THE FUTURE OF INTERDISCIPLINARITY

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(Grand Canyon – origin of my interest in interdisciplinarity)

Interdisciplinarity: History and Sociology

Term dates from 1928, SSRC, 50 years after the creation of modern disciplines.
Interdisciplinarity as an effect of disciplinarity.

This should raise questions

- Disciplines were created when and why?
- What's a discipline, and how different is interdisciplinarity?
- Why no 'discipline' devoted to understanding pros and cons of disciplinarity, our means for organizing knowledge?
- Why no courses on 'Theory of the University,' explaining how disciplinary knowledge works, its strengths and weaknesses, etc.?

The Institution of Disciplinarity: The Modern Research University (MRU)

- Dates from end of 19th Century (Johns Hopkins, 1876)
- Made research culture central
- Invention of departments, electives, majors, and disciplines (Eliot, Harvard, 1869ff)
- Treated (and still treats) knowledge as both flat; thus as an infinite project

-These assumptions remain unquestioned by academic culture.

-Assumptions that interdisciplinary studies should be examining today.

Interdisciplinarity and the History of the MRU

-Post-WW2 expansion of universities: disciplinarity research culture explodes (NSF, NIH)

-1960s: ID as reaction to the positivism of culture (DuPont: 'Better Living Through Chemistry'; McNamara). Whole new interdisciplinary fields of study (e.g., enviro studies)

-The logic of disciplines: ID the forward edge of disciplinarity. Research imperative creates niche topics that become proto-disciplines or disciplines (e.g., biochemistry).

Thus the dominance of topical interdisciplinarity.

Other senses of ID developed more slowly:

Europe: grand system building/unity of kn (TD: Piaget, Nicolescu) and institutional experiments (Bielefeld 1969).

US: focus on techniques at the individual level (AIS (1979); Newell, Repko, O'Rourke)

Newell (1997) definition of interdisciplinarity.

A. Drawing on disciplinary perspectives:

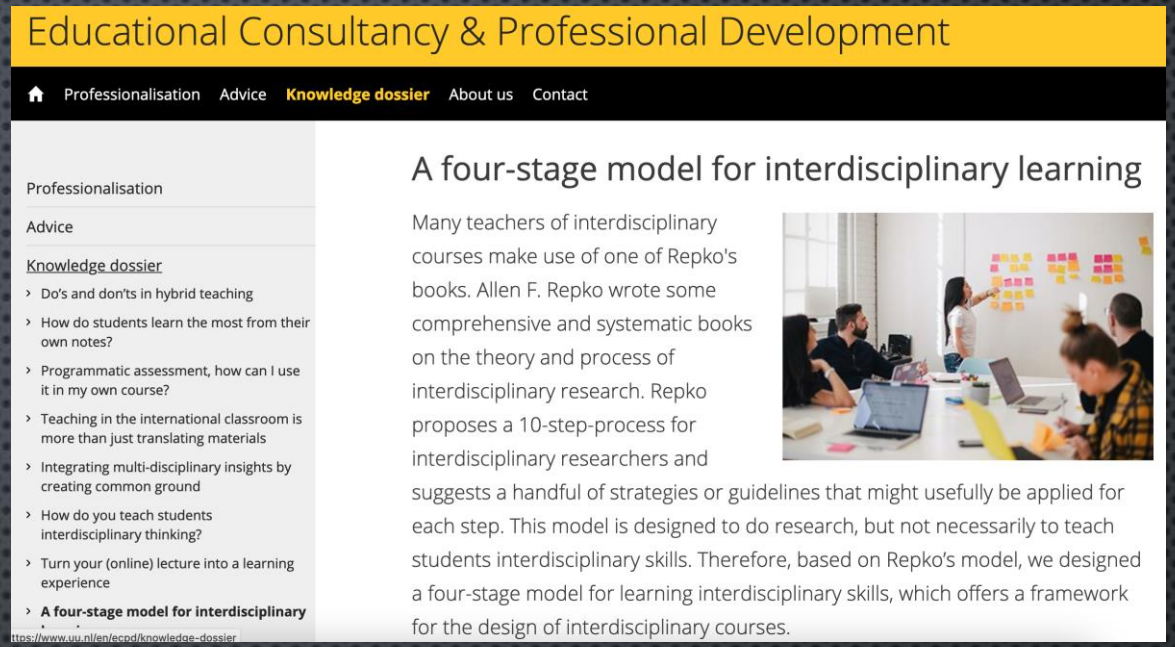
- *defining* the problem (question, topic, issue);
- *determining* relevant disciplines (interdisciplines, schools of thought);
- *developing* working command of relevant concepts, theories, methods of each discipline;
- *gathering* all current disciplinary knowledge and *searching* for new information;
- *studying* the problem from the perspective of each discipline; and
- *generating* disciplinary insights into the problem.

B. Integrating their insights through construction of a more comprehensive perspective:

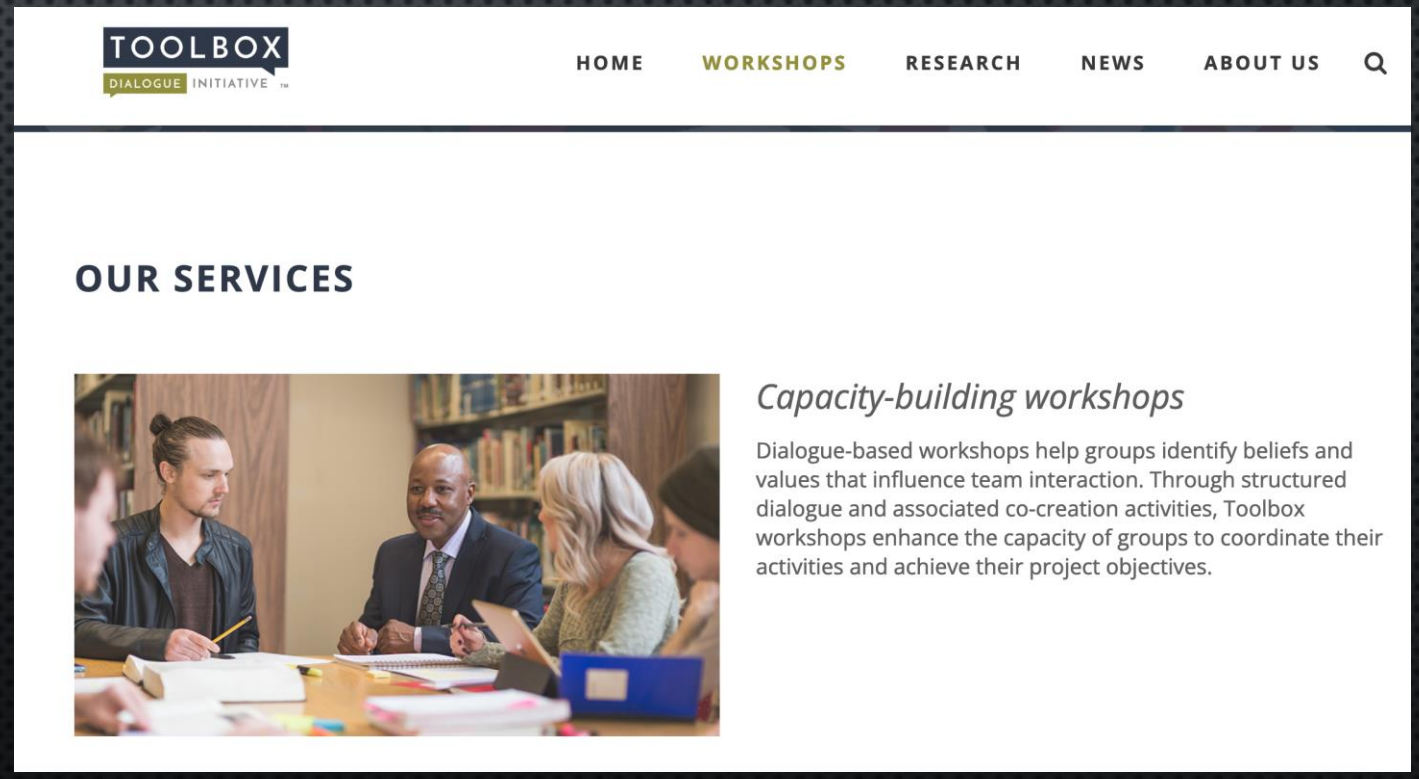
- *identifying* conflicts in insights by using disciplines to illuminate each other's assumptions, or by looking for different terms with common meanings, or terms with different meanings;
- *evaluating* assumptions and terminology in the context of the specific problem;
- *resolving* conflicts by working towards a common vocabulary and set of assumptions;
- *creating* common ground;
- *constructing* a new understanding of the problem;
- *producing* a model (metaphor, theme) that captures the new understanding; and
- *testing* the understanding by attempting to solve the problem.

Newell, 1997

O'Rourke, 2020



Repko, 2008



A Taxonomy of Interdisciplinarity – Writ Large

1. Topical interdisciplinarity, with a focus on pedagogy & technique
2. Rarely, institutional experiments
3. Transdisciplinarity as unity of all knowledge (now largely defunct)
4. Transdisciplinarity in the sense of broader impacts (aka “interdisciplinarity”)
5. Interdisciplinarity as philosophy of knowledge production

(4) Often becomes a case of bait and switch: the problem of disciplinary capture:

The tendency for society-focused academic efforts to turn inward to satisfy the demands of one’s disciplinary community.

The Future of (Inter)disciplinarity

ID – ie, topical ID – is a good thing.

But my hunch:

> Topical interdisciplinarity will be increasingly constrained, and talk of interdisciplinarity will gradually fade.

Why? Limits to the logic of disciplinarity + shifts in knowledge culture

1. The status quo as unsustainable
2. The shift off campus is irreversible
3. The dangers of infinite knowledge production will become more apparent

1. The epistemic status quo: an environmental critique of the modern research university

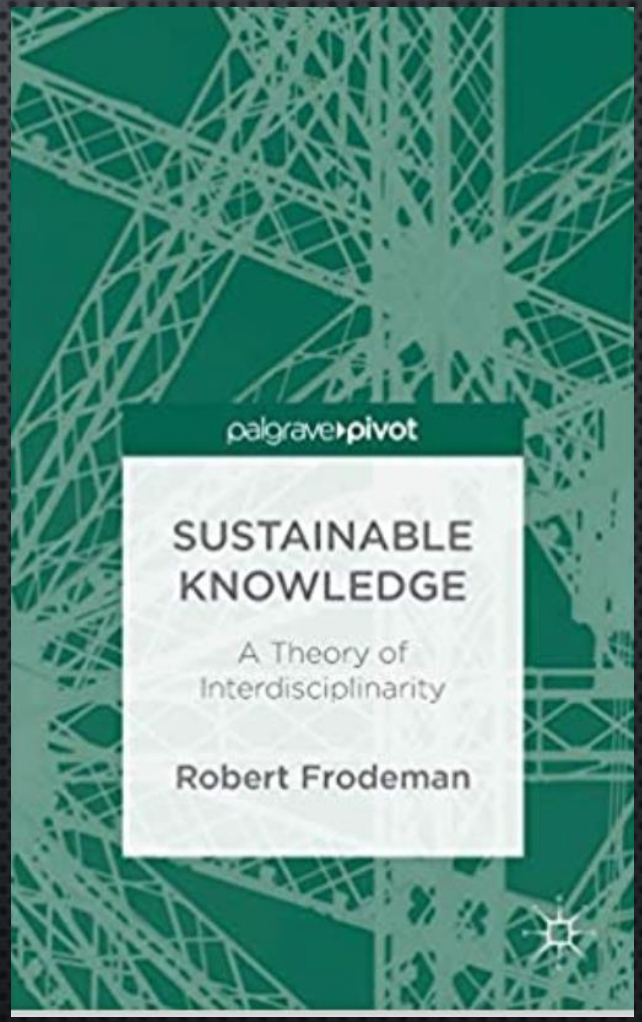
Sustainability is understood as having three parameters

- Economic
- Environmental
- Social

Recognize a 4th: epistemic sustainability

Current mode of knowledge production assumes infinity: it has no end.

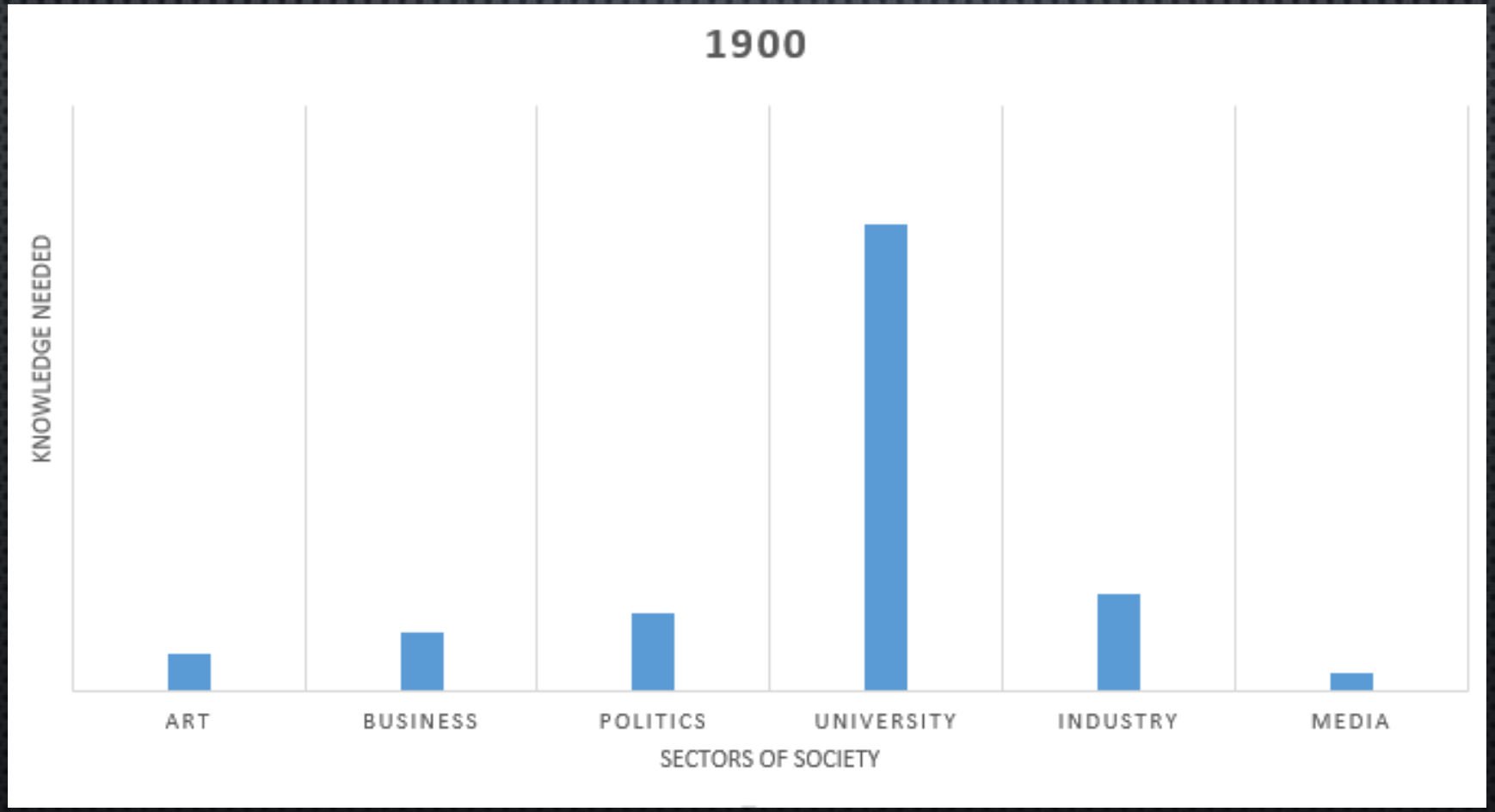
-In the future, knowledge production will link supply and demand



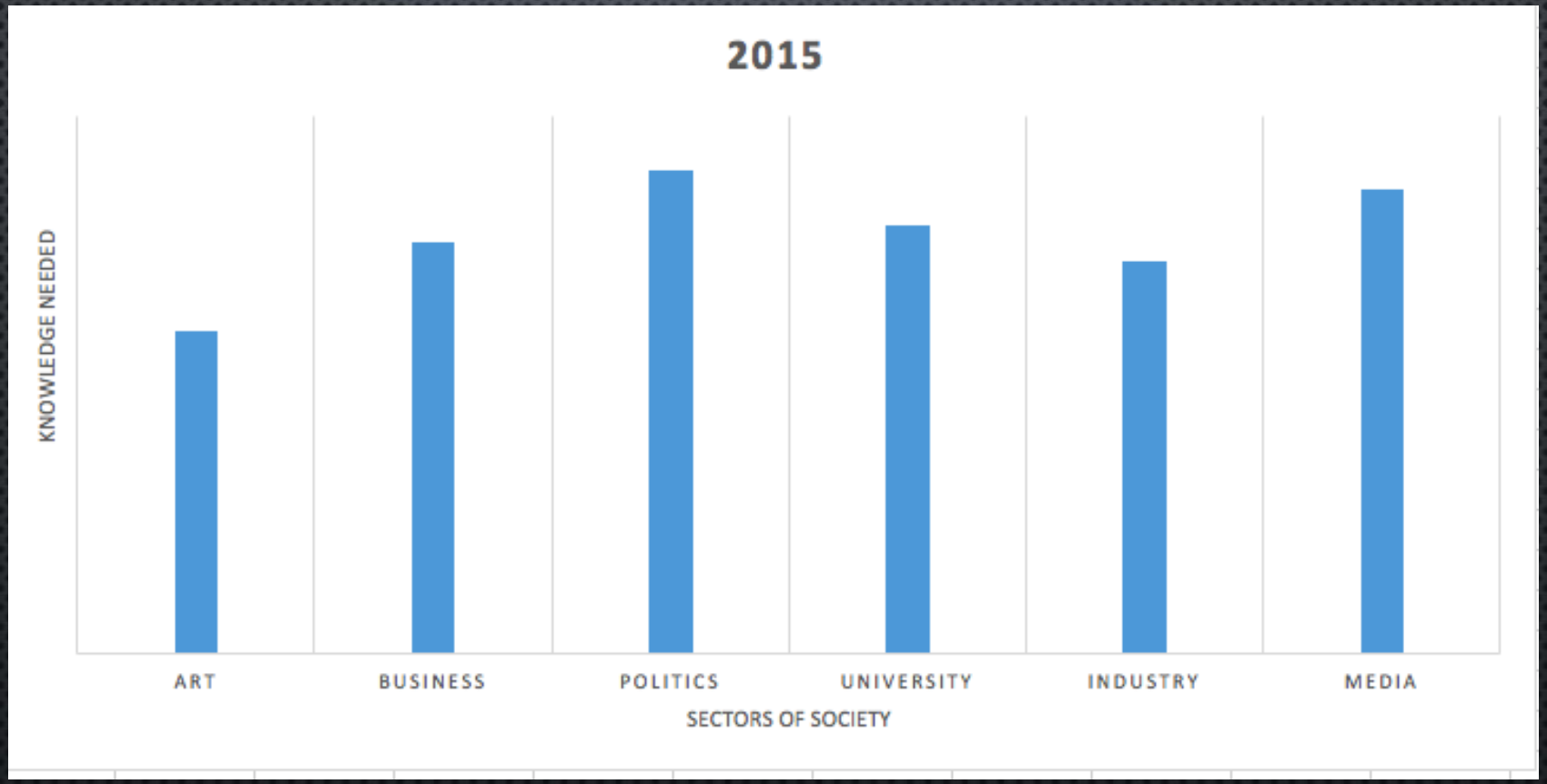
2013

2. Action has Shifted off Campus

US circa 1900: 250 PhDs/year

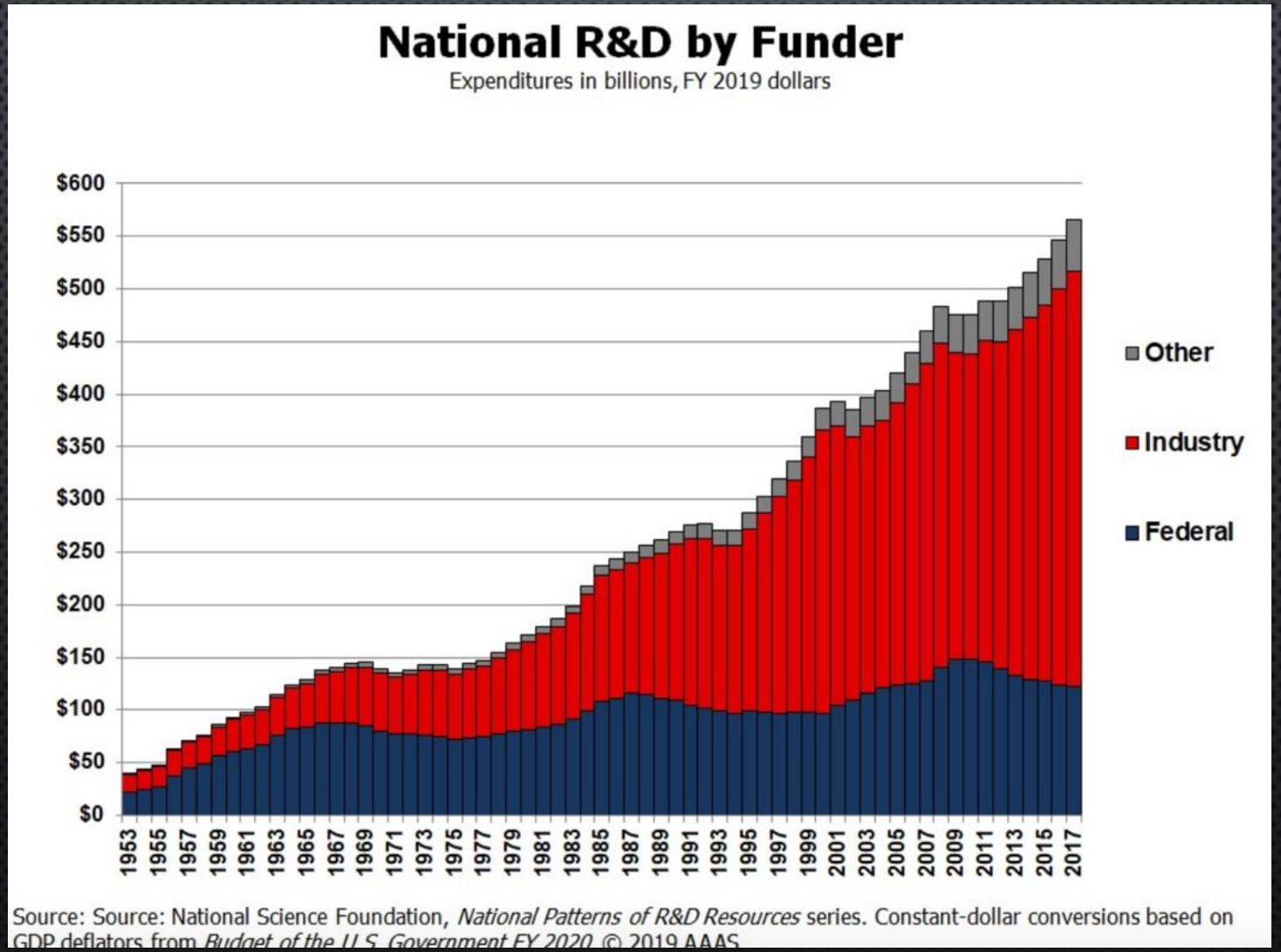


US Today: 55,000 PhDs/yr



-Universities are the victims of their own success.

Where knowledge is being produced today



Top 20 research budgets:

Amazon, Alphabet, Volkswagen,
Samsung, Intel, Microsoft,
Apple, Roche, Novartis, Toyota,
Johnson & Johnson, Merck,
Ford, Pfizer, Facebook,
Siemens, Sanofi, Honda,
Diamler, General Motors

In 2021, ~$200 billion

- What is the distinctive function of the university today?

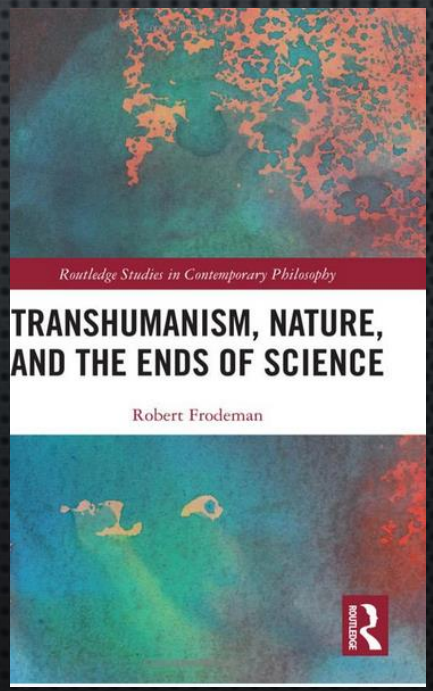
3. The Dangers of Knowledge Production

-Political instability, as society fails to properly integrate new technologies;

-Totalitarian government, as advances increase the means for surveilling, manipulating, and controlling the population;

-Social or environmental disruption, via catastrophic accidents or the deeds of rogue actors.

Transhumanism has become our cryptic project.



2019

“What is the role of IASs in strategic research and the leadership of free thought?”

An excellent question. But an institutional question that I’m ill-prepared to address.

That said, I’d suggest: the future of knowledge and a philosophy of impact.

“What are the risks and benefits for researchers in relationships with industry, government and not-for-profit?

Parallel to the dangers of disciplinary capture, one must remain an honest broker, being relevant to without being captured by the interests of any of these groups.