

Lecture Five



Trimester 2, 2017
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Lecture Five Outline

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1

Where This All Started

Where This All Started

“ I don’t know about you, but I haven’t quite figured out exactly what technology means in my life (Kelly, 2005)

“ For any given algorithm, for any given technology, you have a choice about how to think about it. You can think about it like it’s a new entity, or you can think about it like its just a tool that you can use (Lanier, in Schwartz, 2013, p.88)

This is where the question for section one of your second assignment came from ...

... reflect on the advent and offering up of the Internet for mass public consumption and society’s subscription to the resultant technologically converged global village, and how it has forever altered the way humanity and business function ...

This component of the assignment always aimed to challenge you. To reflect critically – personally and in an academic manner, and thereby generate a philosophical standpoint on the impact of technology on humanity and business

Source: Kelly, K. (2005). How Technology Evolves. Paper presented at TED, San Francisco, California.

2

Focus On This

1. TELL ME A GOOD STORY.

2. WHAT IS THE FOCUS?

TECHNOLOGY & BUSINESS
TECHNOLOGY & HUMANITY
TECHNOLOGY, HUMANITY, & BUSINESS

3. WHAT IS YOUR MAIN POINT? }

4. WHAT IS THE TITLE? }

5. WHO COULD SUPPORT OR
BACK UP YOUR POINT?
(REFERENCES) ..

6. HOW WILL YOU FINISH?

FOUR IDEAS

- THIS IS MY STANDPOINT
- A CALL TO ACTION.
- A POWERFUL QUESTION.
- AN INSPIRATIONAL STATEMENT.

3

What Does Technology Want

What Does Technology Want

*“I’m perplexed about what the **true meaning of technology is as it relates to humanity**, as it relates to **nature**, as it relates to **the spiritual**. And I am not even sure what technology is” (Kelly, 2005)*

*“Technology is **anything that was invented after you were born**” (Alan Kay, in Kelly, 2005)*

*“Technology is **anything that doesn’t quite work yet**” (Danny Hillis, in Kelly, 2005)*

Source: Kelly, K. (2005). How Technology Evolves. Paper presented at TED, San Francisco, California.

What Does Technology Want

“*What does technology want? What are its inherent trends and biases? What are its tendencies over time?* (Kelly, 2005)

Kelly approaches his own question from a biological and evolutionary standpoint (i.e. what does biology want and what does evolution want) ...

“*What does our universe and our culture look like through the eyes of technology* (Kelly, 2005)

Source: Kelly, K. (2005). How Technology Evolves. Paper presented at TED, San Francisco, California.

What Does Technology Want

“ ... that *nowhere on Earth have we ever been where we don't find life ... it is ubiquitous ... it never retreats ... it always wants to be more ...*

“ ... and that I can't think of a single general principle of biology that does not have an exception somewhere by some organism ... *that ultimately there isn't anything we can say that's true for all life, because every single one of them is hacking something about it* (Kelly, 2005).

“ ... and if we look at the general shape of the approaches to hacking life *there are, current consensus, six kingdoms. Six different broad approaches: the plants, the animals, the fungi, the protists, the bacteria, and the Archaea bacteria. Those are the general approaches to life. That is one way to look at life today* (Kelly, 2005)

Source: Kelly, K. (2005). How Technology Evolves. Paper presented at TED, San Francisco, California.

What Does Technology Want

“*The general long term trends of evolution are ubiquity, diversity, specialization, complexity, and socialization*” (Kelly, 2005).

“*... the major trends in technology evolution are the same ... technology is the seventh kingdom of life*” (Kelly, 2005).

Except for one major difference ...

“*... when [a biological organism is, or goes] extinct, you can't have it as your parent. But that does actually happen with technology. Technologies don't die. You can delay technology, but you can't kill it*” (Kelly, 2005).

Source: Kelly, K. (2005). How Technology Evolves. Paper presented at TED, San Francisco, California.

What Does Technology Want

“*Culture is the accumulation of ideas [and technologies are ideas]. That’s what its for. Its so ideas do not die out* (Kelly, 2005)

“*What they [ideas] are really about is accelerating and changing the way in which evolution happens* (Kelly, 2005)

“*Technology is changing the way ideas are generated. Technology is accelerating evolution*” (Kurzweil, in Kelly, 2005)

Source: Kelly, K. (2005). How Technology Evolves. Paper presented at TED, San Francisco, California.

What Does Technology Want

“... technology is really about better ways to evolve. *It is the evolution of evolvability. This is what we call the ‘infinite game’.* That’s the definition of the infinite game (Kelly, 2005)

“... A finite game is play to win, and an infinite game is played to keep playing (Kelly, 2005).

“Technology is a cosmic force (Kelly, 2005).

“... technology is bringing us choices, possibilities, freedoms. *It is an expansion room to make differences. Our humanity is defined by technology.* All the things that we think we really like about humanity is being driven by it (Kelly, 2005).

Source: Kelly, K. (2005). How Technology Evolves. Paper presented at TED, San Francisco, California.

What Does Technology Want

*“Technology is a way to evolve the evolution. **It is the medium in which we play the infinite game**”
(Kelly, 2005)*

*“We have a **moral obligation to invent technology** so that every person on the globe has the potential to realize their true difference (Kelly, 2005)*

Source: Kelly, K. (2005). How Technology Evolves. Paper presented at TED, San Francisco, California.

4

Human Expression is a Peasant Activity

Human Expression is a Peasant Activity

Jaron Lanier is a **technologist**. He was **instrumental in setting up the infrastructure of the Internet**, was a **key figure in the digital revolution**, and played a **significant role in the invention of virtual reality**

*“He aimed to create technology that would deepen the way the human race understand their world, however, **over the past ten years has ‘developed a philosophical position that strongly refutes the idea that we should follow the path that technology is leading us down** (Schwartz, 2013, p. 83).*



Scwartz, O. (2013). Jaron Lanier is a humanist. *Dumbo Feather*, 37, 80-92.

Human Expression is a Peasant Activity

Lanier believes that the problem with the Internet and Web 2.0 technologies now, *“is that it is designed to act as if people are machines, as if we are building a gigantic electronic brain of a planet and that people are just components of that brain* (Lanier in Schwartz, 2013, p.84)

For example. When you use the online tools to translate from one language to another, like Google translate, it seems to work like magic. It seems like there is this smart brain in your computer that can translate text. But the translation is really just a mashup of pre-existing translations by real people. The current set up of the internet trains us to ignore the real people who did the first translations, in order to create the illusion that there is an electronic brain.

It dehumanizes people. It reduces people.

(Lanier in Schwartz, 2013, p.84)

Scwartz, O. (2013). Jaron Lanier is a humanist. Dumbo Feather, 37, 80-92.

Human Expression is a Peasant Activity

In that context ... *“The creative become subservient to the structure of these giant computers, individuality, creativity, and diversity is abolished, and human interaction is demeaned and ultimately weakened* (Lanier in Schwartz, 2013, p.84)

“In a way, human expression will become a peasant activity (Lanier, in Schwartz, 2013, p.88).

Swartz, O. (2013). Jaron Lanier is a humanist. *Dumbo Feather*, 37, 80-92.

Human Expression is a Peasant Activity

“Don’t get me wrong. There are plenty of creative people online. I just think there has been a strange effect recently, where people sort of get this ego boost as if they’ve achieved something when they really haven’t. It’s very fleeting. And there’s so many other people doing similar things. After a few years, no one will remember what they did. Nothing sticks except for the power of the giant computers run by Google or Facebook or the NSA” (Lanier in Schwartz, 2013, p.84)

“Because all of this stuff is being aggregated by big servers like Facebook, and distributed by Instagram or Twitter, the glorification of the big server eventually overwhelms whatever cool little thing is being distributed” (Lanier, in Schwartz, 2013, p.88).

Scwartz, O. (2013). Jaron Lanier is a humanist. Dumbo Feather, 37, 80-92.

Human Expression is a Peasant Activity

“We happened to design the World Wide Web to destroy middle classes and empower whoever had the biggest computers. That design is not intrinsic to networking. A lot of people do not know this, but, there were a lot of other designs for the internet that were completely different (Lanier in Schwartz, 2013, p.84)

Scwartz, O. (2013). Jaron Lanier is a humanist. Dumbo Feather, 37, 80-92.

Human Expression is a Peasant Activity

The primary concern with technology is, *“If you don’t treat humans as special, if you don’t create some special zones for humans – especially when you are designing [or integrating] technology – you’ll end up dehumanizing the world. You will turn people into some giant, stupid information system*

(Lanier, in Schwartz, 2013, p. 85)

Swartz, O. (2013). Jaron Lanier is a humanist. *Dumbo Feather*, 37, 80-92.

Human Expression is a Peasant Activity

Jaron Lanier is a humanist ...

5

Screwing The Middle Class

Screwing The Middle Class

“The rise of the Web has demonstrated that vast numbers of people are interested in being expressive to each other and the world at large”

“This is something that I and my colleagues used to boldly predict, but we were often shouted down, as the mainstream opinion during the age of television’s dominance was that people were mostly passive consumers who could not be expected to express themselves”

(Lanier in Anon, 2010)

Editorial Review - A Q&A with Author Jaron Lanier. (2010, January 1). Retrieved April 13, 2015, from <http://www.amazon.com/You-Are-Not-Gadget-Manifesto/dp/0307389979>

Screwing The Middle Class

“In the developing world, the Internet, along with mobile phones, has had an even more dramatic effect, empowering vast classes of people in new ways by allowing them to coordinate with each other” (link to Tapscott there guys).

“That has been a very good thing for the most part, though it has also enabled militants and other bad actors”

(Lanier in Anon, 2010)

Editorial Review - A Q&A with Author Jaron Lanier. (2010, January 1). Retrieved April 13, 2015, from <http://www.amazon.com/You-Are-Not-Gadget-Manifesto/dp/0307389979>

Screwing The Middle Class

“The problem is not inherent in the Internet or the Web. Deterioration only began around the turn of the century with the rise of so-called ‘Web 2.0’ designs. These designs valued the information content of the web over individuals”

*“It became fashionable to aggregate the expressions of people into **dehumanized data**”*

“It screws the middle class”

*“Only the aggregator (like Google, for instance) gets rich, **while the actual producers of content get poor**”*

(Lanier in Anon, 2010)

Editorial Review - A Q&A with Author Jaron Lanier. (2010, January 1). Retrieved April 13, 2015, from <http://www.amazon.com/You-Are-Not-Gadget-Manifesto/dp/0307389979>

Screwing The Middle Class

“ This is why newspapers are dying”

“It might sound like it is only a problem for creative people, like musicians or writers, but eventually it will be a problem for everyone”

“When robots can repair roads someday, will people have jobs programming those robots, or will the human programmers be so aggregated that they essentially work for free, like today’s recording musicians?”

“Web 2.0 is a formula to kill the middle class and undo centuries of social progress”

(Lanier in Anon, 2010)

Editorial Review - A Q&A with Author Jaron Lanier. (2010, January 1). Retrieved April 13, 2015, from <http://www.amazon.com/You-Are-Not-Gadget-Manifesto/dp/0307389979>

Human Expression is a Peasant Activity

“On another level, the Internet has become anti-intellectual because Web 2.0 collectivism has killed the individual voice”

“It is increasingly disheartening to write about any topic in depth these days, because people will only read what the first link from a search engine directs them to, and that will typically be the collective expression of the Wikipedia”

“Or, if the issue is contentious, people will congregate into partisan online bubbles in which their views are reinforced” (also a link to the concept of Sockpuppets here guys)

“I don’t think a collective voice can be effective for many topics, such as history - and neither can a partisan mob”

(Lanier in Anon, 2010)

Editorial Review - A Q&A with Author Jaron Lanier. (2010, January 1). Retrieved April 13, 2015, from <http://www.amazon.com/You-Are-Not-Gadget-Manifesto/dp/0307389979>

Department of Tourism, Hotel and Sport Management - Jason Harding (PHD)

Human Expression is a Peasant Activity

“Collectives have a power to distort history in a way that damages minority viewpoints and calcifies the art of interpretation”

“Only the quirkiness of considered individual expression can cut through the nonsense of mob-- and that is the reason intellectual activity is important.”

“On another level, when someone does try to be expressive in a collective, Web 2.0 context, she must prioritize standing out from the crowd”

“To do anything else is to be invisible” (epic link to Godin here guys) Therefore, people become artificially caustic, flattering, or otherwise manipulative

(Lanier in Anon, 2010)

Editorial Review - A Q&A with Author Jaron Lanier. (2010, January 1). Retrieved April 13, 2015, from <http://www.amazon.com/You-Are-Not-Gadget-Manifesto/dp/0307389979>

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Human Expression is a Peasant Activity

Interviewer

“Why has the idea that ‘the content wants to be free’ (and the unrelenting embrace of the concept) been such a setback? What dangers do you see this leading to?”

Jaron Lanier

*“The original turn of phrase was ‘**Information wants to be free**’ And the problem with that is that it anthropomorphizes [personifies, humanizes] information”*

*“**Information doesn’t deserve to be free. It is an abstract tool; a useful fantasy, a nothing**”*

*“It is nonexistent until and unless a person experiences it in a useful way. **What we have done in the last decade is give information more rights than are given to people**”*

(Lanier in Anon, 2010)

Editorial Review - A Q&A with Author Jaron Lanier. (2010, January 1). Retrieved April 13, 2015, from <http://www.amazon.com/You-Are-Not-Gadget-Manifesto/dp/0307389979>

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Human Expression is a Peasant Activity

Jaron Lanier

“If you express yourself on the internet, what you say will be copied, mashed up, anonymized, analyzed, and turned into bricks in someone else’s fortress (Epic link to Tyler Brule there guys)

“This is exactly the wrong set of values”

(Lanier in Anon, 2010)

Editorial Review - A Q&A with Author Jaron Lanier. (2010, January 1). Retrieved April 13, 2015, from <http://www.amazon.com/You-Are-Not-Gadget-Manifesto/dp/0307389979>

6

**Just Go Back For
A Second**

Just Go Back For A Second

*“We have a **moral obligation to invent technology** so that every person on the globe has the potential to realize their true difference (Kelly, 2005)*

Source: Kelly, K. (2005). How Technology Evolves. Paper presented at TED, San Francisco, California.

7

Intelligence Amplification

Intelligence Amplification

Intelligence amplification (IA), also referred to as '*cognitive augmentation*' and '*machine augmented intelligence*', refers to the **effective use of information technology in augmenting human intelligence**. The idea was first proposed in the 1950s and 1960s by cybernetics and early computer pioneers.

IA is sometimes contrasted with AI (Artificial Intelligence), that is, the project of building a human-like intelligence in the form of an autonomous technological system such as a computer or robot.

AI has encountered many fundamental obstacles, practical as well as theoretical, **which for IA seem moot, as it needs technology merely as an extra support for an autonomous intelligence that has already proven to function**.

Moreover, IA has a long history of success, since all forms of information technology, from the abacus to writing to the Internet, have been **developed basically to extend the information processing capabilities of the human mind**

Source: Wikipedia Rules.

Intelligence Amplification - Ashby

William Ross Ashby: *Intelligence Amplification*

Problem solving is largely, perhaps entirely, a matter of appropriate selection.

Take, for instance, any popular book of problems and puzzles. **Almost every one can be reduced to the form: out of a certain set, indicate one element. ...**

It is, in fact, difficult to think of a problem, either playful or serious, that does not ultimately require an appropriate selection as necessary and sufficient for its solution.

It is also clear that many of the tests used for measuring 'intelligence' are scored essentially according to the candidate's power of appropriate selection.

Thus it is not impossible that what is commonly referred to as '*intellectual power*' may be equivalent to '*power of appropriate selection*'.

Source: Wikipedia Rules.

[Ashby, W.R., *An Introduction to Cybernetics*](#), Chapman and Hall, London, UK, 1956. Reprinted, Methuen and Company, London, UK, 1964.

Intelligence Amplification - Ashby

If a talking Black Box were to show high power of appropriate selection in such matters — so that, when given difficult problems it persistently gave correct answers — **we could hardly deny that it was showing the 'behavioral' equivalent of 'high intelligence'.**

If this is so, and as we know that power of selection can be amplified, **it seems to follow that intellectual power, like physical power, can be amplified.**

... let no one say that it cannot be done, for the gene-patterns do it every time they form a brain that grows up to be something better than the gene-pattern could have specified in detail ...

What is new is that we can now do it synthetically, consciously, deliberately.

Source: *Wikipedia Rules*.

[Ashby, W.R., *An Introduction to Cybernetics*](#), Chapman and Hall, London, UK, 1956. Reprinted, Methuen and Company, London, UK, 1964.

Intelligence Amplification - Licklider

J. C. R. Licklider: *Man-Computer Symbiosis*

Man-Computer Symbiosis is a key speculative paper published in 1960 which envisions that mutually-interdependent, *'living together'*, tightly-coupled human brains and computing machines would prove to complement each other's strengths to a high degree:

Man-computer **symbiosis** is a subclass of man-machine systems. There are many man-machine systems. **At present, however, there are no man-computer symbioses** (*TED talk – Shyam Sankar - mentioned a few examples...*).

The hope is that, in not too many years, **human brains and computing machines will be coupled together very tightly**, and that the resulting partnership will think as no human brain has ever thought and process data in a way not approached by the information-handling machines we know today.

Source: Wikipedia Rules.

[Licklider, J.C.R.](#), "[Man-Computer Symbiosis](#)", *IRE Transactions on Human Factors in Electronics*, vol. HFE-1, 4-11, Mar 1960.

Intelligence Amplification - Engelbart

Douglas Engelbart: *Augmenting Human Intellect*

“Increasing the capability of a man to approach a complex problem situation, to gain comprehension to suit his particular needs, and to derive solutions to problems.”

“Increased capability in this respect is taken to mean a mixture of the following: more-rapid comprehension, better comprehension, the possibility of gaining a useful degree of comprehension in a situation that previously was too complex, speedier solutions, better solutions, and the possibility of finding solutions to problems that before seemed insolvable.”

“And by complex situations we include the professional problems of diplomats, executives, social scientists, life scientists, physical scientists, attorneys, designers--whether the problem situation exists for twenty minutes or twenty years.”

Douglas Engelbart

Source: *Wikipedia Rules*.

[Engelbart, D.C.](#), *Augmenting Human Intellect: A Conceptual Framework*, Summary Report AFOSR-3233, [Stanford Research Institute](#), Menlo Park, CA, October 1962.

Intelligence Amplification - Engelbart

“We do not speak of isolated clever tricks that help in particular situations. We refer to a way of life in an integrated domain where hunches, cut-and-try, intangibles, and the human feel for a situation usefully co-exist with powerful concepts, streamlined terminology and notation, sophisticated methods, and high-powered electronic aids.”

Douglas Engelbart

Source: *Wikipedia Rules*.

[Engelbart, D.C.](#), *Augmenting Human Intellect: A Conceptual Framework*, Summary Report AFOSR-3233, [Stanford Research Institute](#), Menlo Park, CA, October 1962.

8

Shyam Sankar

Shyam Sankar



‘The rise of human-computer cooperation’. Shyam Sankar. TEDGlobal 2012

“Brute computing force alone can’t solve the world’s problems. Data mining innovator Shyam Sankar explains why solving big problems (like catching terrorists or identifying huge hidden trends) is not a question of finding the right algorithm, but rather the right symbiotic relationship between computation and human creativity”

[Click Here To Watch](#)

Shyam Sankar

*“mutually-interdependent, living together, tightly-coupled human brains and computing machines would prove to **complement each other's strengths to a high degree**”*

J.C.R Licklider

*“We do not speak of isolated clever tricks that help in particular situations. **We refer to a way of life in an integrated domain** where hunches, cut-and-try, intangibles, and the **human feel for a situation usefully co-exist ...**”*

Douglas Engelbart

*“**Computers don't detect novel patterns and new behaviors, but humans do.** Humans using technology, testing hypotheses, searching for insight by asking machines to do things for them. **Osama Bin Laden was not caught by artificial intelligence. He was caught by dedicated, resourceful, brilliant people in partnerships with various technologies**”*

Shyam Sankar

9

The End of Everything

The End of Everything

“I’m wondering what happens to all this stuff when Google non longer exists” (Anonymous Librarian, *in Naughton, 2013*, questioning the Google Books Project)

Source: The end of everything. (2013). John Naughton. The Deal – The Australian Business Magazine. April 2013. p. 19.

10

The Noosphere

The Noosphere

A postulated sphere or **stage of evolutionary development dominated by consciousness, the mind, and interpersonal relationships.**

"creatures evolve: a new biosphere emerges, and with it a new noosphere"

The noosphere is **the sphere of human thought.**

The noosphere is the **sphere of thought encircling the earth that has emerged through evolution as a consequence of this growth in complexity / consciousness.** The noosphere is therefore as much part of nature as anything else (atmosphere, biosphere etc).

The "social phenomenon is the culmination of and not the attenuation of the biological phenomenon."

In this sense, the noosphere emerges through and is **constituted by the interaction of human minds.**

The Noosphere

*“The printing press gave us access to the written word. The internet enables each of us to be a producer. The printing press gave us access to recorded knowledge. **The internet gave us access not just to information and knowledge, but to the intelligence contained in the crania of other people on a global scale**”*

(Don Tapscott, 2012)

The Noosphere

“Some of the fantasy objects arising from cybernetic totalism (like the noosphere, which is a supposed global brain formed by the sum of all the human brains connected through the internet) motivate technological designs that are inappropriate to humanity”

“According to a new creed, we technologists are turning ourselves, the planet, our species, everything, into computer peripherals attached to the great computing clouds”

“This is no longer about us but about the big new computational object that is greater than us”

“There is more than one possible technological future”

If you were to debate against a concept like the noosphere you may receive a counter argument likening you to the *“shriveled medieval church officials who fought against poor Johannes Gutenberg’s printing press”*

“And accused of fearing change”

(Jaron Lanier, 2010)

The Noosphere

“Printing presses in themselves provide no guarantee of an enlightened outcome”

“People, not machines, made the Renaissance”

“The printing that takes place in North Korea today, for example, is nothing more than propaganda for a personality cult”

“What is important about printing presses is not the mechanism, but the authors”

“There is an impenetrable tone deafness rules Silicon Valley when it comes to the idea of authorship”

(Jaron Lanier, 2010)

The Noosphere

“Kevin Kelly has suggested it is not only a good thing, but a “moral imperative” that all the world’s books would soon become effectively “one book” once they were scanned, searchable, and re-mixable in the universal computational cloud”

“Web 2.0 enthusiasts view argument against this concept as just being sentimental about an ancient technology. Their approach to digital culture would indeed turn all the world’s books into one book”

“What happens next is what’s important. If the books in the cloud are accessed via user interfaces and encourage mashups of fragments that obscure the content and authorship of each fragment there will only be one book”

“The ethereal, digital replacement technology for the printing press has come of age in a time when an unfortunate ideology dominates technological culture”

“An ideology where authorship – the very idea of the individual point of view – is not a priority”

(Jaron Lanier, 2010)

The Noosphere

“The one collective book will absolutely not be the same thing as the library of books by individual authors it is bankrupting”

“Some believe it will be better. Some believe it will be disastrously worse”

“The Bible is a book ... but it is not the only book.

“Any singular, exclusive book, even the collective one accumulating in the cloud, will be a cruel book if it is the only one available”

(Jaron Lanier, 2010)

1 1

Technological Singularity I

Technological Singularity

The technological singularity is the hypothetical advent of artificial general intelligence (also known as '*Strong AI*').

Such a computer, computer network, or robot would theoretically be capable of recursive self-improvement (redesigning itself), or of designing and building computers or robots better than itself. Repetitions of this cycle would likely result in a runaway effect — an intelligence explosion — where smart machines design successive generations of increasingly powerful machines, creating intelligence far exceeding human intellectual capacity and control.

Because the capabilities of such a superintelligence may be impossible for a human to comprehend, the technological singularity is an occurrence beyond which events may become unpredictable, unfavorable, or even unfathomable.

Source: Wikipedia Rules

Technological Singularity

*“ ... the ever accelerating progress of technology and changes in the mode of human life, which gives the appearance of approaching some essential singularity in the history of the race **beyond which human affairs, as we know them, could not continue**”*

Ulam Stanislaw

Ulam, Stanislaw (May 1958). "Tribute to John von Neumann". 64, #3, part 2. Bulletin of the American Mathematical Society. p. 5

Technological Singularity

Jaron Lanier explaining the idea ...

“One day soon computers and robots will be able to construct copies of themselves, and these copies will be a little better than the originals because of intelligent software. The second generation of robots will then make a third, but it will take less time, because of the improvements over the first generation ...

...The process will repeat. Successive generations will be ever smarter and will appear even faster. People might think they are in control, until one fine day the rate of robot improvement ramps up so quickly that super intelligent robots will suddenly rule the earth”

Jaron Lanier

Lanier, Jaron (2010). 'You are not a gadget'. Penguin Books. p. 24

Technological Singularity

The term (technological singularity) was popularized by mathematician, computer scientist and science fiction author Vernor Vinge, who argues **that artificial intelligence, human biological enhancement, or brain–computer interfaces could be possible causes of the singularity.**

Ray Kurzweil predicts the singularity to occur **around 2045** whereas **Vinge** predicts some time **before 2030.**

At the 2012 Singularity Summit, Stuart Armstrong did a study of artificial general intelligence (AGI) predictions by experts and found a wide range of predicted dates, **with a median value of 2040.**

Discussing the level of uncertainty in AGI estimates, **Armstrong** said in 2012, *"It's not fully formalized, but my current 80% estimate is something like five to 100 years."*

Armstrong, Stuart. "How We're Predicting AI", from the 2012 Singularity Conference

Kurzweil, Ray. *The Singularity is Near*, pp. 135–136. Penguin Group, 2005.

Vinge, Vernor. "The Coming Technological Singularity: How to Survive in the Post-Human Era", originally in *Vision-21: Interdisciplinary Science and Engineering in the Era of Cyberspace*, G. A. Landis, ed., NASA Publication CP-10129, pp. 11–22, 1993

Vinge, Vernor. "Vernor Vinge on the Singularity". San Diego State University.

Technological Singularity

Strong artificial intelligence just might bring about an '*intelligence explosion*' (Good, 1965).

Although technological progress has been accelerating, it has been limited by the basic intelligence of the human brain, which has not (according to Paul R. Ehrlich), changed significantly for millennia.

However, with the increasing power of computers and other technologies, it might eventually be possible to build a machine that is more intelligent than humanity.

If a superhuman intelligence were to be invented, however, either through the amplification of human intelligence or through artificial intelligence, it might be able to bring to bear greater problem-solving and inventive skills than current humans are capable of.

Ehrlich, Paul. [The Dominant Animal: Human Evolution and the Environment](#)

Good, I. J., "[Speculations Concerning the First Ultraintelligent Machine](#)", Franz L. Alt and Morris Rubinoﬀ, ed., *Advances in Computers* (Academic Press) 6: 31–88, 1965.

Ray Kurzweil, *The Singularity is Near*, p. 9. Penguin Group, 2005

Technological Singularity

It might then design an even more capable machine, **or re-write its own software to become even more intelligent.**

These iterations of recursive self-improvement could accelerate, potentially allowing enormous qualitative change before any upper limits imposed by the laws of physics or theoretical computation set in.

It is, however, very difficult or impossible for present-day humans to predict what human beings' lives will be like in a post-singularity world.

Ehrlich, Paul. [The Dominant Animal: Human Evolution and the Environment](#)

Good, I. J., ["Speculations Concerning the First Ultraintelligent Machine"](#), Franz L. Alt and Morris Rubinoff, ed., Advances in Computers (Academic Press) 6: 31–88, 1965.

Ray Kurzweil, The Singularity is Near, p. 9. Penguin Group, 2005

Technological Singularity

Kurzweil's analysis of history concludes that technological progress follows a pattern of exponential growth, following what he calls the '*Law of Accelerating Returns*'.

"Whenever technology approaches a barrier, new technologies will surmount it."

Ray Kurzweil

Paradigm shifts will therefore become increasingly common, leading to ...

"... technological change so rapid and profound it represents a rupture in the fabric of human history."

Ray Kurzweil

Ray Kurzweil, *The Singularity is Near*, p. 9. Penguin Group, 2005

12

Inventing Our Own Demise

Inventing Our Own Demise

If the advent of nuclear weapons taught us anything, **it is that the tide of new technology is almost impossible for us to resist**

If it can be imagined, then we are to pursue it, no matter the risks to ourselves or to others – if only to ensure that some rival doesn't get there first

Artificial intelligence (AI) appears to be one such inevitability.

And while the gold standard for AI pioneers has long been the invention of a machine capable of mimicking human intelligence, **a far more powerful – and potentially dangerous – concept is already being predicted: superintelligence.**

Boag, Z. (February-April 2016). Inventing Our Own Demise. *New Philosopher*, Issue 11, 15.

Inventing Our Own Demise

A superintelligence is any intellect – whether that be a digital computer, a network of computers, or something else entirely – that vastly outperforms the best human brains in practically every field.

In that sense, it would be more than a mere tool – it would be an autonomous agent, capable of creativity and research.

Indeed, it may be humanity's last invention.

As a superintelligence would be able to invent its own, new technologies far superior to our own capacity for invention.

Boag, Z. (February-April 2016). Inventing Our Own Demise. *New Philosopher*, Issue 11, 15.

Inventing Our Own Demise

Swedish thinker Nick Bostrom says the potential benefits of a superintelligence are immense, going so far as to say that, *“it’s hard to think of any problem that a superintelligence could not either solve or at least help us solve”*.

A superintelligence, he says, would be capable of eliminating disease, poverty, environmental destruction, and unnecessary suffering of all kinds.

For Bostrom, a superintelligence would be better at moral decision making. *“To the extent that ethics is a cognitive pursuit”*, writes Bostrom, *“a superintelligence could also easily surpass humans in the quality of its moral thinking”*.

In other words, *where ethical questions have correct answers arrived at by reasoning and the weighing of evidence, then a superintelligence would perform the task better than humans.*

Boag, Z. (February-April 2016). Inventing Our Own Demise. *New Philosopher*, Issue 11, 15.

Inventing Our Own Demise

In that respect we would be able to delegate political decisions to a superintelligence, which would be able to devote unprecedented intellectual resources towards weighing up the consequences of different options.

But it is precisely this extraordinary adaptability that makes a superintelligence so dangerous.

Even Bostrom – despite all his optimism about its potential benefits – considers the dangers great enough to view the advent of a superintelligence as an ‘*existential risk*’, that is ...

... a risk to our continued existence as a species ...

The reason for that is actually quite simple: more than any other human invention, a superintelligence would resist any and all human efforts to control it.

In this scenario its initial motivations would be crucial.

Boag, Z. (February-April 2016). Inventing Our Own Demise. *New Philosopher*, Issue 11, 15.

Inventing Our Own Demise

By definition, a superintelligence would be able to outmanoeuvre the brightest human minds and thwart any attempt to prevent it from implementing its ultimate goal – whether that goal be increased human happiness or the enrichment of the superintelligence’s inventor.

In that context, Bostrom suggest that the top goal of a superintelligence should be ‘friendliness’.

However, even then, the way we define friendliness for a superintelligence would be crucial.

Wrongly calibrated, a friendly superintelligence might decide to protect us from any and all harm ...

... including the harm that might come from our free and informed choices ...

Boag, Z. (February-April 2016). Inventing Our Own Demise. *New Philosopher*, Issue 11, 15.

Inventing Our Own Demise

There is an important point to this ...

If, as Bostrom and other philosophers believe, the invention of a superintelligence is only a matter of time, then it will be more important than ever for us to understand, agree upon and define ...

... what we mean by concepts such as 'human happiness'.

Boag, Z. (February-April 2016). Inventing Our Own Demise. *New Philosopher*, Issue 11, 15.

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Technological Singularity II

Technological Singularity II

“The technium wants. The technium is whispering to itself”

Kevin Kelly

Technological Singularity II

“Singularity books are as common in a computer science department as Rapture images are in an evangelical bookstore”

“To embrace the idea of the Singularity would be a celebration of bad taste and bad politics.”

Jaron Lanier

15

The Illusion

The Illusion

In an era where routine interaction with and existence within technological converged environments, we essentially “... believe technology is king. We’re led to believe it can fix everything” (Fowler, in Evans, 2013, p. 101)

“But the reality is that’s not always true, particularly for systems that we do not understand” (Fowler, in Evans, 2013, p. 101)

Evans, L. (2013). Alys Fowler is a Punk Rock Gardener. *Dumbo Feather*, 37, 94-111.

The Illusion

Relentless technological progression and our ubiquitous acceptance of and subscription to it has led us to wholeheartedly believe that technology puts us, “... *in touch with a greater amount of people*” (Anais Lin, in Popova, p.28) and that this is the way forward for business. However, this is quite possibly ...

“... *the illusion which might cheat us of being in touch deeply with the ones breathing right next to us* (Anais Lin, in Popova, p.28)

Human relationships are crucial. We therefore need to decide whether the greater reach and presence afforded by *technology is more important than deep, meaningful, and close range human interaction.*



Popova, M. (2013). The meaning of life and the dangers of the Internet. Dumbo Feather, 36, 28.

16

On Personhood

On Personhood

“Being a person is not a pat formula. It is a quest, a mystery, a leap of faith”

“Technologists and computer scientists make up extensions to your being, like remote eyes and ears (web cams and mobile phones) and expanded memory (the world of details you can search for online)”

“These become the structures by which you connect to the world and other people. These structures in turn can also change how you conceive of yourself and the world”

“We tinker with your philosophy by direct manipulation of your cognitive experience, not indirectly through argument”

“It only takes a tiny group of engineers to create technology that can shape the entire future of human experience with incredible speed”

“The deep meaning of personhood is being reduced by illusions of bits. Since people will be inevitably connecting to one another through computers from here on out, we must find an alternative ...”

(Jaron Lanier, 2010)

On Personhood

“Here are some things you can do to be a person instead of a source of fragments to be exploited by others ...”

- *Don't post anonymously unless you really might be in danger*
- *Create a website that expresses something about who you are that won't fit into the template available to you on a social media networking site*
- *Post a video once in a while that took you one hundred times more time to create than it takes to view*
- *Write a blog post that took weeks of reflection before you heard the inner voice that it needed to come out*
- *If you are twittering, innovate in order to find a way to describe your internal state instead of trivial external events*

(Jaron Lanier, 2010)

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A Short Story

A Short Story

On Frictionless Project **Jason Harding**



18

One Final Note

One Final Note

“I think people should challenge the world they’ve inherited, and push against it. To believe that things could be better is to seek to make them so. To me, this is optimism (Lanier, in Schwartz, 2013, p. 85)

Note: Lanier responding to being called out as pessimistic here

My job here was always just to make you think guys

Who are you and where do you stand – where does the truth lie for you?

The question hasn’t changed since the start of the semester.

Scwartz, O. (2013). Jaron Lanier is a humanist. Dumbo Feather, 37, 80-92.