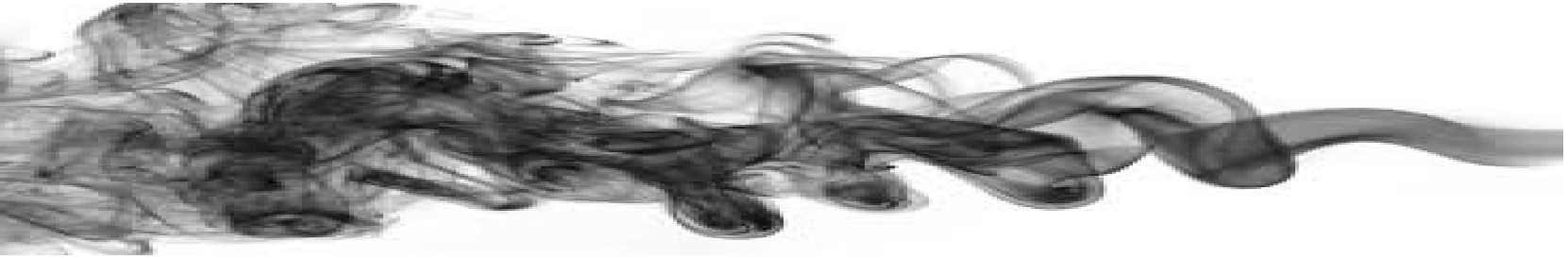


Reimagining Higher Education for the Anthropocene

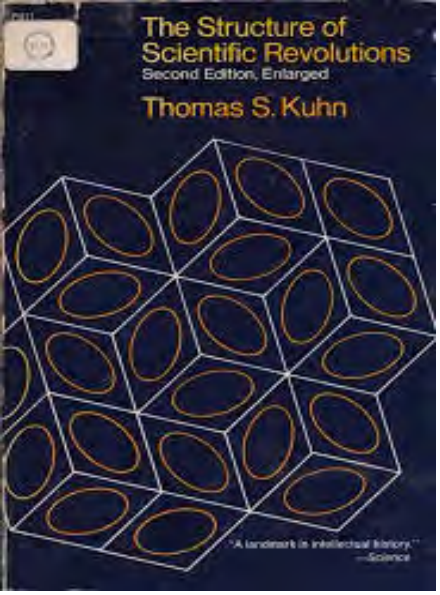
Jane Gilbert

Auckland University of Technology

Presentation to the

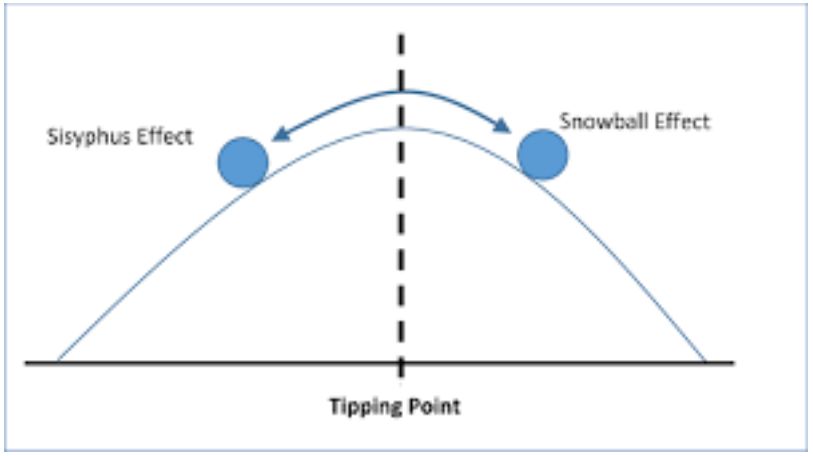
Shift happens - higher education and the future of learning, life and work symposium

hosted by the Centre for Learning Futures, Southbank, Griffith University, Brisbane, 10th October 2019



Three big trends, that taken together, look like the 'anomalies' that come before a paradigm shift

Higher Education at a 'tipping point'



If it is to have a worthwhile future, some re-thinking is needed

disruption

Three big trends

1. Shifts in context and purpose/s of HE
2. Digital revolution & exponentiality
3. The Anthropocene

1. Shifting context/s and purpose/s of Higher Education

Massification

Increase in participation rates: worldwide 1970 – 10% → 2015 – 35%

many countries now > 50% entering higher education

HE seen as essential infrastructure for knowledge economies

Universities no longer "elite" - **excellence AND inclusion**

credential inflation
– loss of scarcity value

internationalisation

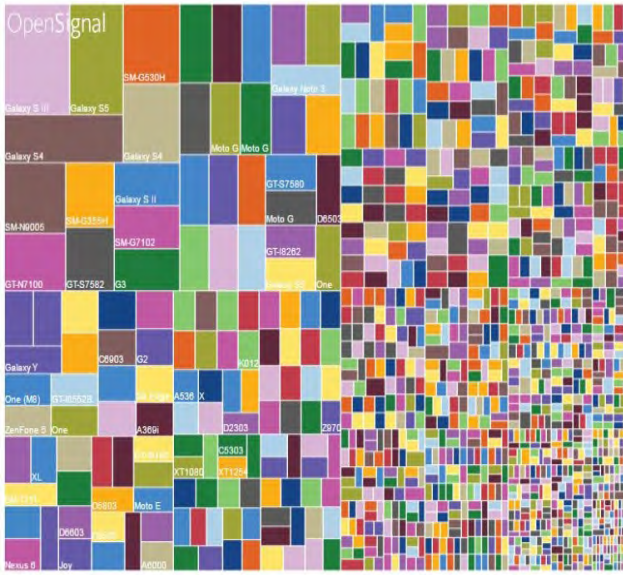
employability, work-readiness.

Funding

Tension between main funding sources
- government grants and student fees
- public good vs customer service

Costs rising, but "productivity" static
- governments unwilling to increase investment
- push for greater "value for money"
- focus on STEM subjects, pre-professional training …

Many costs passed on to students
- → increasing debt
- concern re "worth" of "investment"
- rise of the "precariat"
- graduate oversupply
- international competition…

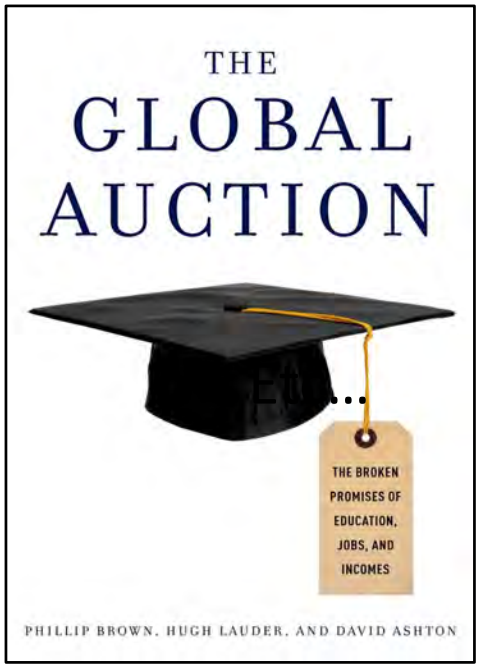


Funding

Intensification of work for academics
Fragmentation and outsourcing of key aspects of role

Increasingly precarious career structure for emerging academics – casualization, use of adjuncts, teaching assistants …

Etc …



"**Digitisation**" of learning

- online, "always on" learning
- ubiquitous accessibility of information
- MOOCs
- AI assessment methods

Demand for **"just-in-time" learning**

- **nano-degrees** & badges
- portable, flexible, stackable **micro-credentials**
- verification via Blockchain
- disruptive competition from other providers (LinkedIn)

→ **future role of university teacher? F2F learning?**

→ **re-purposing of university infrastructure..?**

Multiple—and confused--purpose/s of HE in 21st century?

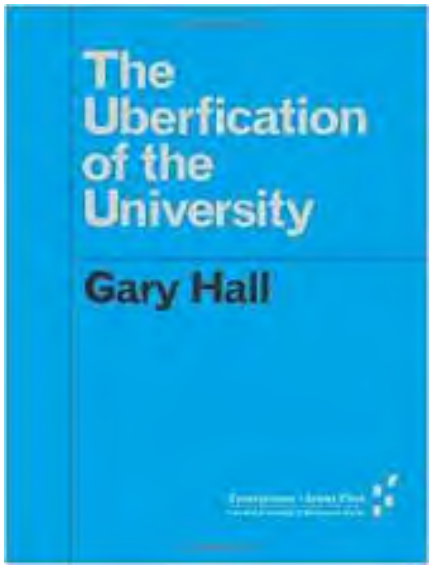
For **students**:

Knowledge or skills?

Education or training?

Wider social/civic good or individual benefit?

What does it even ***mean*** to be "educated" in the 21st century?



For **staff**:

What *is* an **academic** in the 21st century?

What is the role of **research** in the 21st C?

Who is it **for**? Who should **pay** for it" Why?

"uberfication" of researchers?

"micro-entrepreneurs of the self"

Response of HE so far…

Infrastructure expansion

- new buildings
- multi-campus sites across international borders
- new “modern learning environments”,
- new technological infrastructure
- more “learning support” for students

Pressure on academics to develop

- new **pedagogies** to better fit new technologies
- new kinds of asynchronous **courses** (online, blended, MOOCs)

…. while at the same time continuing with “old” ideals

- engaging in world-class **research** & **scholarship**
- attracting **external** research funding

i.e. be **everything to everyone** ….

These responses all “**add-ons**” to the existing model, which is increasingly **stressed**..

business-as usual + add-ons **without removing** or **re-thinking** anything

Increasing likelihood of HE being **split** into

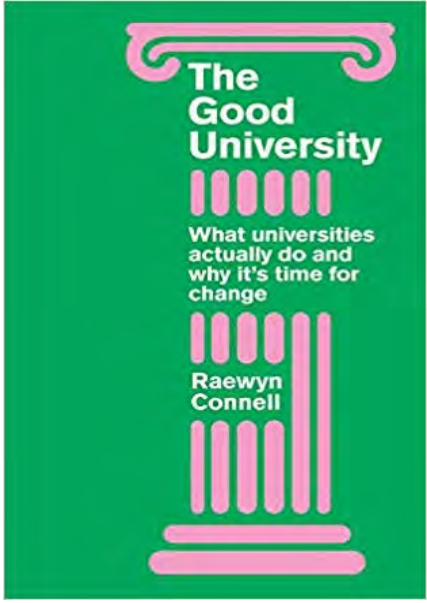
1. **content delivery**
2. production of **research “outputs”**

carried out by different classes of staff (with AI augmentation)

What is HE *for* in the 21st century?

What does a 'good university' look like?

Connell: the 'good university' of the future recognizes itself and the knowledge it builds as a global public asset, the product of the collective labour of many, over several generations. It is democratic, engaged, truthful, creative, sustainable …



Alternatively: HE could be offered by fully-fledged businesses. Most work outsourced at the cheapest rate. No campuses. Content delivery online and automated. Research, if any, funded externally.

So far, so familiar?

But: other things are going on…

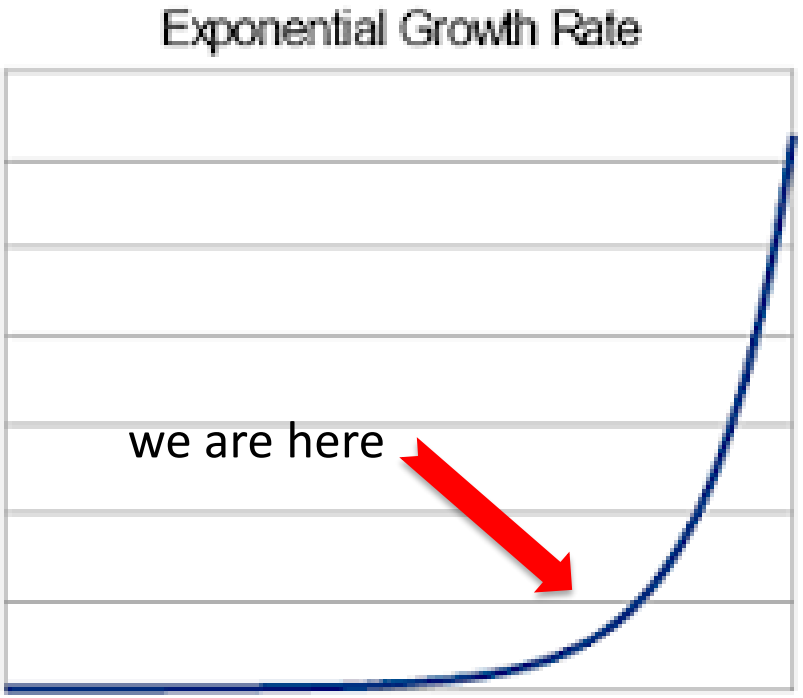
2. The digital revolution & exponentiality

Moore's Law

Gordon Moore - 1965 article in *Electronics* magazine –

capacity of digital technologies **doubles** every 12 months

→ now 18 months = (software & hardware)



exponential growth

- initially **unremarkable**
- initially **looks like** linear growth

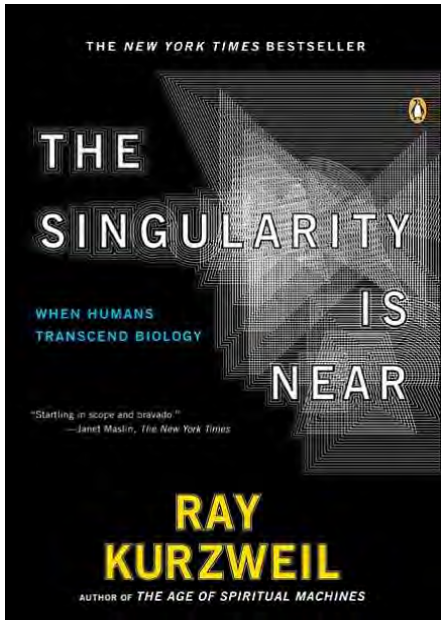
but it's **not** ….

The Singularity

"Exponentiality" has moved **beyond computing**

– **everything** is exponential now

Anything that *can* have IT "added" *will* have.
It will then change, slowly at first, but then exponentially.
This will disrupt existing understandings of the "thing", which will eventually lose trade-able "value" and be freely available to anyone.
It will also exist virtually – i.e. not as atoms, but "bits".



"6Ds" of exponentials (Peter Diamandis)

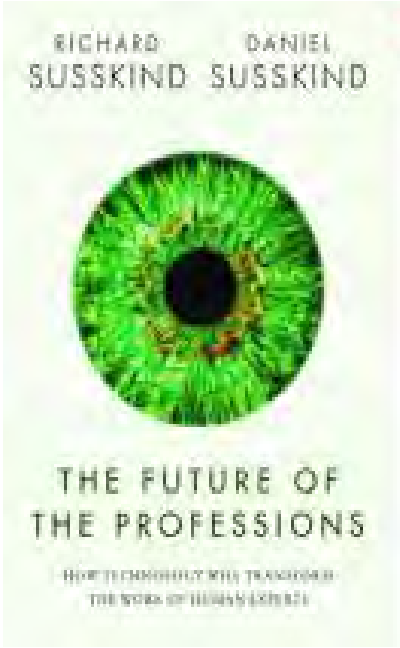
1. digitisation
2. deception
3. disruption
4. de-monetisation
5. democratisation
6. **de-materialisation**

A few examples:

	will disrupt
blockchain & bitcoin	finance, law, government - anything requiring contracts or third party verification
robotics, AI, machine learning	most manufacturing jobs, medicine
solar power	traditional energy industry
autonomous cars & trucks	transport industries
biotechnology	traditional farming
3D printing anything	de-materialisation of manufacturing
digital crime	traditional law enforcement
neuroscience & interactive animation	movies & acting

The Singularity

There are **no** industries/jobs that **won't** be disrupted by this.



Most of today's jobs will be done better by computers, **including the former "professions"**

If "the future" for you involves doing more or less what we do now, **you're not paying attention**…

Implications for HE?

Increasing focus on vocational/pre-professional training preparing for today's jobs is probably misguided.

While new jobs will be created to "replace" the dis-established, we're likely to see expansion of "gig economy"
(Uber, AirBnB, TaskRabbit etc)..

Role of vocational HE?
Foster generic content-free 'C-skills' - agility, entrepreneurialism, collaboration, communication, problem-solving …
Focus on IT skills, coding?

Is this educative?

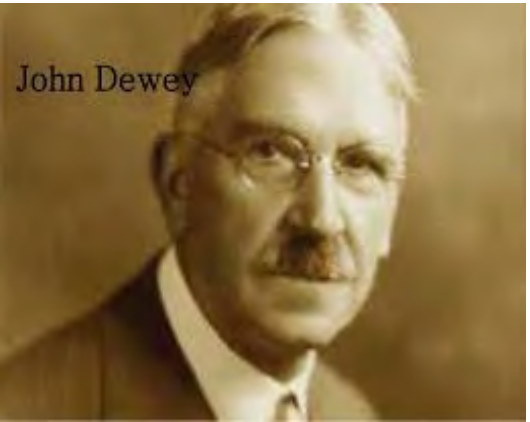
Or refocus on education for the "post work" era?

The question is not ***whether*** AI will take our jobs, but **what** we'll ***do when*** it does..

If AI does **all the productive work**, and we produce all we need with a fraction of today's workforce → no mass "labour market"

Implications for **education**?
For the **economy**?
For **social organisation**?
For **income distribution**?

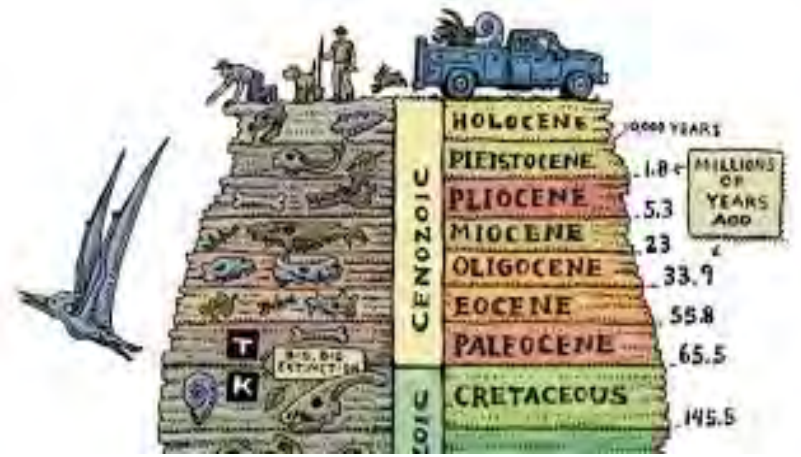
UBI



Back to the future?

re-visiting 'old' ideas about what education is *for*, what it means to be an educated person …

3. The Anthropocene



What is it?

= new geological era, after Holocene

'anthropo' = human;
'cene' = new/recent (geological era)

changes in earth's physical processes now <u>caused</u> by <u>human</u> activity

started about 200 years ago with Industrial Age & huge increase in burning of fossil fuels (= carbon sequestered over 100s of millions of years from atmosphere by plants)

→ vast increase in atmospheric CO^2
→ rise in average global temperatures
→ rise in sea levels, more extreme weather
→ **major implications** for
- natural ecosystems
- agriculture
- current human social, economic & political life

Industrial Age
AKA “carboniferous capitalism”
- based on burning fossil fuels
- generated huge wealth for some

Industrial Age is ending

We’re now in the Anthropocene

But: many of our current disciplines **forged in** & **part of** Industrial Age thinking

New ways of thinking needed

Significant **challenge** to the way we think about the content, framing and purpose/s of the **current disciplines**, and to their place, nature and purpose in **education**, at all levels.

For example: **science** …

Bruno Latour (2013 Gifford Lectures):

Anthropocene → major intellectual shift for **science**

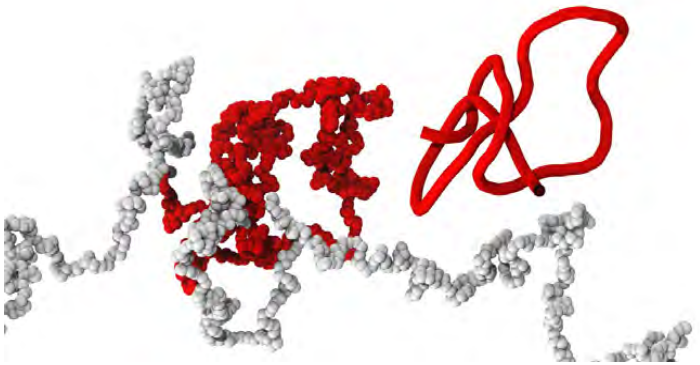
From: a view of nature as something to be **tamed**, **deified** or **objectified,** something we are "**apart from**"…

To: something we're ***part of***, deeply inter-connected or "**entangled**" with

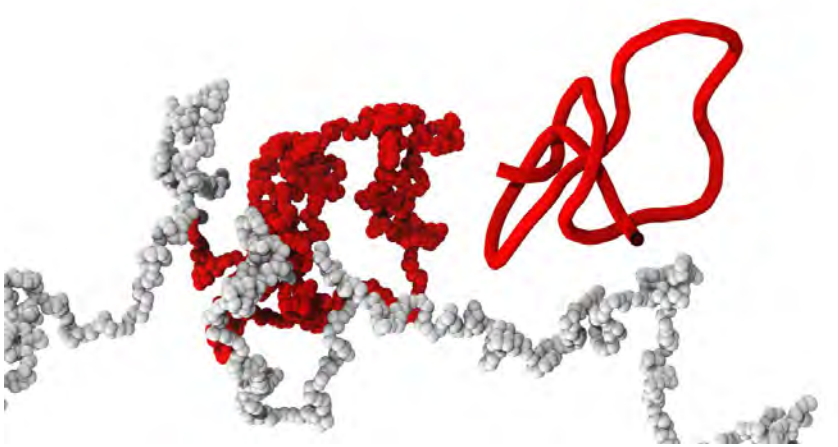
Science, people, society, nature, the Earth are **part of** each other, cannot be separated

Society is now a **force of nature**

So is **science**



Latour: the Anthropocene challenges **scientists** to think very differently about

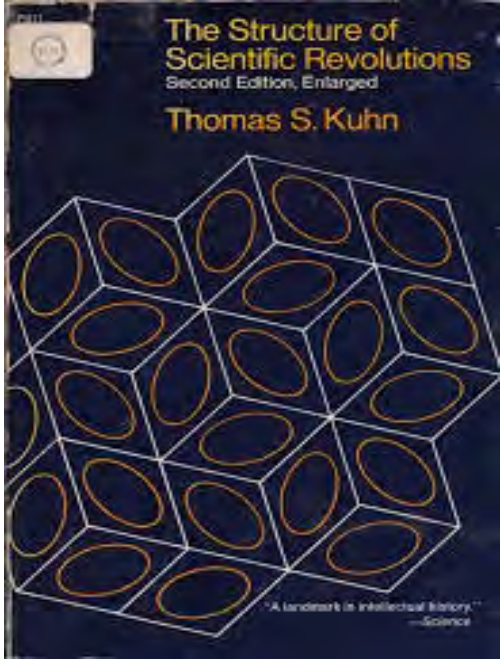


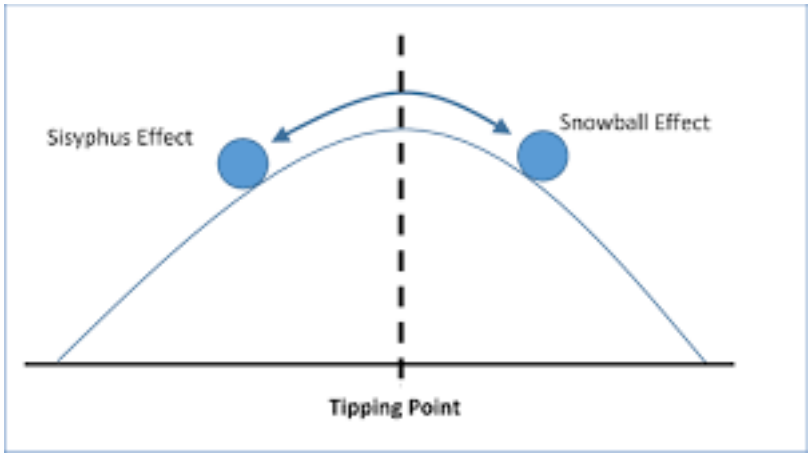
- what **science *is***
- what it is ***for***
- ***who*** it is for
- who or what it should be **engaging** with?

Latour: scientists need **new intellectual tools** capable of exploring the "**crossings**" "**borders**" or "**entanglements**" ***between*** science and nature, exploring how each is **part of**, and **creates** the other…

There will be **similar challenges** for other disciplines…

These three big trends, taken together, look like the build-up of '**anomalies**' that, Thomas Kuhn argues, characterize the beginning of a '**paradigm shift'**, a '**tipping point**', a time of **sudden change**, from which it is impossible to go back …



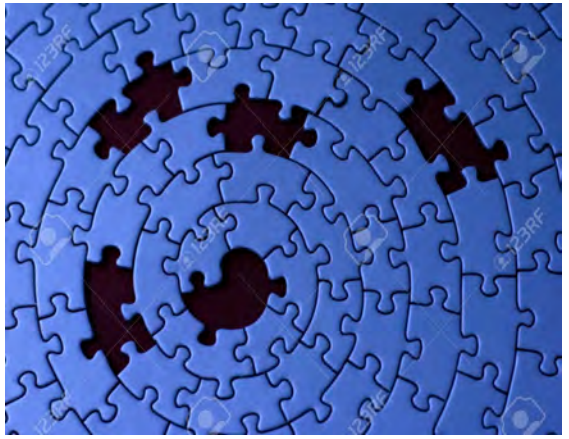


Current responses so far are:

1. **Kuhnian "puzzle-solving"**

Attempts to preserve, hold together existing paradigm, force new information to 'fit with' it, because that's 'how things are'…

Business-as-usual, with add-ons



2. **"Used future"** thinking*

i.e. assuming that whatever exists now (and has existed over the last few hundred years) will *change*, but the ***same basic processes*** will ***still be operating***, much as they do today.
This ***blinds*** us to ***other*** **possible images** of the future, images that are ***not*** already structured or constrained by **past** thinking…

*adapted from Sohail Inayatullah & Jim Dator

Exponentiality and the **Anthropocene** are **game-changers**

"Historical change is like an avalanche.
The starting point is a snow-covered mountainside that looks solid.

All changes take place under the surface and are rather invisible.
But something is coming.
What is impossible to say is when."*

* Historian Norman Davies (2012)

How can we **re-imagine** Higher Education for the **post-Singularity**, **post-work**, **Anthropocene** age?

What could 'future-oriented' Higher Education look like?

For professional futures thinkers…

What **isn't** a good idea …

- throw everything out and start again …
- business-as-usual with a few tweaks

What ***is*** a good idea …

- make the effort to **think** differently, **engage** differently and **act** differently in the **spaces between** past and future, ***using both***.

e.g. Riel Miller (2006)

Futures 'literacies' …

"The future **isn't** something that "just happens", something we must try to **forecast**, **react** to, or **proof** ourselves against.
Nor is it a **puzzle** to be solved.

We *all* **create** the future *every day*, by the *choices* we make, and the *actions* we take - in the present, ***starting now***."

Estuary metaphor

Keri Facer (2016)

Estuaries are places where rivers mingle with the sea.
They are places of biological richness, complexity, abundance, and novelty.

A future-oriented higher education could be a liminal space between old and new, past and future, a space where history, the future and the present are made and re-made, a space for openness, emergence, possibilities, novelty and hope.

Education, traditionally, has a great many different functions …

- **civic/social development** – fostering the knowledge, capacities & dispositions needed to build & maintain the kind of **society** we want
- drawing out/realising **people's natural 'potential'**
- qualifications/**work** preparation
- individual and collective **knowledge development**
- individual and collective **cognitive development**

Is it possible to **re-imagine**, **re-purpose** these for the Anthropocene?

Which of these ***should*** be re-purposed (in Higher Education)?

This is up for debate …

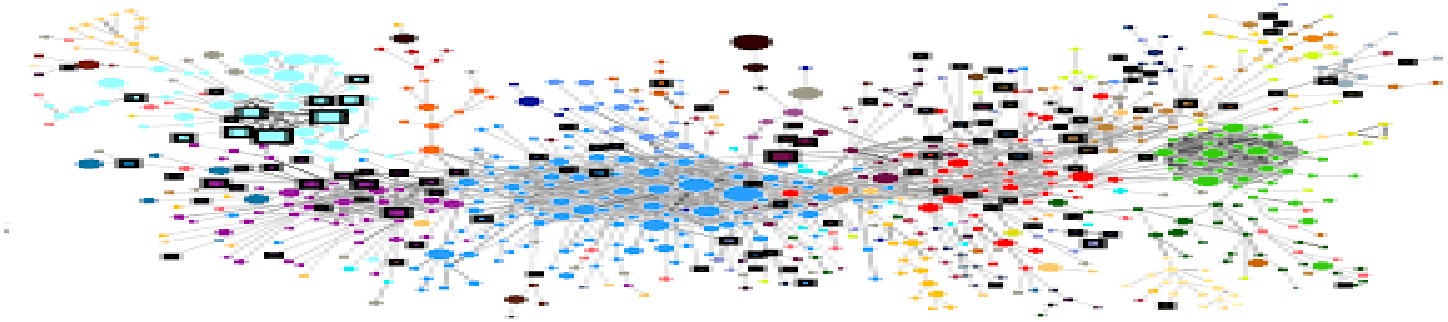
Focusing on knowledge/cognitive development…

'Old' HE

Aim: to **discipline into the disciplines**, to *reproduce* existing knowledge, existing ways of thinking, and to *use* these to build *new* knowledge *in the existing disciplines*

'Future-focused' HE ?

Aim: to scaffold ability to think **between** and **beyond** existing disciplines, to create **new** ways of thinking, new kinds of futures that are **not already colonized** by past ways of thinking



Creating a ‘future-oriented’ Higher Education system ***isn’t*** just an issue for governments, administrators, the ‘powers that be’.

Everyone in the HE system creates its future by the ***thinking*** they do, the ***choices*** they make, and the ***actions*** they take **now**, in the present.

Beware of slogans that have had the **thinking** removed

"The trouble is that, for any of this thinking to make its way into **practice**, it has to be passed through a [policy] machine that converts it into a **product**, a **procedure**, or a **slogan**.

Like the flour mill that removes the bran and the wheat germ, leaving only the starch, this [policy] machine **removes all thought**."*

Continuing this metaphor, we could add…
"leaving only **empty calories** that will eventually kill us".

* Carl Bereiter (2002). *Education and Mind in the Knowledge Age*. p. 386.