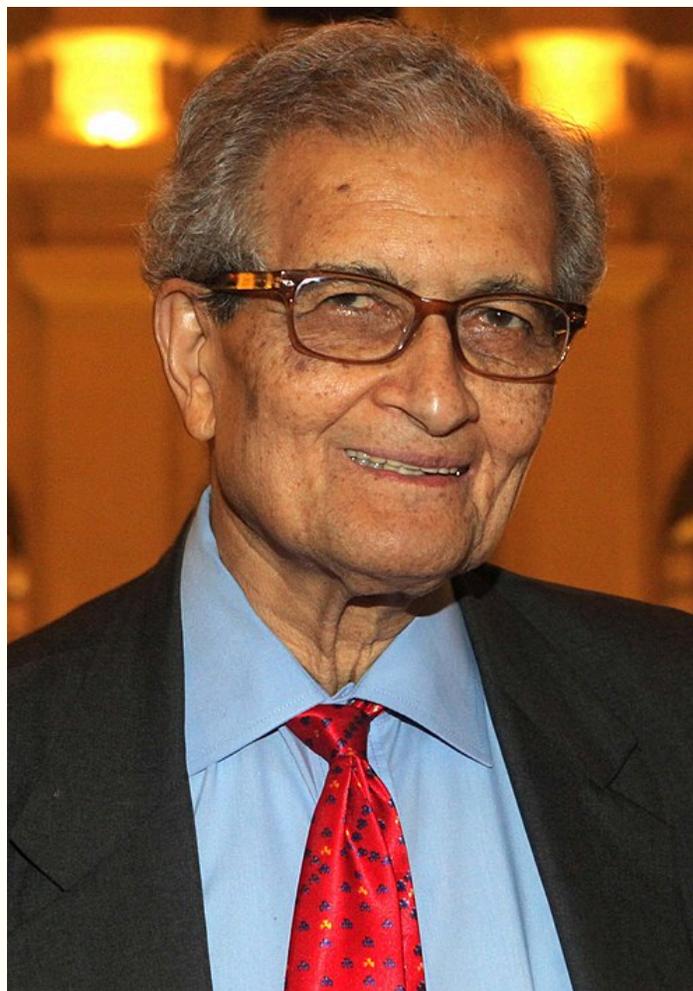
But the state must make things
legible and in order to do so they
restrict liberty.

"A particular tree reappears as an instance of a certain size class of tree; a particular plot of agricultural land reappears as coordinates in a cadastral map; a particular job reappears as an instance of a category of employment; a particular person reappears bearing a name according to the new formula": the state tries to map what it can, but can never understand all of Hayek's local knowledge in a way useful enough to make policy.

Liberty: The ability to act outside control imposed by the "legible" state

But how important is this right? Even Scott admits that, say, halting cholera with the Haussmann scheme is beneficial, as are last names. So how much progress is halted by the need for the 'legible state': any examples?

Maybe important? E.g., you used to not need a passport. Much easier to coordinate with others to perform activity in that world!



Amartya Sen, Nobel Prize in Economics (1998)

A legend, raised in Dhaka, actually named by Rabindranath Tagore!



What does liberty tell us about Kader Mia, who Sen saw killed during Hindu/Muslim violence while working in a Hindu area when Sen was 11? Sen thinks, well, he only came to work because he had to feed his family. The lack of the "liberty to choose not to work that day" got him killed. So let's consider a broader conception of liberty that avoiding coercion from the state (in either the hippie, Hayekian and Scott senses).

For Sen, liberty is the removal of constraints on what humans can do.

This is both "freedom from" and "freedom to", but also *freedom is the means and the ends of development*

The means AND the ends. Freedom is valuable in and of itself (see following slide). AND freedom, defined in Sen's way, is the precursor to economic growth.

How are starving and fasting different? You get
the food the same way?

Just counting the "end consumption bundle" clearly conflates these two things.

Consider, as argued by Fogel and Engerman, a situation where slaves and freed ex-slaves have identical levels of consumption. Is their development equal?

Some controversy on this economic fact, but for the sake of argument assume it's true (that slaves in 1864 were fed enough to be strong at work, while in 1866 they were just poor, winding up with similar consumption bundles in both cases). Clearly, for Sen, ex-slaves in 1866 are in a much better position as far as "development". Why? They are more free to make their own choices.



Wang Jinxi, the Chinese "Iron Man" who helped develop the oil industry. Imagine you get paid the same, get the exact bundle you would have bought, work the exact same job. So Hayek is overcome. Is this equivalent to *choosing* that job and consumption?

Sen is not as left-wing as many think - he likes markets! Indeed, he argued that being told what job to do and what to consume, even if the state's Cybersyn computers guess right, is still harmful - people prefer the ability to choose.

Sen: freedom expands 'capabilities', what humans
can do

Safety, education, free speech, free markets: all in
this set

More liberty is good in and of itself (progress!)
and helps lead to material progress

Capabilities are Sen's famous idea, developed by him and a few others (esp. Martha Nussbaum). Liberty expands when you are more able to achieve the human outcomes you want, via things like being safe from violence, being educated, being able to speak freely, work in the job you want, and so on. Sen argues that an expansion in capabilities is the outcome we ought care about, that it is valuable in and of itself, and that it helps lead to later economic growth.

Liberty: the expansion of capabilities

Put another way, without free speech, or education, you can't write a poem like Tagore (progress in and of itself - people value thinking freely and well!). But you also can't get material growth since free speech and education are inputs. How sure are we about the second?

A caveat is that it is not empirically true that you can't get economic growth with expanding the capabilities of your citizens. Sen's argument is partly one of valuing liberty for its own goods (willing to pay for the right to speak freely, so expansions in liberty by definition expand progress)



Chongqing at night. The obvious issue with "is liberty necessary for progress" is, like, empirically, we have counterexamples. This is not the highest liberty place in the world. It's not, in many but not all ways, even high-liberty *compared to Chongqing in 2005!* But perhaps in the Sen sense, it does have growing liberty, since educational attainment is up, danwei-work arrangements are down, and so on.

Most would say that China is not a paragon of liberty in the above definitions, so how did this work?

An explanation from Ang:
variation (find possible things to do)
selection (keep doing the good ones)
niche creation (adapt to others)

Do you need *liberty* for these?

Similar to Mokyr's argument about the Industrial Revolution, Ang argues you can get economic progress at least without liberty for all citizens. Instead you just need a society where a *portion of folks* are able to explore new ideas, good ideas are expanded, and an ecosystem of different good ideas can be kept.

Chinese political promotions and decentralization are in this set, especially prior to Xi, where local leaders had a lot of autonomy and good outcomes along many of the measures Sen cares about help get you promoted (and get you rich!). So to me, Ang's argument is that "enough liberty is necessary, but maybe liberty beyond that is not necessary for at least some progress".

So, a survey. You are asked by a friend (or policymaker!) "how important is liberty 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!

Results: 2/5 (1), 3/5 (10), 4/5 (14), 5/5 (9) - 3.91/5 average. Why? Student comments: "Liberty seems especially important for jumpstarting new progress." "Empirically there are places that made life better for the average person without trying to maximize liberty"

Next Week

What do Cities Do?

Many breakthroughs seem to occur in cities. Is this generally true? If so, what role do cities play and why?