Slides from class discussion:
English 146MR (Fall 2016)

Format of research report

1. 200-word summary
2. Objective description
3. Sketch of research context
4. Technical analysis
5. Evaluation of research opportunities
6. Resources for further study

Where to find?

- Keyword search

- Check tags on museum, university, or research center websites [e.g. drone art]

- Or start from names on syllabus and work from there

Representative artifacts

- Zach Blas, Facial Weaponization Suite (2012) [on biometric facial recognition]
- Ghost Writer: algorithmic autobiography [data collection & aggregation]

GhostWriter embodies this new type of author, who observes the digital traces we leave behind us, interprets them using the Self Memory System model to collect them and extract the patterns of a story, and finally hands them back to us in a hierarchic structure and in the form of proper publications.

Kenneth Goldsmith

"we *parse* text—a binary process of sorting language—more than we *read* it to comprehend all the information passing before our eyes" (158)

Uncreative Writing: Managing Language in the Digital Age (Columbia UP 2011)

Reading vs. parsing

"a new model of reading will have to be explored, one that is not hermeneutic in nature but instead based on cybernetic parsing, scanning, rearranging, filtering, and interpolating. This new model of reading will need to be based on an immanent or machinic notion of software. The question now is not simply *logos* (discourse) but *ergon* (work)." (Alex Galloway, in *Critical Terms for Media Studies*)

New textual scholarship

- Today: Geoff Rockwell, Stephen Ramsay, Jerome McGann and Lisa Samuels

- Histories of the book (Adrian Johns, Elizabeth Einstein, Roger Chartier)

- D.F. McKenzie on sociological bibliography

- Text as information: data encoding, data mining

of cognitive assemblages that include technical actors. Drone pilots cannot be considered simply as evil for killing other humans; even less so can the drone itself. Rather, they act within structured situations that include tactical commanders, lawyers, and presidential staff, forming assemblages in which technological actors perform constitutive and transformative roles along with humans. The results should therefore be evaluated *systemically* in ways that recognize not all of the important actors are human, an argument developed further in part 2. Moreover, drone assemblages are part of larger conflicts that includes suicide bombers, IEDs, military incursions, insurgent resistance, and other factors. The cognitive assemblages in such conflicts are differentially empowered by the kinds of technologies they employ as well as by how the humans enmeshed within them act. The consequences of the assemblages further interact with ex-

Katherine Hayles, *Unthought: The Power of the Cognitive Nonconscious* (U Chicago 2017), 37.

Andy Clark

Continuous reciprocal causation: feedback, dynamic interplay between tools and human cognition

Supersizing the Mind: Embodiment, Action, and Cognitive Extension (2008)

Andy Clark, 2

Extended vs. Brainbound cognition

Example: writing something down as integral part of thinking

Extended vs. Embedded cognition

Cognitive system as a whole vs. system with human cognition at the center

Ben Russell, "Headmap Manifesto" (1999)

- location-aware, networked mobile devices make possible invisible notes attached to spaces, places, people and things

- real space can be marked and demarcated invisibly

- What was once the sole preserve of builders, architects and engineers falls into the hands of everyone: the ability to shape and organize the real world and the real space

Acousmatic, a word of Greek origin discovered by Jerome Peignot and theorized by Pierre Schaeffer, describes "sounds one hears without seeing their originating cause."[5] Radio, phonograph, and telephone, all which transmit sounds without showing their emitter, are acousmatic media by definition. The term *acousmatic music* has also been coined; composer Francis Bayle, for example, uses

Michel Chion, *Audio-vision: Sound on Screen*, p. 71

Without the image, the sound of numerous great films of the past is meaningless. In particular, the magical voices that fascinated us would atrophy or become prosaic. The voices of Norman's mother in *Psycho*, Dr. Mabuse in *The Testament of Dr. Mabuse,* or Marguerite Duras in *L'Homme Atlantique* would no longer be extraordinary if they ceased to interact with a screen where they encountered the void of their presence.

Overall, the comparison is extremely lopsided in favor of computers, for, as we just noted, computers carry out flawless reasoning and calculation way beyond human reach, handle unimaginably larger amounts of information than people can handle, do not forget things over short or long time scales, do not distort what they memorize, and carry out their processing at speeds incomparably greater than that of the human mind. In terms of rationality, size, reliability, and speed, the machines we have designed and built beat us hands down. If we then add to the human side of the ledger our easily distractable attention, the fatigue that often seriously interferes with our capacities, and the imprecision of our sensory organs, we are left straggling in the dust. If one were to draw up a table of numerical specifications, as is standardly done in comparing one computer with another, *Homo sapiens sapiens* would wind up in the recycling bin.

Given all this, how can we explain the fact that, in terms of serious thought, machines lag woefully behind us? Why is machine translation so often inept and awkward? Why are robots so primitive? Why is computer vision restricted to the simplest kinds of tasks? Why is it that today's search engines can instantly search billions of Web sites for passages containing the phrase "in good faith", yet are incapable of spotting Web sites in which the *idea* of good faith (as opposed to the string of alphanumeric characters) is the central theme?

Readers will of course have anticipated the answer — namely, that our advantage is intimately linked to categorization through analogy, a mental mechanism that lies at the very center of human thought but at the furthest fringes of most attempts to realize artificial cognition. It is only thanks to this mental mechanism that human thoughts, despite their slowness and vagueness, are generally reliable, relevant, and insight-giving, whereas computer "thoughts" (if the word even applies at all) are extremely fragile, brittle, and limited, despite their enormous rapidity and precision.

Douglas Hofstadter and Emmanuel Sander, *Surfaces and Essences: Analogy as the Fuel and Fire of Thinking* (2012)
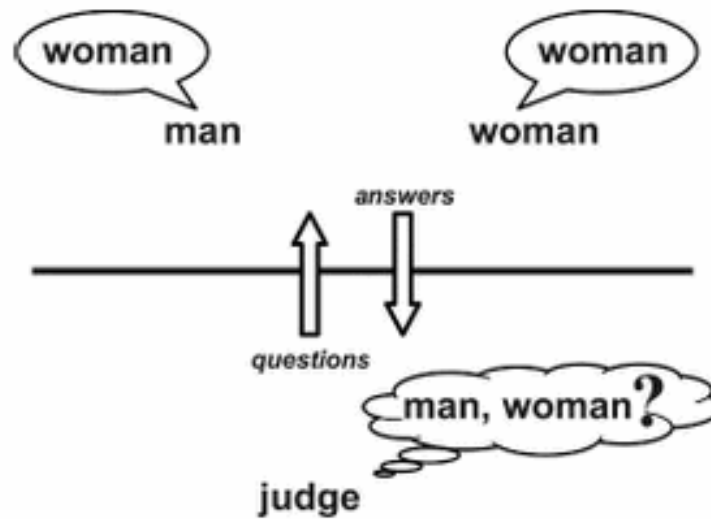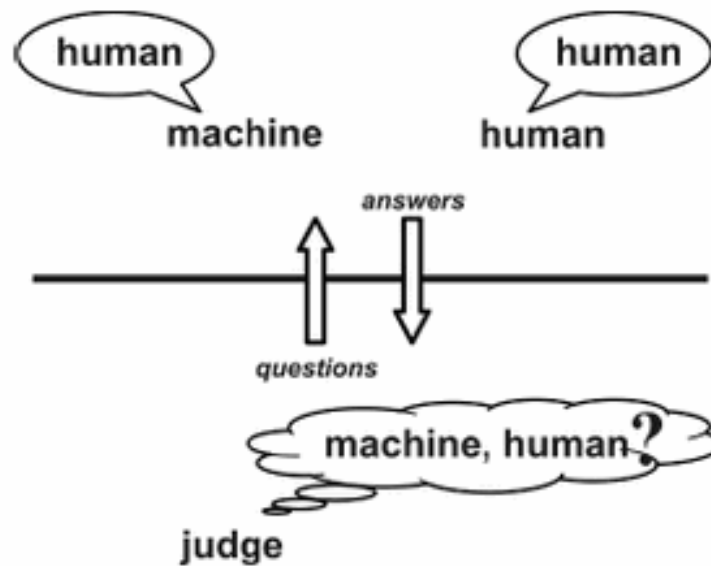
Fig. 1 The Imitation Game[43]

Fig. 2 The Classic Turing Test[43]

Techniques/technologies of the self

"an entire activity of speaking and writing in which the work of oneself on oneself and communication with others were linked together" (Michel Foucault, *Care of the Self*, 51)

Friedrich A. Kittler

Discourse Networks
1800 / 1900

TRANSLATED BY MICHAEL METTEER, WITH CHRIS CULLENS

FOREWORD BY DAVID E. WELLBERY

PRIMA FABBRICA ITALIANA
MACCHINE PER SCRIVERE
ING. C. OLIVETTI E C° IVREA

Proletarianization

- stripping away of knowledge from work
- de-skilling of labor

This proletariat is being objectively reinforced by the virtual elimination of the peasantry and by the increasing degree to which the "service" sectors and intellectual professions are being subjected to factory-like working conditions.

Guy Debord, *Society of the Spectacle*, trans. Ken Knabb (thesis 114)

Shortly after the start of his campaign during the 2012 Mexican presidential election, then-candidate Enrique Peña Nieto (EPN) rose to Twitter dominance almost overnight. To some savvy Internet sleuths, this seemed a bit suspicious. Sure enough, people quickly discovered the presence of a large army of Twitter accounts dedicated to producing a continuous stream of praise for EPN. These accounts came to be known as the first Peñabots. Since then, the term Peñabot has evolved to have a variety of meanings. They are either automated software that requires no human intervention, low-wage workers paid by the government to operate multiple social media accounts (think Chinese 50 Cent Party), or even genuine supporters who are criticized for their mindless support of Peña Nieto (think Limbots or Obamabots). These first two applications of the term "bot" present a lot of ethical questions over the use of bots by the government.

https://points.datasociety.net/rise-of-the-pe%C3%B1abots-d35f9fe12d67#

Tietou Gaming Workshop
August 2005, Shanghai, China

https://www.youtube.com/watch?v=ho5Yxe6UVv4

The 239-page paperback can be purchased for only $14.40, which is the low, low price of only one cent per minute.

My novel *World Clock,* generated by 165 lines of Python code that I wrote in a few hours on November 27, 2013, is now available in print.

> *World Clock* tells of 1440 incidents that take place around the world at each minute of a day. The novel was inspired by Stanislaw Lem's "One Human Minute" and Harry Mathews's "The Chronogram for 1998." It celebrates the industrial concept of time and certain types of vigorous banality which are shared by all people throughout the world.

The code has been online, along with a PDF of the book's text, since late November. The Python program that generated this novel is available under a free software license. Anyone may make whatever use of it; generate your own novel with the unchanged code, if you like, or modify it to produce something different, for instance.

WORLD
CLOCK

NICK MONTFORT
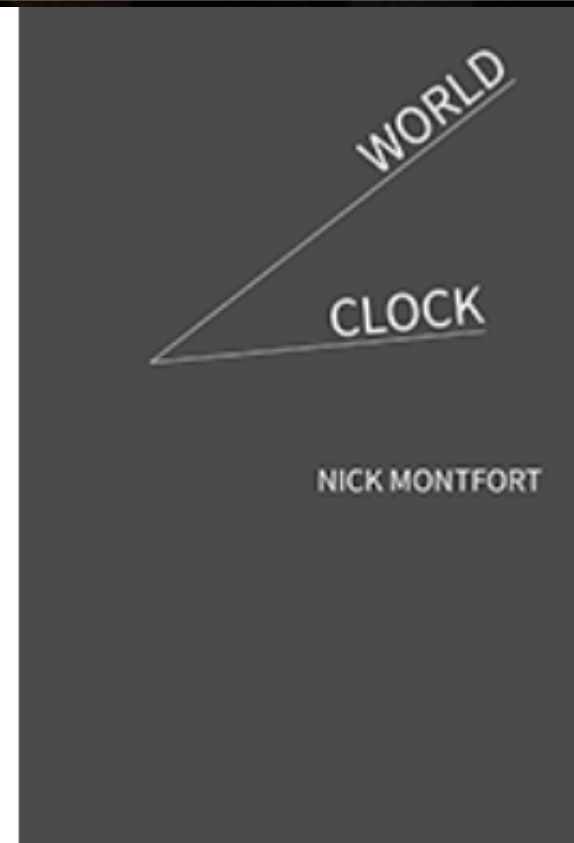
Phil Parker is unlike any writer you've ever met – or read for that matter. That's because he doesn't write most of his books. Instead, the trained economist uses sophisticated algorithms that can pen a whole book from start to finish in as little as a few minutes. The secret is sophisticated programming mimicking the thought process behind formulaic writing. It can take years to create these programs, but once completed, new books can be churned out in minutes.

This method has led to Parker's company – ICON Group International Inc – auto-writing more than a million titles, mostly nonfiction books on very specific subjects. But there's poetry, too – see an example at right. (Parker says most poetry is governed by strict formulas.) He claims he's basically applying 19th Century Taylorism to the publishing industry, emulating the famous auto manufacturer's process.

Bank of America is introducing the tool as the industry presses to keep up with rapidly changing ways customers use mobile phones.

Industry executives, including Bank of America Chief Executive Brian Moynihan, have also said they are looking to new technology to reduce costs and cut the time branch employees spend on routine transactions and questions.

WHAT'S AN

1. SIGN UP AND BUILD YOUR BOYFRIEND.

We designed the service with you in mind and built in some of the most requested features, including: text messaging, personalized notes, and photos. Our introductory package is $24.99 per month and includes 200 messages as well as 1 personalized note. We also offer a plan for only $14.99 monthly which includes 100 messages. Pricing outside the United States and Canada may be different.

BOYFRIEND WITHOUT THE BAGGAGE.

WORK!

BUILD HIM TO YOUR SPECIFICATIONS. YOU CHOOSE HIS AGE, PHOTO, AND PERSONALITY.

https://invisibleboyfriend.com
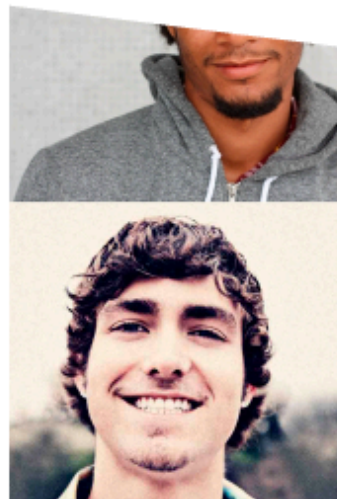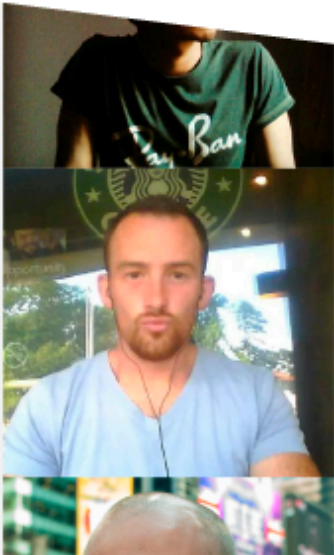
There are poignant moments, she says, when her heart aches for someone who is obviously lonely. Invisible Boyfriend users have talked to her about the death of a child or a parent. "I really hope they have someone in their real life to talk to, too," she said. One user in Florida had just broken up with his girlfriend and was depressed. He offered up his e-mail address and begged to continue the conversation off-platform.

"I didn't e-mail him," she said. "You can't break character."

When Invisible Boyfriend first came out, the founders were reluctant to let reporters talk to the crowdsourced workers, said Harper. "It was all veiled and hush hush. They didn't want us talking about it at first because it would ruin the mystery," she said. "But everyone knows they're talking to a real person. They should know they're talking to a real person."

http://fusion.net/story/111041/crowdsourcing-and-privacy/

Zeynep Tufekci @zeynep 28m

Watching a "six degrees of separation"—finding path from image to image using machine learning—presentation at... twitter.com/i/web/status/7...

Zeynep Tufekci @zeynep 27m

This one is deep learning algos finding "horses" among a gabazillion images. #googleartslab pic.twitter.com/370MVCLVoB

Zeynep Tufekci @zeynep 24m

These capabilities of machine pattern recognition—a form of sense-making—are going to have such huge impact. The development is so so fast.
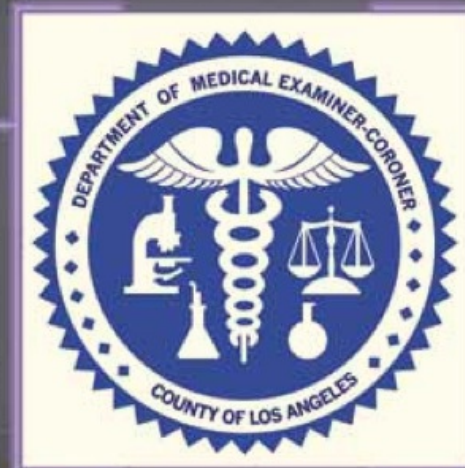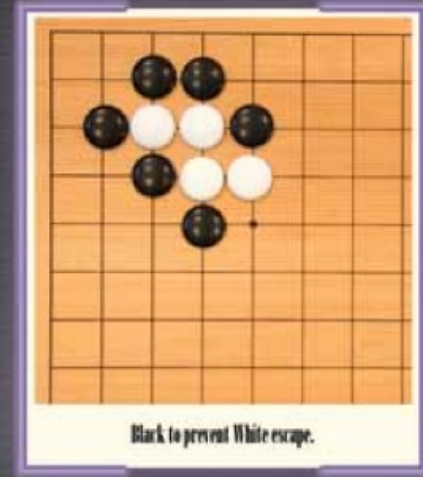
Zeynep Tufekci ✔
@zeynep

Machine learning is entering its own Moore's law phase. Software is exponentially building on software. Acceleration is so apparent.

11/3/16, 7:48

# Mark Z. Danielewski, *The Familiar* (2015 -)

Arthur Samuel

- Late 1940s at U Illinois: works on checkers playing program to beat world champion
- 1949 at IBM: works on first stored program computer (the 701)
- Finishes checkers program on the 701
- First self-learning program; early demo of AI

Gnoetry

Gnoetry is an on-going experiment in human/computer collaborative poetry composition.
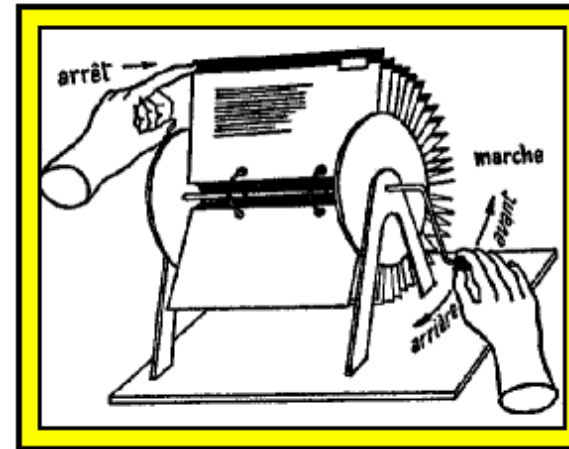
Gnoetry synthesizes language randomly based on its analysis of existing texts. Any machine-readable text or texts, in any language, can serve as the basis of the Gnoetic process. Gnoetry generates sentences that mimic the local statistical properties of the source texts. This language is filtered subject to additional constraints (syllable counts, rhyming, etc.) to produce a poem.

For our early work with Gnoetry, we have used classic out-of-copyright texts like Joseph Conrad's *Heart of Darkness* and Veblen's *Theory of the Leisure Class* (obtained from the wonderful Project Gutenberg), as well as other sources such as rap lyrics, the complete lyrics of Bob Dylan and Reuters newswire stories.

A key aspect of the Gnoetry software is the ability of a human operator to intervene in the language generation cycle, helping to "guide" the artistic process and to produce a result that is a true collaboration of equals.

This gnoetic experiment, performed with Gnoetry 0.1, used the statistical properties of James Joyce's *Dubliners* and H. G. Wells' *The Island of Doctor Moreau* to create 32 blank verse, 16-line quatrains. The texts were chosen for the attention they both pay to the idea of metamorphosis, the former addressing social transformations, the latter more anti-social transformations. Also, by limiting the language corpus to two texts, the ability to create an almost narratival continuity was facilitated, allowing a flow to exist between each individual gnoem. The number "32" was chosen for its mathematical and genetic significances, being 2^5 and half the total number of codons in a strand of DNA.

Then followed Mr. Cunningham behind
it to another licking kiss and it
corrugated like a smoking gash
observing me into the reeds, alarmed.

Montgomery gave the pupils concert rooms.
And partly for a moment, Mr. M'coy,
the wounded creature by a bullet, eh?
You never gave the pupils concert rooms.

. We designate by this term all forms of memory, "exact" forms of recording—for example, orthographical—from those of phonological and linear writing, through photography and phonography, to that of computer processing.

orthothetic writing, when it records, *sets down exactly.* Only an orthothetic reification of any uncovering makes possible at one and the same time an understanding of the truth in terms of a being "present-at-hand" or "sub-sistent" and as exactitude (*orthotēs*):

Bernard Stiegler, *Technics and Time*, p. 257

- Eric Schmidt (2007): "What happens when we have 100 languages in simultaneous translation?"

- White House policy paper on "grand challenges" of the 21C (2009): "automatic, highly accurate and real-time translation between the major languages of the world"

How Google Translate squeezes deep learning onto a phone

Wednesday, July 29, 2015

Posted by Otavio Good, Software Engineer, Google Translate

Today we announced that the Google Translate app now does real-time visual translation of 20 more languages. So the next time you're in Prague and can't read a menu, we've got your back. But how are we able to recognize these new languages?

Mörk → Dark

(022) WHEN HE MAKES FOUR PROUD FIRE-BOXS, HE IS PROUD OF FOUR FIRE-BOXS AND SMALL.

Quand il (m) fait quatre fiers foyers, il (m) est fier de quatre foyers et Small.

(023) WHEN HE KEEPS FOUR BELLS AND THE SAND-DOMES UNDER STEAM, FOUR TRAINS AND FOUR SHINY AND BIG WHISTLES, ENGINEER SMALL HAS A POLISHED TRAIN AND BIG WHEELS IN HIS FOUR HEA-TED DRIVING WHEELS.

Quand il (m) garde quatre cloches et les sablières sous la vapeur, quatre trains et quatre luisants et gros sifflets, le mécanicien Small a un train poli et de grosses roues dans ses (m) quatres roues motrices chauf-fées.
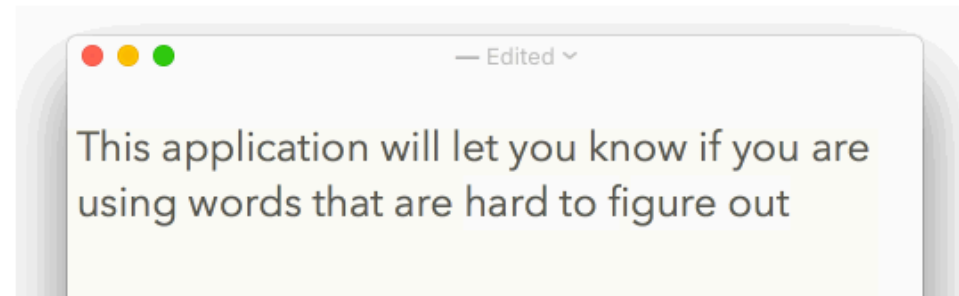
(024) A FIRE-BOX IS PROUD OF SMALL.

Un foyer est fier de Small.

(025) STEAM IS HEATED.

La vapeur est chauffée.

What's this?

A text editor that only allows the 1,000 most common words in English

I just got Randall Munroe's new book Thing Explainer. Only using the top 1,000 words makes the text really easy to read. I thought I would make it easy for people to write like this, so I made this application. It's cool to be clear.

— Edited ⌄

This application will let you know if you are using words that are hard to figure out

viooly

Check your text so what you're accomplishing in global development doesn't get lost in translation.

My Documents   About Viooly   The Challenges   The Solutions   Support

What you write...   I Have a Dream   Create New Document

What they see...   Save   Save As   Print

still languished in the corners of American society and finds himself an exile in his own land. And so we've come here today to dramatize a shameful condition.

In a sense we've come to our nation's capital to cash a check. When the architects of our republic wrote the magnificent words of the Constitution and the Declaration of Independence, they were signing a promissory note to which every American was to fall heir. This note was a promise that all men, yes, black men as well as white men, would be guaranteed the "unalienable Rights" of "Life, Liberty and the pursuit of Happiness." It is obvious today that America has defaulted on this promissory note, insofar as her citizens of color are concerned. Instead of honoring this sacred obligation, America has given the Negro people a bad check, a check which has come back marked "insufficient funds."

But we refuse to believe that the bank of justice is bankrupt. We refuse to believe that there are insufficient funds in the great vaults of opportunity of this nation. And so, we've come to cash this check, a check that will give us upon demand the riches of freedom and the security of justice.

We have also come to this hallowed spot to remind America of the fierce urgency of Now. This is no time to engage in the luxury of cooling off or to take the tranquilizing

Readability +

▸ ● **Reading Ease**

▾ ● **Sentence Length**

8.9

+0.0 *from original*

< 20 (52)
20 - 30 (23)
30 + (13)

How was this score generated?
Decreasing the number of words in a sentence generally increases ease of understanding.

Things to consider:
Minimize using sentences that are more than 30 words in length.

▸ ● **Word Complexity**

Warmth +

▸ ● **Verb Tense**
▸ ● **Concreteness**
▸ ● **Number Use**
▸ ● **Words That Work**

Power +

Norbert Wiener

It is possible to make two kinds of machines (I shall not go into the details): the machine whose taping is determined once and for all, and the machine whose taping is continually being modified by experience. The second machine can, in some sense, learn.

Men, Machines, and the World About

Chatterbot/Conversational Character

A chatterbot is a computer program designed to simulate a conversation with one or more human users, usually in text. Chatterbots sometimes seem to offer intelligent responses by matching keywords in input, using statistical methods, or building models of conversation topic and emotional state. Early systems such as Eliza and Parry demonstrated that simple programs could be effective in many ways. Chatterbots may also be referred to as talk bots, chat bots, simply "bots," or chatterboxes.

Internet Map
city-to-city connections

ChrisHarrison.net
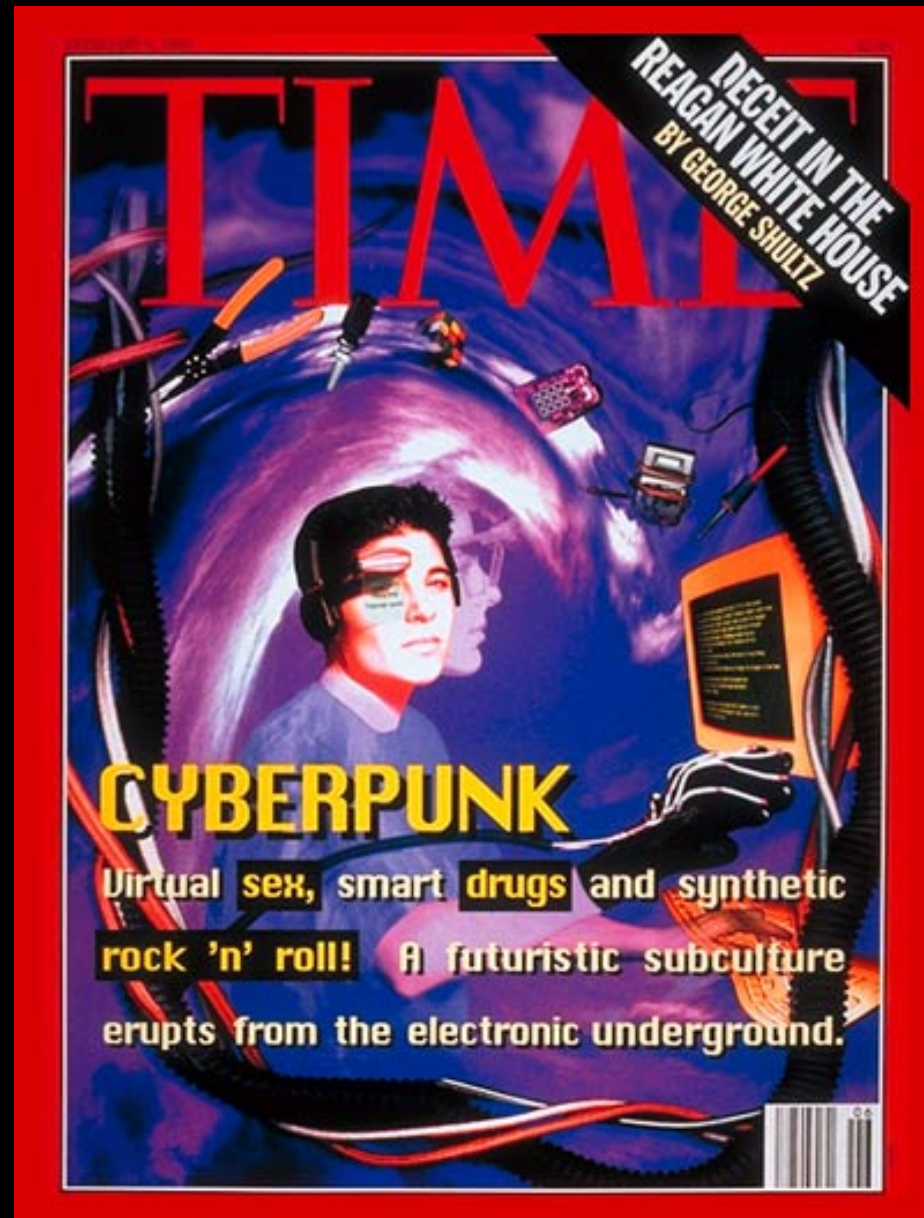
February 8, 1993

"Brain-in-a-vat"

- Separation of consciousness & body
- *The Matrix, Dollhouse, 13th Floor, eXistenZ, Avatar, Inception, Caprica, Dark City, Avalon, Ghost in the Shell*, .hack//SIGN…
- Sense/Net (the Dixie Flatline)

Paul Virilio, *Open Sky*

If last century's revolution in transportation saw the emergence and gradual popularization of the dynamic motor vehicle (train, motorbike, car, plane), the current revolution in transmission leads in turn to the innovation of the ultimate vehicle: the static audiovisual vehicle, marking the advent of a behavioural inertia in the sender/receiver that moves us along from the celebrated *retinal persistence* which permits the optical illusion of cinematic projection to the *bodily persistence* of this 'terminal-man'; a prerequisite for the sudden mobilization of the illusion of the world, of a *whole* world, telepresent at each moment, the witness's own body becoming the last urban frontier. Social organization and a kind of conditioning once limited to the space of the city and to the space of the family home finally closing in on the animal body.

When confronted by literary experiments that do not involve authorial consciousness but instead rely on chance or unconscious stochastic processes, our first reaction is to be skeptical or to judge the outcome as good or bad poetry. But is the judgment relevant to what is really going on? The problem is that our artistic judgment often depends on criteria

Not only do a growing number of people not object to computer-generated literature, music, games, film, and art installations, but they begin to embrace them as postmodern and posthuman expressions.