The digital lecturer

Making sense of change

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The digital lecturer: making sense of change

The rapidly accelerating growth of digital media through the Internet and mobile devices brings new adjacent possibilities and changes to how we teach, how we research and disseminate our research, and how we engage with our communities. While the opportunities are manifold, there are many threats in this fast changing landscape. From the never-ending pressures of constant digital connection, wherever you are in the world, whatever the time of day; to the challenges of upcoming competitors like MOOCs and publisher-run courses; to problems teaching students who may send and receive hundreds of short messages in a day, including in our classrooms; to concerns about how we should disseminate our research when attention spans are shortened and messages are passed in bite-sized pieces of 140 characters or fewer; to fears that we are being sucked into filter bubbles, losing our privacy, losing our focus, and much much more. These are issues close to my heart: I have spent the last six years teaching, researching and working at a distance, fully engaging with what it means to be a digital professor. During this process I have been using and building new technologies, and heading a couple of large projects that examine their effects. This session will be an opportunity to share your concerns and hopes with others, to cast a critical eye on what is gained and what is lost. Along the way I will share some of my discoveries and those of my colleagues at Athabasca University (Canada's open university), but my intent is that this will be about sharing and debating the issues that affect us all. In this session I hope that we will learn together, share our fears, our ideas, our methods of coping with and exploiting the changes that are affecting our lives as teachers and researchers: to make a bit of sense of it all.

My background

University of Brighton

Athabasca University

My perspective is coloured by:

first degree in philosophy

many years as an entertainer

programmer

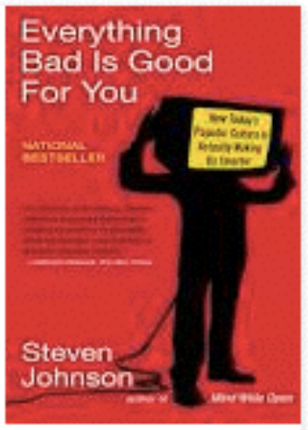
ubergeek for computing at UoB

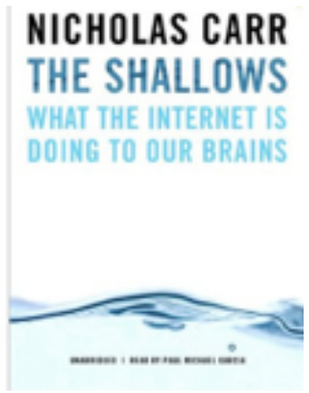
lecturer at UoB (interests in computing veering to education)

since 2007 at AU, Canada's open university, fully online

I am a geek: in my house there are 6 Macs, 2 PCs, 5 tablets, 7 phones, 3 iTV devices, various PDAs, numerous iPods, various special purpose PCs (backup, router, web, etc), a netbook, an ereader and plenty more…I have recently finished an $875K project getting the latest toys, from book scanners to NFC tags, tablets, phones, digital capture devices, etc. Also spent 4 years building and running the Landing, a social media site a bit like community@brighton.

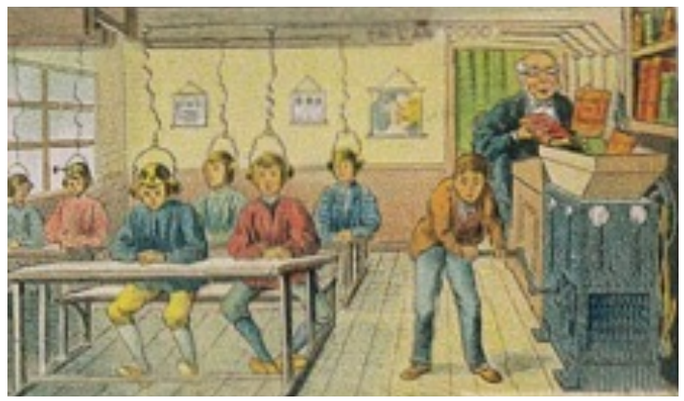
I teach and work at a distance (12-14 hours drive from AU central). Currently on sabbatical, learning to program properly and building advanced social tools.





opinions are polarizing - on the one hand, the great cognitive benefits of digital tech, on the other the things we have lost or are in danger of losing

Plan



Sharing hopes
Sharing fears
Understanding digital literacy
Understanding technologies

In this session I'd like to explore how digital technologies are affecting us as academics.

To start with I'd like to get your ideas on the good and the bad. How have digital technologies impacted your research and teaching. How *will* they?

I'd then like to discuss what makes digital literacy a complex problem, moving on to the nature of technologies and some ideas about how to understand their nature and role in learning, teaching and research.

a skim through the slides

many tools for learning - e-learning is here. It happened. Where are we in all this?

a plethora of devices - wearable tech, giant TVs, multiple devices, even digital tattoos,

positive things

what do you like about technology? what does it do for you? what would you miss if it went away? Discussion and debate about benefits of technologies.

knowledge for all

cornucopia of knowledge

remixing and assembly

any time, any place

diversity

freedom

information at your fingertips

ubiquitous connection

ubiquitous access

environmental benefits

control

flattened hierarchies

new media, new possibilities

speed, consistency, reliability, presentation

What technologies do you love?

brainstorming and note taking - a chance to share ideas about how technologies make our lives richer, easier, more efficient, etc

fear and loathing

what worries or concerns you about technologies

filter bubbles

information overload

obsolescence

connection overload

security

complexity

loss of depth

fragility

privacy

dependency

distraction

brittleness

shallowness

dehumanization

loss of control

malice

plagiarism

loss of human connection

instrumentalization

all of these are subject to debate and nearly all have a positive side as well as a negative one

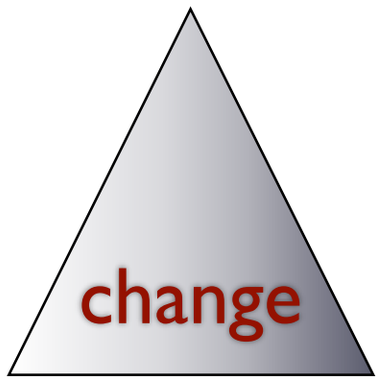
What technologies do you hate?

freeform discussion and debate. A chance to identify problems and issues, and perhaps a few solutions

becoming digitally literate

so how do we gain the benefits, what are acceptable losses, why is it a problem?

Three related problems with digital literacy



evolution

Diversity

- Change
  Digital literacy is a moving target

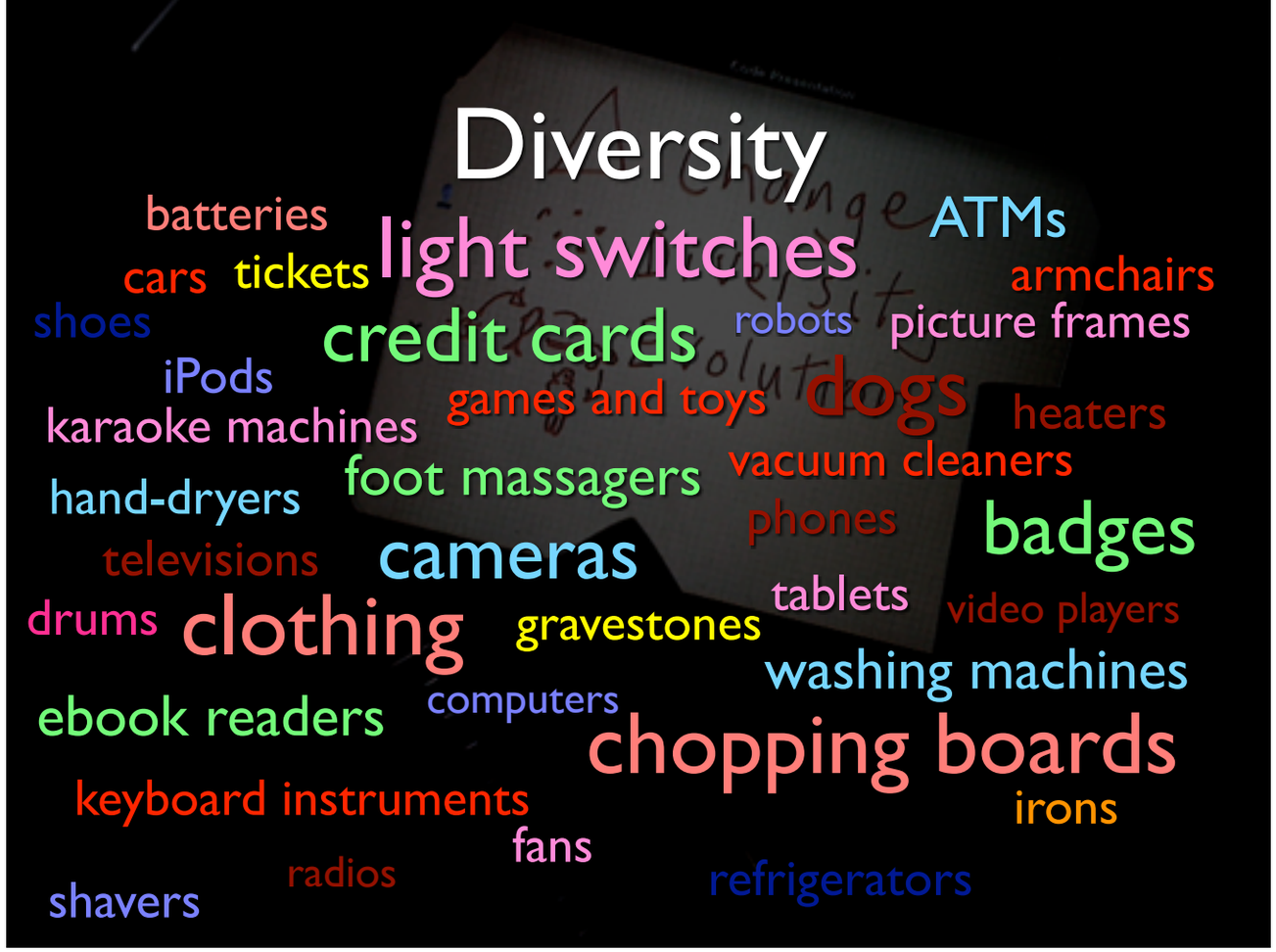
- Diversity
  A very broad range of skills and technologies

- Evolution
  Difficult things become trivial, but bring new and different problems

Change

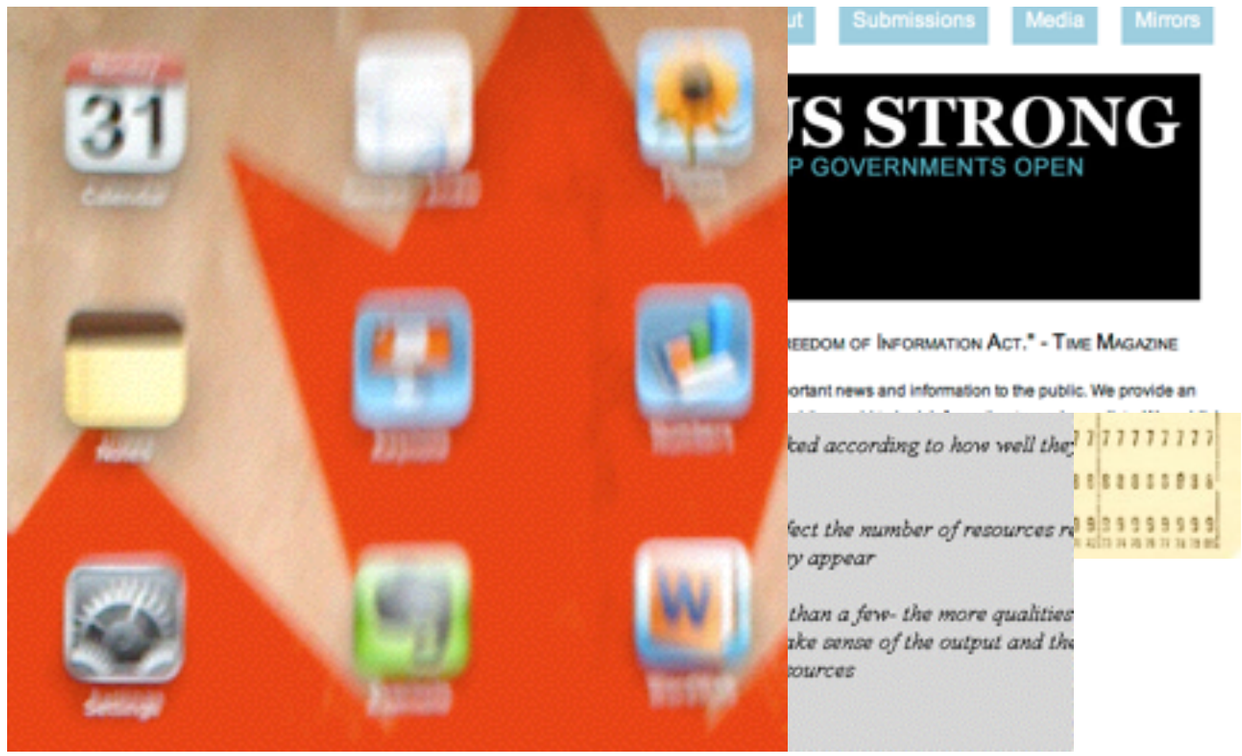
http://commons.wikimedia.org/wiki/File:Hollerith_card.jpg

Digital skills are not durable like (say) reading, writing, arithmetic, music, physical skills etc. In fact, it's worse than that - they are becoming redundant at an increasing rate. This leads to ever-increasing diversity...



Digital skills are becoming more and more diverse – there is no such thing as a single kind of digital literacy. In fact, there are millions of potential digital literacies.
Worse still, this is an accelerating trend – because each new technology increases the adjacent possible and can be assembled with other technologies, change is becoming much faster all the time.

Evolution



Not only is there increasing diversity but the kind of technologies are changing too. Greater complexity does not mean greater end-user complexity: the vast majority of technological changes in digital systems are to do with making things easier, so hard-earned skills in older technologies no longer have value. But we need new skills with each new technology and, especially as large scale social systems lead to unexpected effects (more is different) there is nobody who is sufficiently expert to guide us or, if there is, it is very hard to distinguish them from those without such expertise.
Older skills become redundant as technologies improve but, as they do, they change the surrounding ecosystem and create new challenges and needs for different kinds of literacy.

The adjacent possible

The adjacent probable

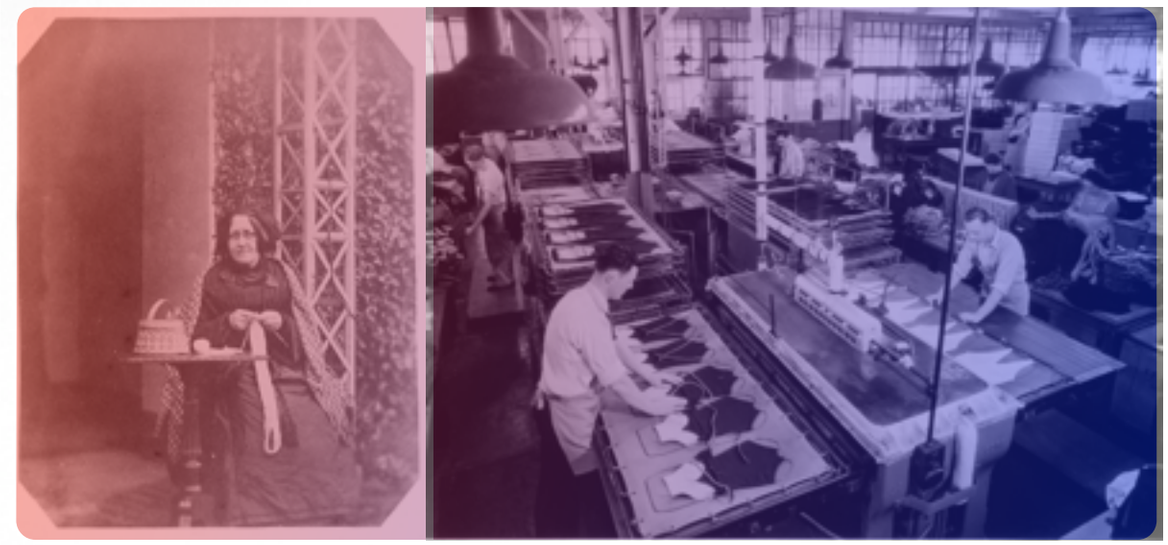
Kaufman talks of the adjacent possible - as changes occur within a complex system they open up new opportunities for further change/ Some authors talk of affordances - what becomes possible and enabled with different technologies, but it is also about constraints - as we open up new avenues, some of the old ones close off or become redundant. For instance, a digital image or piece of music is often worse in objective terms than its analogue counterpart.
It is also important to note that, while possibilities may be opened up, not all are equally probable. Technology, as Kevin Kelly notes, has a direction: it encourages certain actions and discourages others, even when they are equally possible. A learning management system *can* be used in an open manner without courses and classes and similar structures, but it encourages people to use it in a fashion for which it was designed.

Technology

The orchestration of phenomena to some use

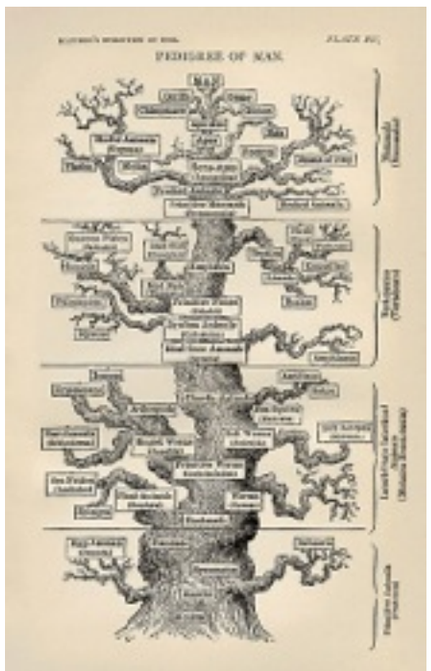
W. Brian Arthur

Soft and hard technologies



So, a technology can be simply a process, and/or embodied in tools or tools, and is almost always an assembly of more than one technology.
These pictures show somebody knitting with knitting needles and a factory producing knitted garments. The one seems to involve more technology than the other, but is that really so? The technological processes employed by the woman knitting are very rich, involved and complex - perhaps even more so than the simplified algorithms embodied in the machines.
The examples are used by Ursula Franklin when she talks of holistic technologies (those that enable us to expand as human beings) and prescriptive technologies (those that force use to play roles subservient to the ‘machine’. I will be describing these extremes as examples of soft and hard technologies.

Softness



Increasing the adjacent possible

Some technologies are softer than others - they open up new possibilities and can enable us to do many things in many ways. they enable creativity and can be used in many ways.
The stick is a soft technology, so is the computer (at least, if you are a programmer - not if you are using a computer as a shop assistant in a supermarket operating a sales till!)

Others are harder and deliberately limit the ways in which they can be used.
(side note: once we have uncovered new uses, we often wind up hardening them into new tools, which themselves may open up further adjacent possibilities)

Hardness

Makes things easier
By reducing choice

automation, embodying soft technological processes into fixes processes and tools, reduces choice, and therefore makes it easier to do whatever the technology has been designed to do (it also does many other good things like reducing cost, increasing speed, reducing error)
Automated production lines are hard technologies (including the whole technological assembly, not just the machines - the processes and methods of the production line are what contribute to making it harder).
A checkout till is a hard technology. Rules that cannot be broken are harder than rules of thumb. The strict rites and rituals surrounding prayer in many formal religions are a lot harder than, say, a camera. An online shop is harder than a wiki.

orchestration

Technology is orchestration. We orchestrate soft technologies. Hard technologies embed that orchestration so we do not have to make choices.

points of view

Image by Jules Feiffer, from The Phantom Tollbooth, by Norton Juster

Alec Bings comes from a land where everyone has the same point of view – their feet grow to the ground (unless they are born upside down, in which case their feet reach the stars). It all depends on your point of view – to an elephant a bucket is a cold drink, to an ant it is a swimming pool. Technologies are soft or hard depending on the orchestration. Just as the screwdriver can be many technologies, an LMS is hard for a student, softer for a teacher, very soft to Martin Dougaimas.

Hard is easy

Hard technologies are designed to make things easier, faster, more efficient, less prone to error, often cheaper. But they do so at the cost of creativity and flexibility.

Soft is hard

Softer technologies are difficult. The softer the technology, the more difficult it is for humans to employ, as a general (but not unbreakable) rule.

Softer technologies increase the adjacent possible by enabling and/or making more likely new choices to be made.

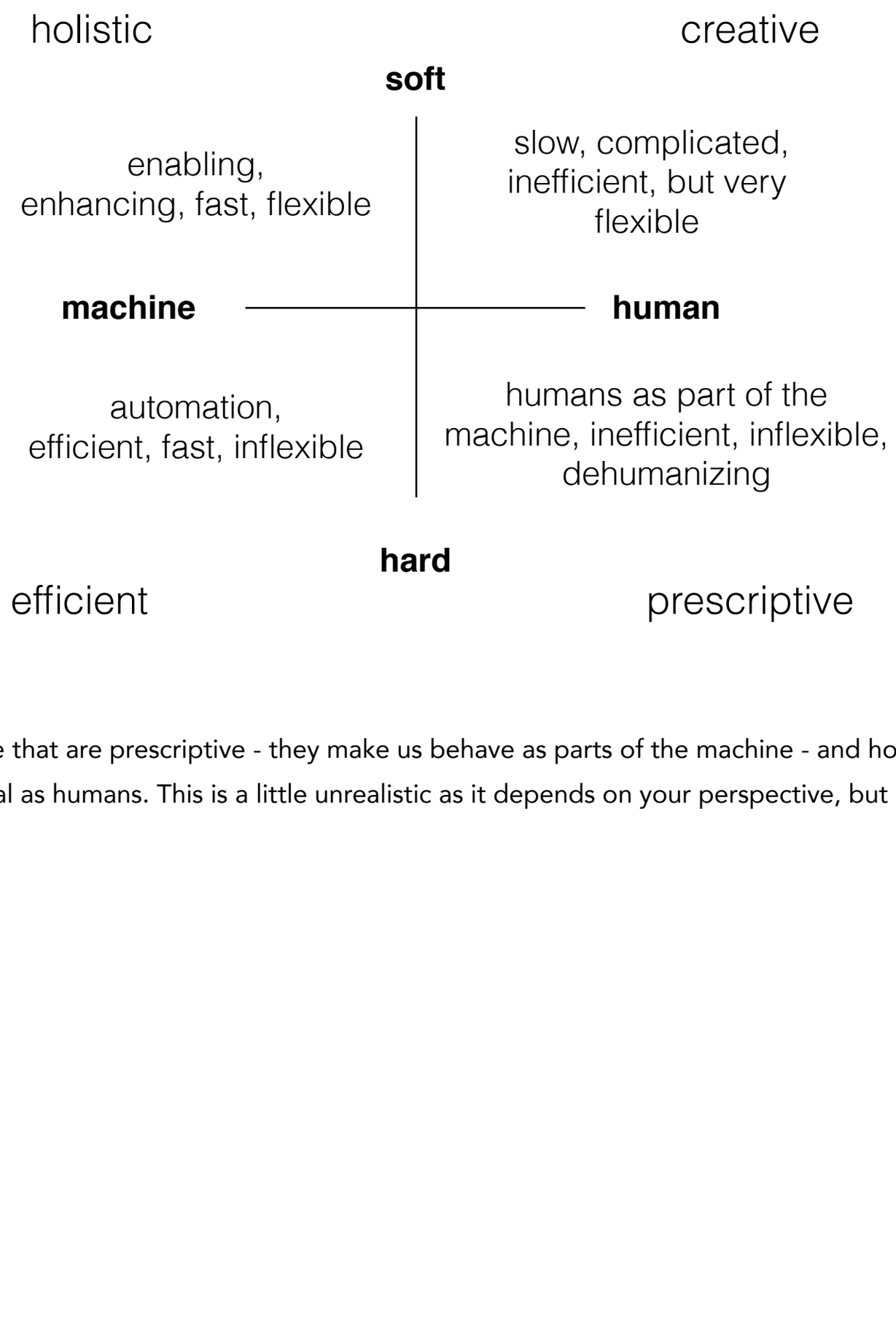
More choices come at a price - we have to make them. That is one thing that makes them more difficult or hard.

There is no simple rule that technologies should be soft or hard - it depends upon the context. What does matter is if a technology is too hard when less constraint is needed, or too soft when greater efficiency or reliability is needed.

Analogue literacy

- The dance of technology

- a co-evolution in which we adapt to machines and they adapt to us
- Digital literacy is a temporary and diminishing issue from the time that ‘digital’ meant ‘desktop computer’
- range and the effects of the adjacent possible mean the literacies we need are soft, analogue literacies
- Solutions concern connecting and finding new knowledge
- The big remaining problem: access



A technology typology

Franklin divided technologies into those that are prescriptive - they make us behave as parts of the machine - and holistic - that enable us to engage creatively and that increase our potential as humans. This is a little unrealistic as it depends on your perspective, but it’s a useful dichotomy to get a broad sense of how things fit together

analogue literacies

We have found that there are no trite answers or innate patterns. The digital generation/m-gen/millenials/etc is a myth, as regards use of digital technologies. It turns out that those that use them learn to use them, and older people do this at least as well as younger ones. Fear is a major factor in preventing use. More than anything else, it ain’t what you do it’s the way that you do it: all technologies are assemblies in which all the pieces, soft and hard, have to fit together. We do not need digital literacies, we need analogue literacies. Communication; teamwork; creativity; locating, organizing and evaluating information; understand legal/ethical issues

Personal learning environments

aggregate
integrate
remix
assemble

harden where you can
(*but* beware path
dependencies)
open is best
explore
embrace change
accept failure

your suggestions

thank you

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