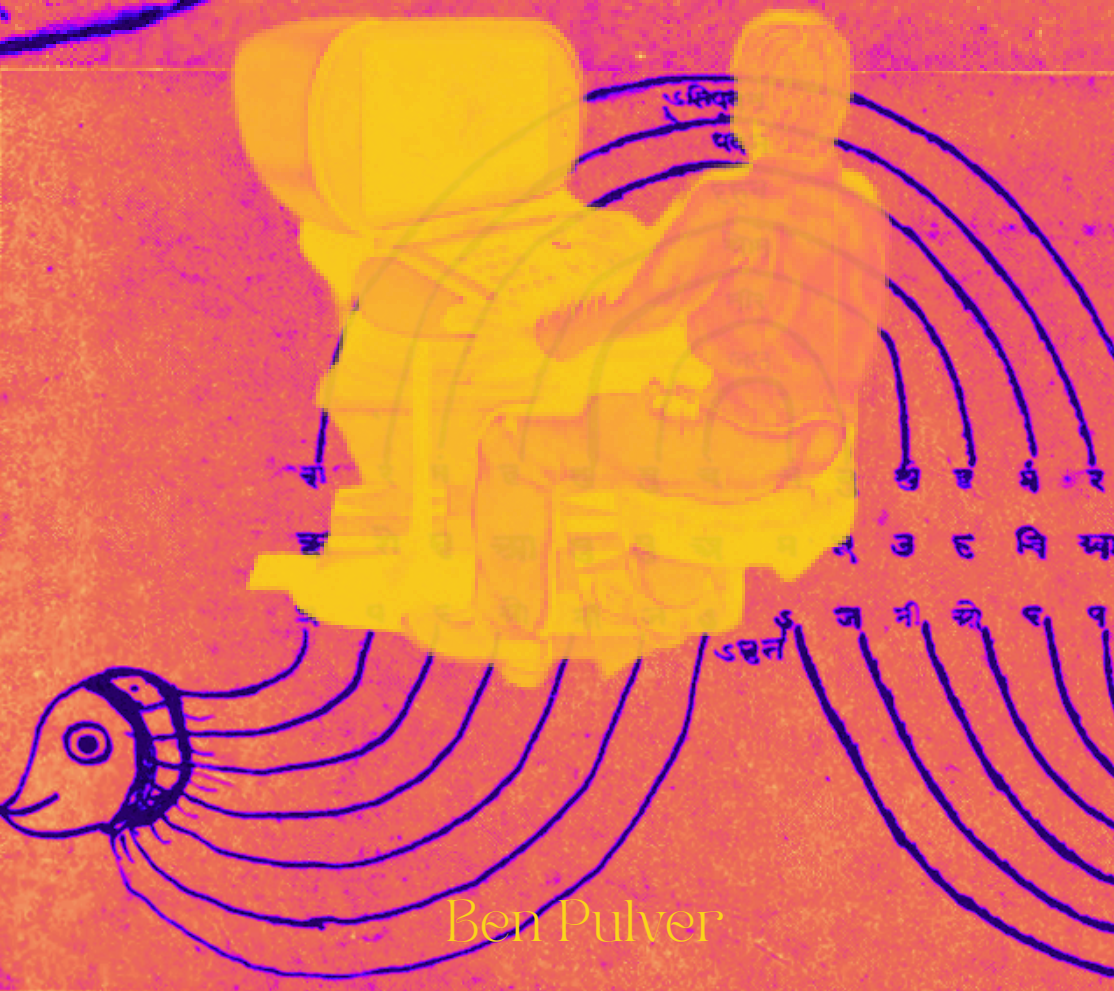


cybernetic images & imaginaries

a speculative archive and critical text about
fictions that make themselves real



Ben Pulver

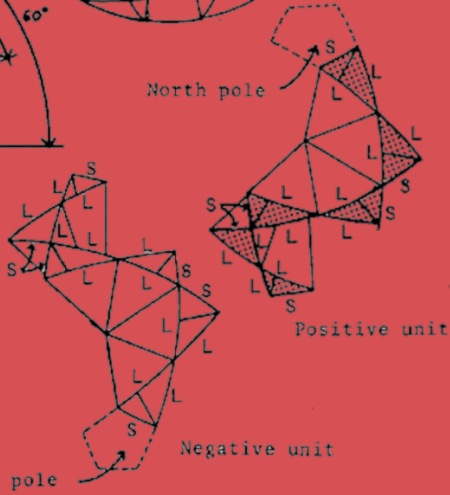
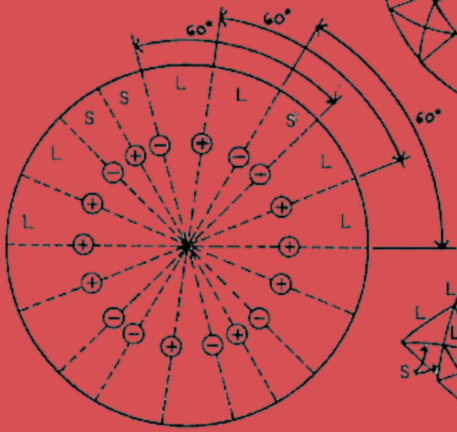
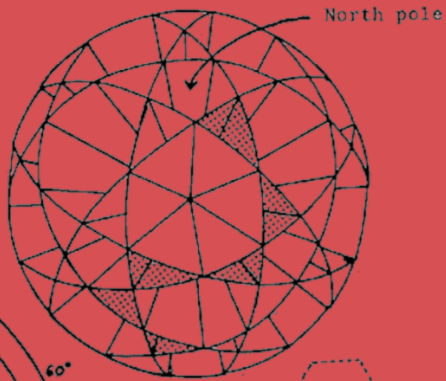
"The atomic wind catches your wings and you are propelled backwards into the future, an entity time travelling through the late C20th, a space case, an alien angel maybe, looking down the deep throat of a million catastrophes. / screenflash of a millionmillion conscious machines / burns brilliant / users caught in the static blitz of carrier fire / unseeing the download that scribbles on their burntout retinas / seize in postreal epileptic bliss / eat code and die / Sucked in, down through a vortex of banality. You have just missed the twentieth century. You are on the brink of the millenium - which one - what does it matter? ... / Pretty pretty applets adorn my throat. I am strings of binary. I am pure artifice. ... / Unnameable parts of no whole short circuit the code recognition programs flipping surveillance agents into hyperdrive which spew out millions of bits of corrupt data as they seize in fits of schizophrenic panic and trip on terror. / So what's the new millenium got to offer the dirty modemless masses? ... / The pleasure's in the dematerialisation. The devolution of desire. / We are the malignant accident which fell into your system while you were sleeping. And when you wake we will terminate your digital delusions, hijacking your impeccable software. ... / Command line error." - Bitch Mutant Manifesto by VNS Matrix, April 1996.

This zine was assembled by Ben Pulver for the New Heretics exhibition at the House of Annetta, London, England, on May 1-May 10, 2026, curated by Krista Mcatee.

The zine is inspired by the image collection method used by the Situationist International, specifically as practiced in their eponymous journal, *The Situationist Times*. For the act of gathering and remixing, they coined the term "détournement". Détournement, Guy Debord and Gil Wolman note, is "less effective the more it approaches a rational reply." (Debord & Wolman, *A Users Guide to Détournement*, 1956) Therefore, I encourage cutting, pasting, drawing and other interventions of this zine to continue to take this 'reply' towards more effective, messy zones.

The bricolage pages of this zine are comprised of collected, scanned, and sometimes remixed images from books on cybernetics (technical diagrams), magazines selling computers and the idea of an artificial intelligence (AI) revolution (namely *Byte* magazine), and images of contemporary AI advertisement campaigns (Claude and OpenAI), and some other screenshots and relevant figures from the effervescent and ever-flowing spring of images that give form to such amorphous things as cybernetics and its close-relative, AI, fuelling the social imaginary of these things/ideas/(un)realities.

Both positive and negative units can be folded from this circle. To fold negative unit, interchange \ominus and \oplus



- \ominus - Fold away from yourself
- \oplus - Fold toward yourself
- S = 15.52248781°
- L = 22.23875609°
- L + S = 60°

Fig. 455.20 The 10 great circles of the Icosahedron Constructed from 10 folded units (5 positive units + 5 negative units).

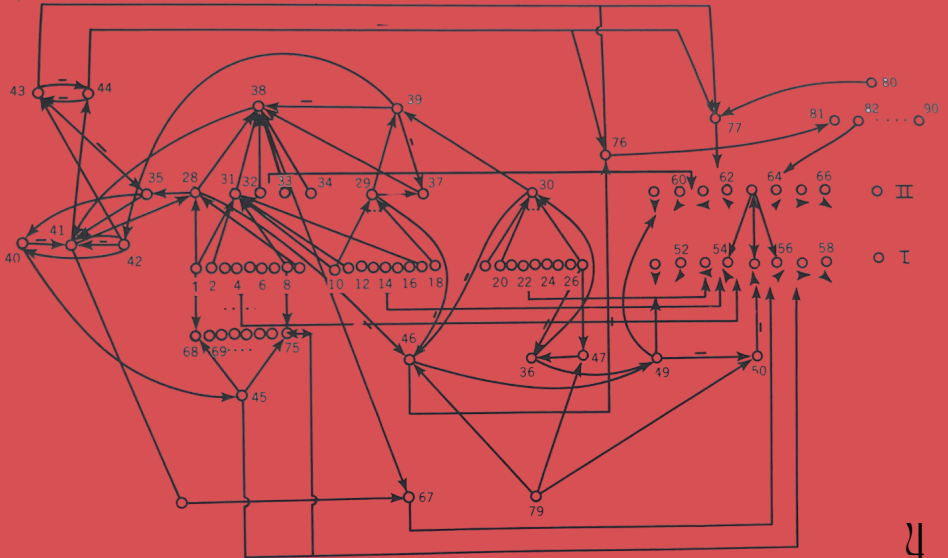
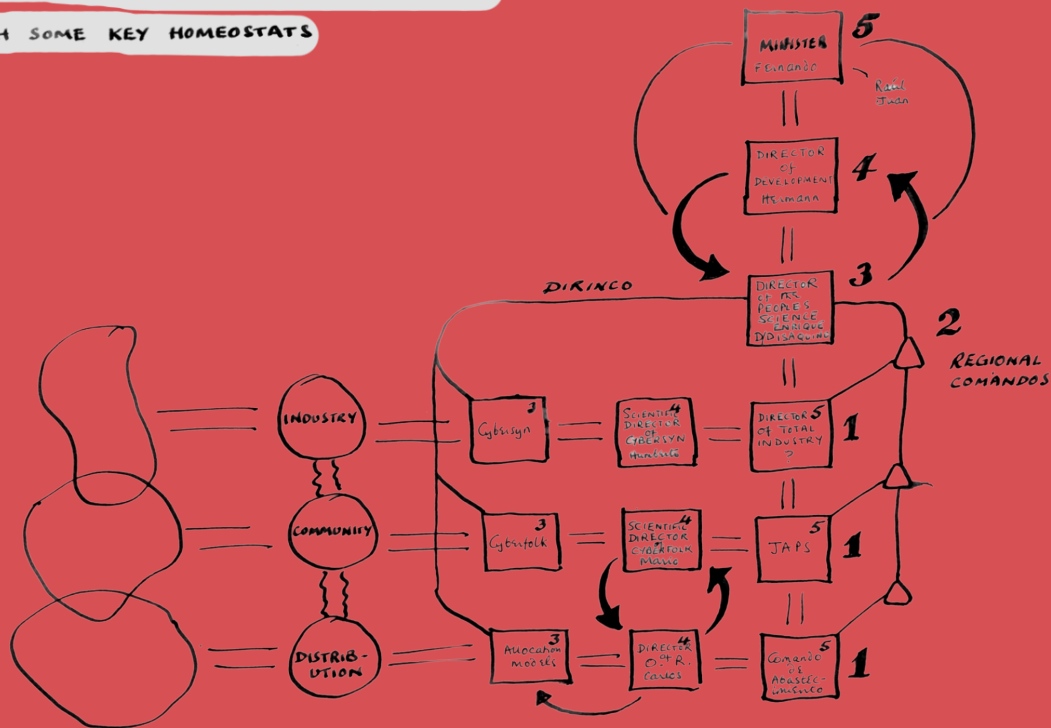


Figure 21. Semantic network of automation.

TWO LEVELS OF RECURSION

WITH SOME KEY HOMEOSTATS



Some researchers
predict that memory
needs of advanced
expert systems will
drive development of
encyclopedic memories.

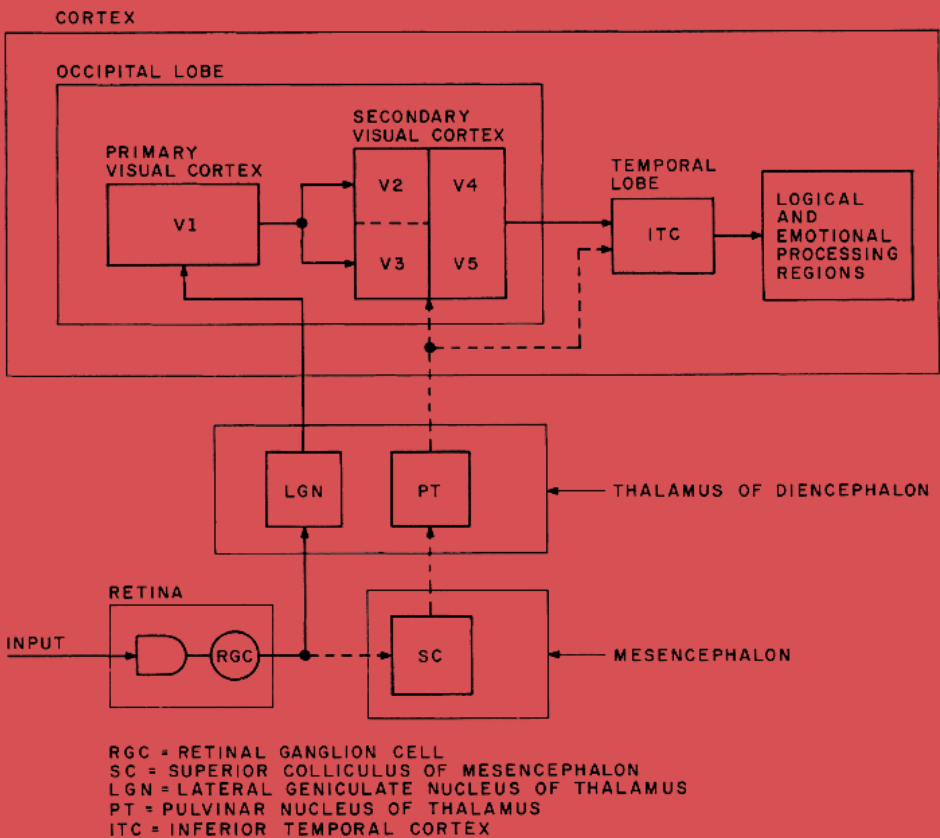
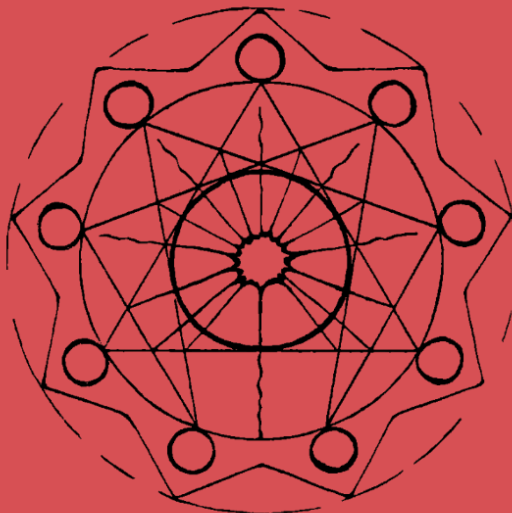


Figure 4.21: A schematic diagram of the major computational centers and data-flow pathways in the visual perceptual system. Two major pathways, which diverge at subcortical levels, are apparent.



We are surrounded by images that configure our various and varying relationships, to paraphrase Guy Debord on the spectacle. Inundated, these images shape how we experience things, spaces, expression, and so on. In short, images act as excellent modulators.

The magic of this enterprise is such that images even configure that which have no definite figure or form. Images, in other words, give rise to (they figure, they form) an imaginary. Images produce a wellspring of figures and forms that shape how we imagine things, and (in a feedback loop) how we continue to image things thereafter.

It is the jurisdiction of images, therefore, to give us a sense of things. This extends beyond the realm of (what we might call) prototypical objects, for instance: chair. 🪑 Turning to the longstanding philosophical object of inquiry where the question is: "what is the essence of chair," we are confronted with an overwhelming mental archive of what 'chair' is. It need not be a four legged object oriented towards seating a person, but it could be. That is one of chair's forms.

This imagination, formed in the wellspring of existing images, is a powerful zone. It conditions our perception of an object/idea/thing, whatever it is that is imaged. Over time, certain images form the basis of these things which occupy our mental space—certain images are more conducive to sticking around, leaving an imprint in our imagination of what a thing could be.

Even in its architectural ambiguities, chair is a relatively straightforward object-idea. But what about something more amorphous-like kindness?

Images are among those things that fuel our imagination of what certain things are or could be. Whether as still images from paintings or moving images from films, images give form to ideas in our imagination.

Images are expert modulators.

This zine is a question about the shape of an idea.

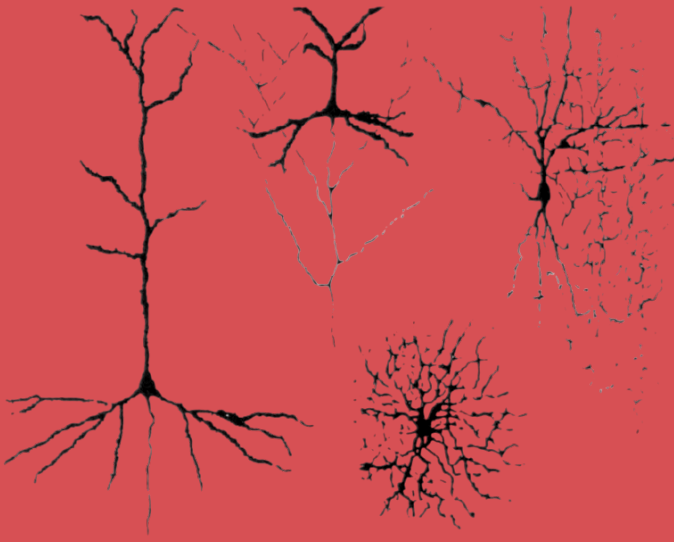


Figure 1.2
Neurons, as drawn by Santiago Ramón y Cajal from microscopic observation of Golgi-stained brain tissue.



Today's home computers fit on a desk and consume the power of a light bulb, yet are faster, have more memory, and are more powerful than the warehouse-sized computers of the early 1950s. Pictured here is one of the first "wizard computers": the *Apple II* made by Apple Computer, Inc. [Courtesy of Apple Computer, Inc.]

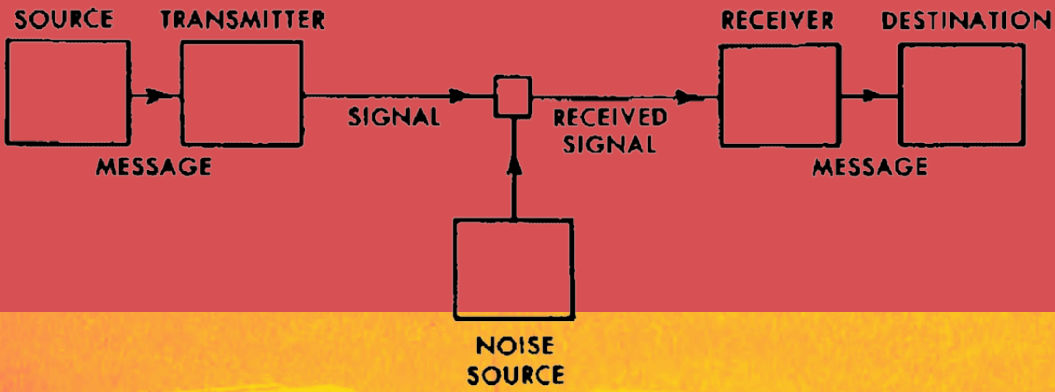
How About Dependability?

You rely on your personal computer system to help get your work done. That's why it's important to choose a monitor built for reliability. Princeton Graphic Systems monitors are built under the highest quality control standards, backed by a full one-year warranty and supported by a nationwide service network.* The result: monitors that perform when you need them, day in and day out . . .

*Bell & Howell, Xerox, MAI Sorbus Service and Princeton Graphic Systems.



INFORMATION



SYSTEMS - SOLUTIONS

If you have a problem that can be solved by a computer—we have a systems solution.



A GUIDE TO COMPUTING THEN & NOW

The Mathematics and Computing Gallery (Gallery 46) on the second floor of the Science Museum contains exhibits spanning hundreds of years, from the earliest calculating and drawing instruments to electronic computers.



The visitor can operate many working demonstrations, and use a computer terminal.

Published by the Science Museum, Exhibition Road,
South Kensington, London, SW7 2DD

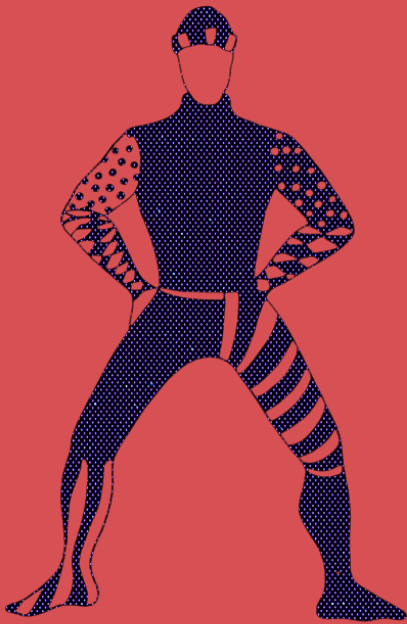


Fig. 11.1 Costume to aid computer pattern recognition

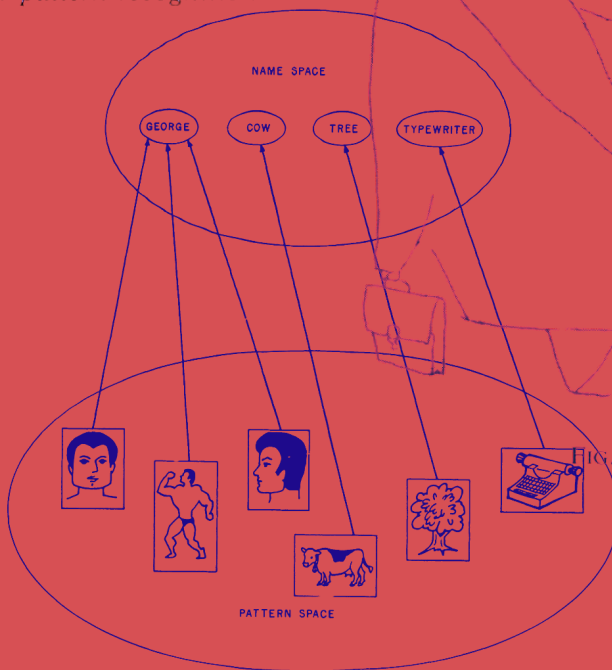


FIG. 2.

Figure 5.25: The process of pattern recognition is one of naming the patterns. Typically many different patterns will be classified by the same name.

Cybernetics, a science of control and communication in the animal and the machine, emerged amidst the postwar intellectual rubble. It was a direct result of a series of interdisciplinary conventions called the Macy Conferences (1941-1960, New York). From these meetings, Norbert Wiener brought the idea to bear on the public via his bestselling book "Cybernetics, or Control and Communication between the Animal and the Machine" (1948).

What is the form of cybernetics? What is its figure?

Its breadth and relevance spanned mathematics, physics, computer science, biology, psychology, linguistics, and art. It seldom left a discipline untouched.

In some cases, cybernetics was invoked to describe feedback loops and to infer social and biological conditions of psychological disorders; in other cases, cybernetics was invoked to name the task of solving the problem of the brain via its function and behaviour.

In short, it was a vacuous and amorphous idea—if it can be summed up in a word. Just as a capacious room can host a world of chairs, a capacious idea can lend itself to myriad forms, host numerous figures.

A critical aspect of the cybernetic myth was its capacity to structure the world into systems. Another way of saying this is that systems became structures. Nameable things. Divisible things. Technical diagrams could articulate vastly complex phenomena.

From the drawings of Stafford Beer to Heinz von Foerster, diagrams haunted by varying degrees of technicity form the cybernetic archive. The world imaged as diagram. The diagrammatic world. A certain visual structuralism was the language of the cybernetic imaginary.

Byte magazine provides a number of images that offer form to the cybernetic, informatic, and AI imaginary.

A GLOSSARY OF ARTIFICIAL-INTELLIGENCE TERMS

AND, OR, AND STREAM PARALLELISM: different techniques for implementing parallel operations, based on *and*, *or*, and pipelined execution hierarchies.

BAGS: formal mathematical objects that differ from sets in that they allow duplicate items.

BLACKBOARD: used in systems composed of independent modules as a means of communication. The blackboard is a common area of memory containing system-state data that all modules can access.

FRAME: a knowledge structure (or database) used to describe the attributes that an object possesses, arranged in a "slot and filler" format. Each slot and its contents carry information about a particular aspect of the object.

GRAIN SIZE: when used in conjunction with parallel processing, grain size refers to the complexity of the

code chunks allocated to each processor. For example, if processor A is assigned to perform an addition operation while processor B is assigned to perform a sort operation, the grain size of the code assigned to processor A is smaller than that assigned to processor B.

HEURISTIC: a technique that improves the efficiency of a problem-solving process, even though its use cannot be strictly justified. In AI, heuristics are typically used to reduce the time required to solve extremely complex search problems.

KNOWLEDGE ENGINEER: an AI programmer who constructs expert systems.

PREDICATES AND DEMONS: a predicate is a type of function that tests for some condition involving its arguments. A demon is a procedure that activates automatically in response to recognizing a predefined state.

SCRIPT: a frame-like knowledge structure used to represent related sequences of events. The slots in a script contain information concerning an event (where the event occurs, people involved, objects manipulated, etc.), and the events are linked in a causal chain.

SEMANTIC NET: a graph of nodes and connecting links; the nodes represent objects, and the links represent relationships. A family tree is a good example of a semantic net.

TAGGED MEMORY ARCHITECTURE: in AI applications, tagged memory architectures use part of each memory word to convey information about the data stored in the remaining bits of that word, including the data type and format.

UNIFICATION: a pattern-matching method; the result of a unification is the assignment of values to the variables of two patterns so that both patterns become identical.



Are you ready to join the Artificial Intelligence revolution?

THE QUEST TO UNDERSTAND THINKING

BY ROGER SCHANK AND LARRY HUNTER

*It begins not with complex issues
but with the most trivial of processes*

ARTIFICIAL INTELLIGENCE or AI takes as its subject matter some of the most daunting questions of our existence. What is the nature of mind? What are we doing when we are thinking, feeling, seeing, or understanding? Is it possible to comprehend how our minds really work? These questions have been asked for thousands of years, but we've made little tangible progress at answering them.

AI offers a new tool for those pursuing the quest: the computer. As anyone who has used one can attest, computers often create more problems than they solve. But for probing the issues of mind and thought, that is just what we need.

The fundamental use of computers in helping us understand cognition is to provide a testbed for our ideas about what the mind does. Theories of mind often take the form of process descriptions. For example, a theory of question answering might claim that people first translate a question into an internal representation, use that representation as an index into memory, translate the recalled memory into an appropriate

form for an answer, and then generate the words to communicate it. (This example is offered not as a real theory of question answering but as an example of what a process theory of mind might look like.)

Process theories seem to be a good way of describing what might go on inside the brain. One problem with them, however, is that all too often what looks like a good description really isn't specific enough to make the theory clear. "Use the representation as an index into memory" isn't a good explanation of the processes behind remembering a fact. How are facts recalled? How is the memory organized? What happens when memory gets very large? What if a fact isn't directly encoded in memory but can be inferred from something that is? A researcher trying to write a program that embodies the above simplistic theory would run into all of these problems and more. That's why we need to write programs. Programming forces us to be explicit, and being explicit forces us to confront the problems with our theories.

Not long ago, AI researchers like

ourselves focused on what they considered to be manifestations of highly intelligent behavior: playing chess, proving mathematical theorems, solving complex logical puzzles, and the like. Many AI researchers devoted a lot of energy to these projects and found powerful computational techniques for accomplishing such "intelligent" tasks. But we discovered that the techniques we developed are not the same ones that people actually use to perform these tasks, and we have instead begun to concentrate on tasks that almost any adult finds trivial: using language, showing common sense, learning from past experiences.

LANGUAGE

We began studying these "trivial" tasks by trying to write programs that

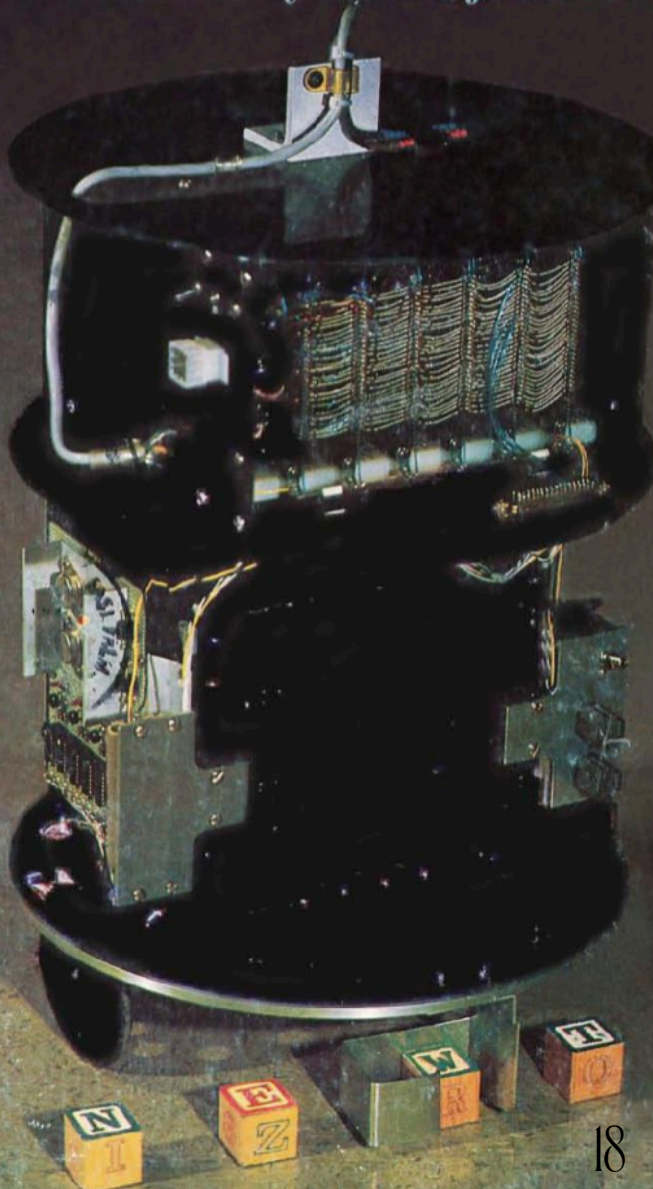
(continued)

Roger Schank is chairman of the computer science department at Yale University. Larry Hunter is a graduate student in computer science at Yale. Both authors can be reached at the Yale University **Artificial Intelligence** Laboratory, 10 Hillhouse Ave., New Haven, CT 06520.

BYTE

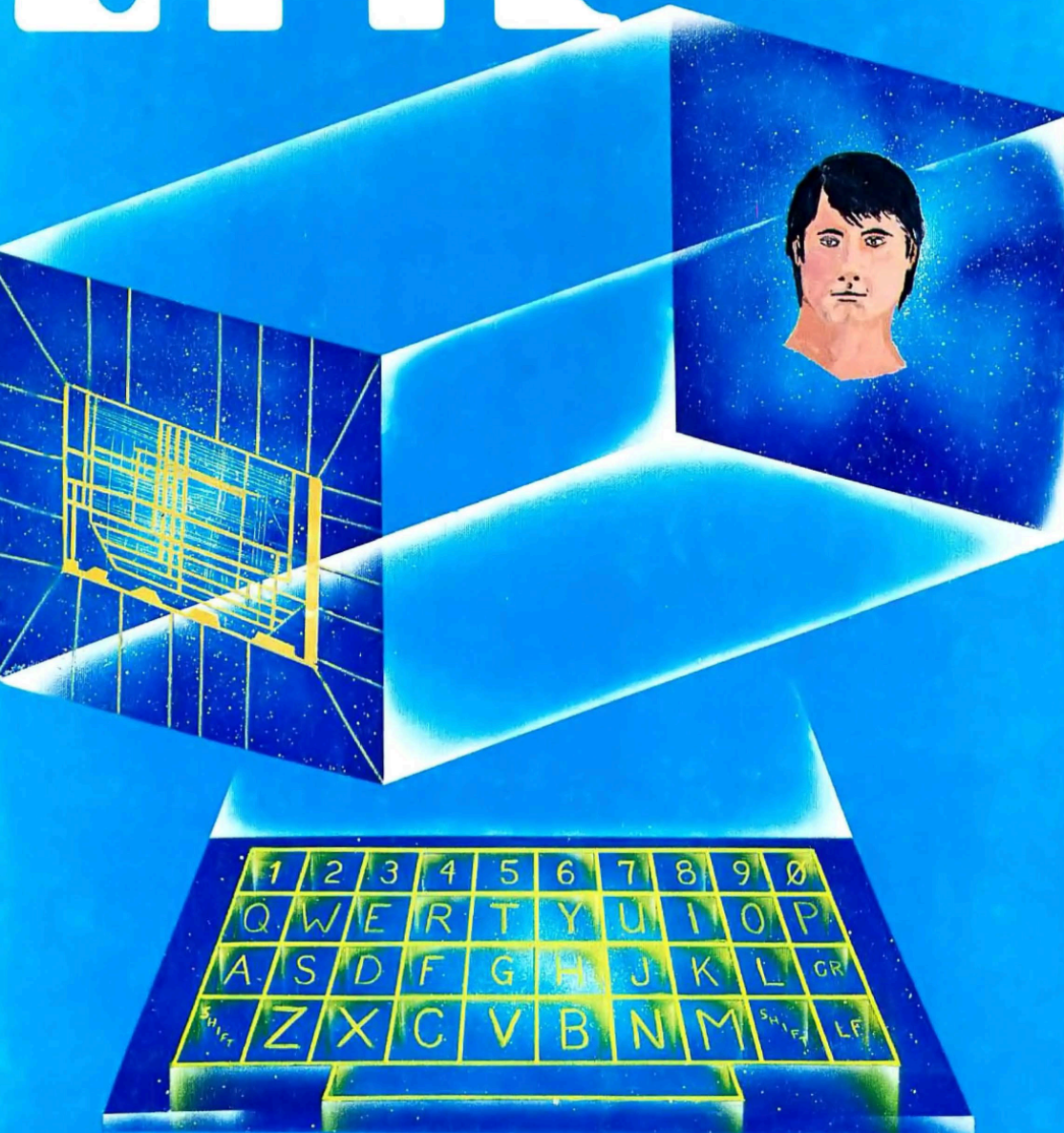
the small systems journal

**A Mobile,
Cognitive Robot**



BYTE

the small systems journal



K-N-LODDING-

Although cybernetics was not the direct cause of the personal computer, they share a history and ethos of the post-war techno-utopic hype. Their ecosystems certainly overlapped: computers or computational devices being critical tools in the realization or implementation of cybernetic ideas.

The fate of the personal computer was, for a good while, unknown. Its destiny was still in the making. Images were critical makers of the computer's mythos. What would it come to signify? What would become the semiotics of computer culture?

As depicted in Byte magazine, particularly from its covers (whimsically drawn by Robert Tinney from 1975-1990), the computer would be many things (it is true). Although we never quite got the computer built into the wooden school desk, as theorized in the 1987 issue.

Many of these images and ideas were shaped by advertising campaigns. Visual rhetoric was used to sell the computer and its superiority over another competitor. The computer was sellable. An audience was ready for capture.

Byte was also operating a campaign to document(?), promote(?), and sell the rise of artificial intelligence. Catering to those with an interest in the computer and its increasingly impressive capabilities across the early days of the PC (1970s-1980s), Byte featured articles and advertisers discussing AI—the computer that thinks. The computer that would soon (we are sure, very soon) think. There is an investment in investment: a banking on speculative hope.

Through these means, AI is given form. Amorphous as other ideas, AI requires images, text, and other form-bearing media to imbue it with structure.

It is also to the benefit of AI's speculative position that we give it as many forms as it has. What is the form of a blackbox? Its character of unknowability feeds the possibilities for the speculative narrative detailed in Byte Magazine. In other words, these are images to rouse the imagination.

Images for rousing.

BYTE

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**Educational
Computing**

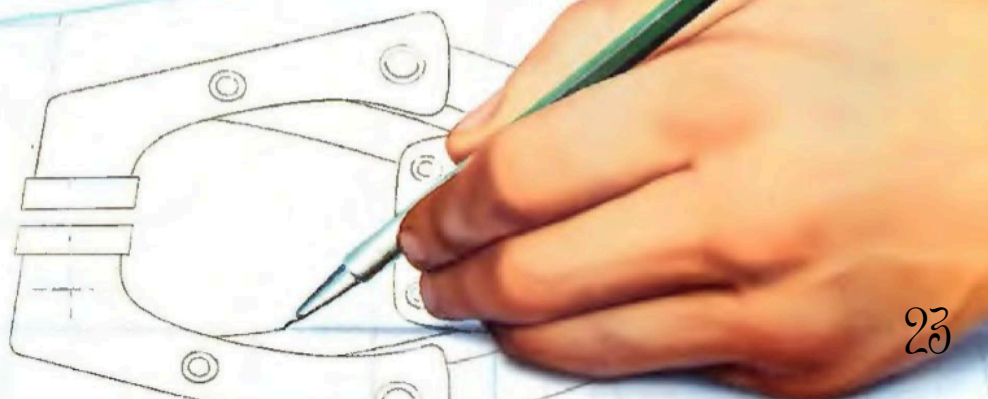
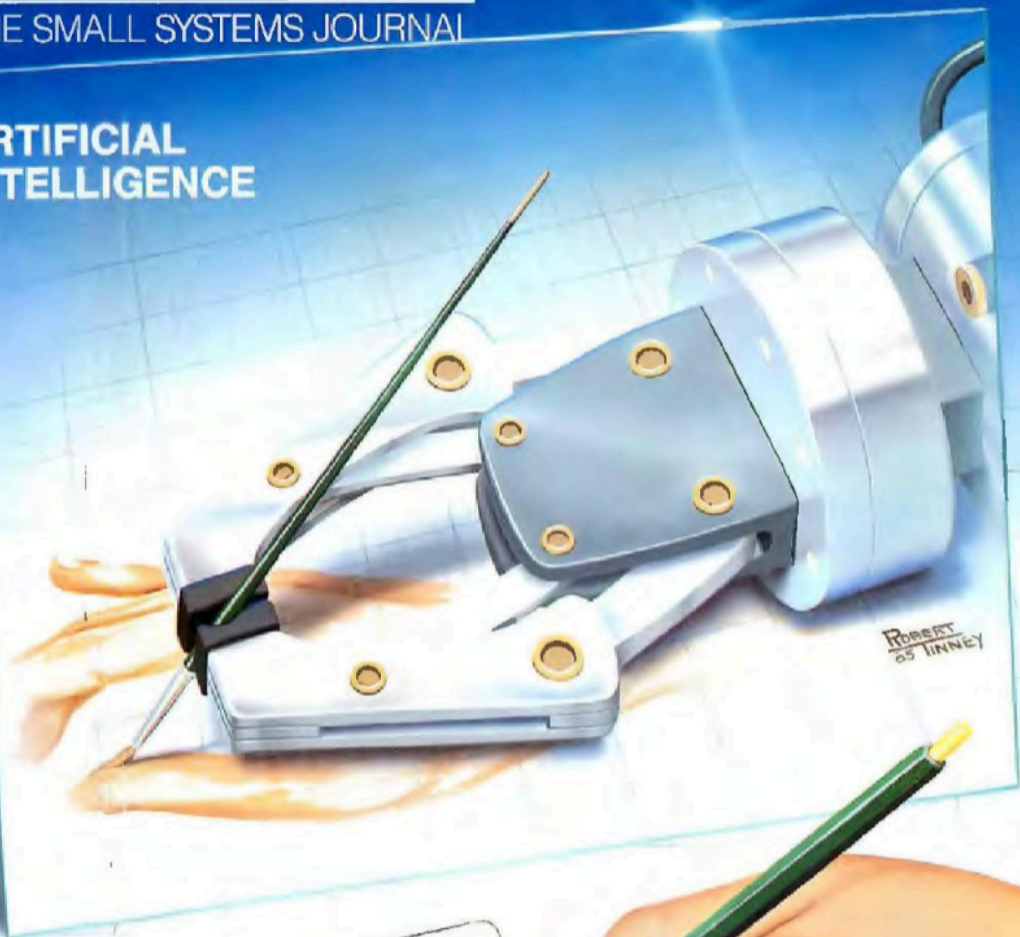
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APRIL 1985 VOL. 10, NO. 4

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ARTIFICIAL INTELLIGENCE



Create a meal plan that
hits 100g of protein per day.
And a grocery list under
\$100/week.

 ChatGPT



A jetpack for your thoughts

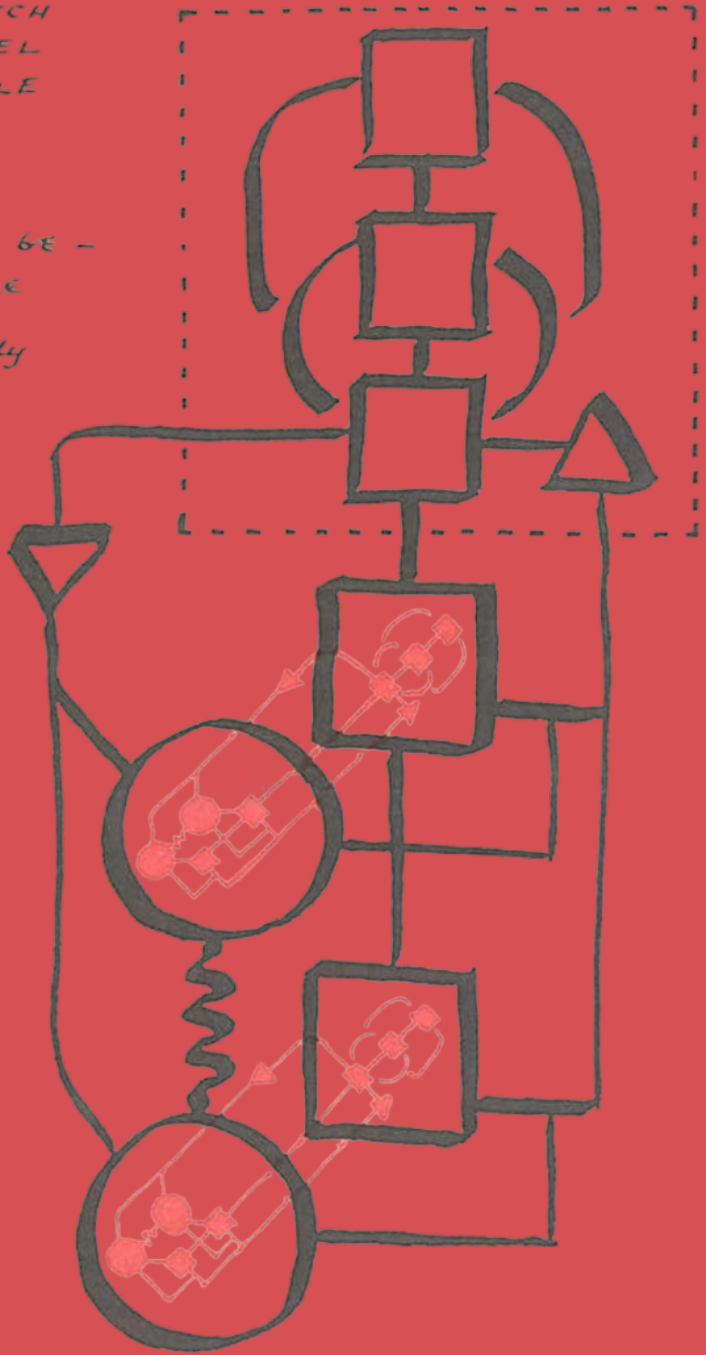

Claude
BY ANTHROPIC

A jetpack for
your thoughts

 Claude BY ANTHROPIC

ROUGH SKETCH
OF A MODEL
OF ANY VIABLE
SYSTEM

Rough it may be -
but do notice
that it is
mathematically
exact ...



THE RED
PARTS PRECISELY
REDUPLICATE
THE WHOLE

FIGURE 1

PROBLEMS

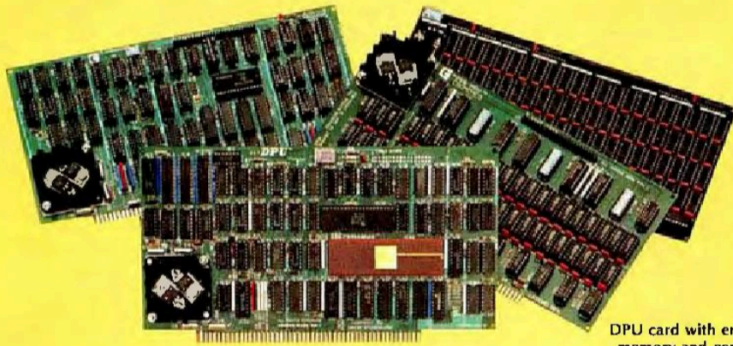
Keep thinking with Claude



Ads are coming to AI. But not to Claude.

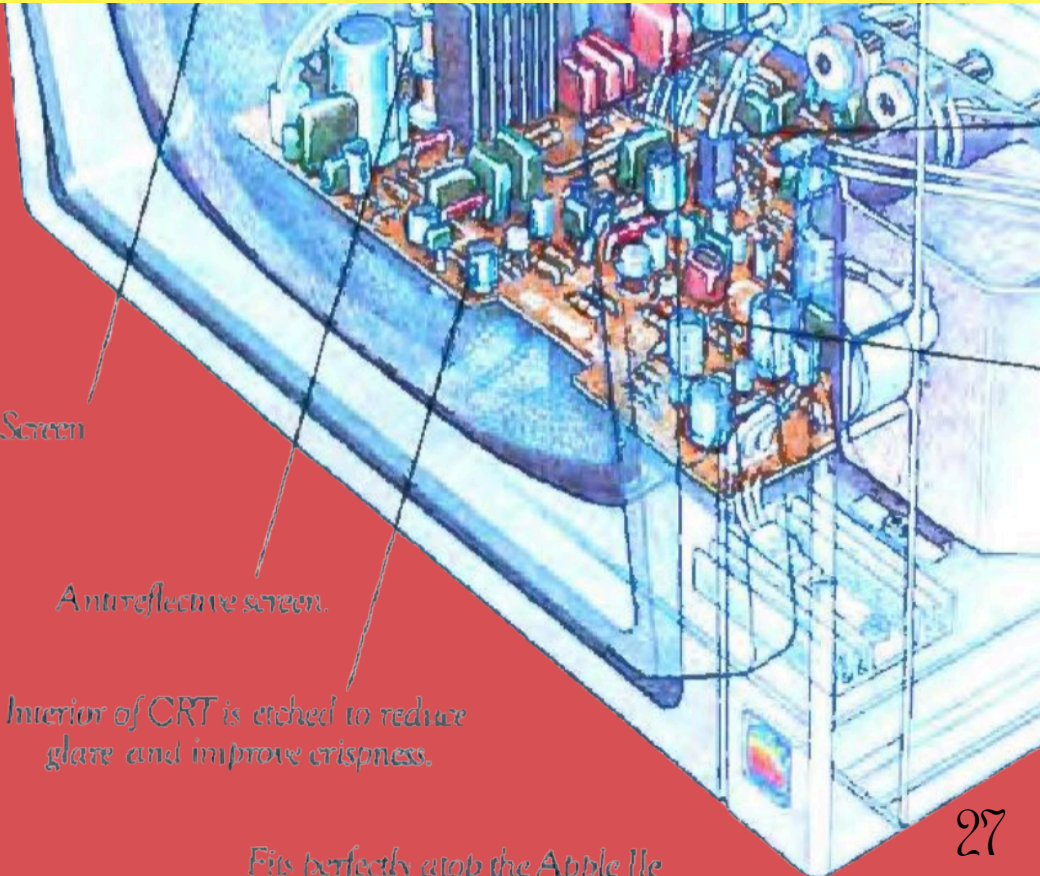


Powerful.



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*Screen
best*

Antireflective screen.

*Interior of CRT is etched to reduce
glare and improve crispness.*

Fits perfectly atop the Apple IIe



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@Pontifex

X.com

Technological innovation can be a form of participation in the divine act of creation. It carries an ethical and spiritual weight, for every design choice expresses a vision of humanity. The Church therefore calls all builders of #AI to cultivate moral discernment as a fundamental part of their work—to develop systems that reflect justice, solidarity, and a genuine reverence for life.

When simulation becomes the norm, it weakens the human capacity for discernment. As a result, our social bonds close in upon themselves, forming self-referential circuits that no longer expose us to reality. We thus come to live within bubbles, impermeable to one another. Feeling threatened by anyone who is different, we grow unaccustomed to encounter and dialogue. In this way, polarization, conflict, fear and violence spread. What is at stake is not merely the risk of error, but a transformation in our very relationship with truth.

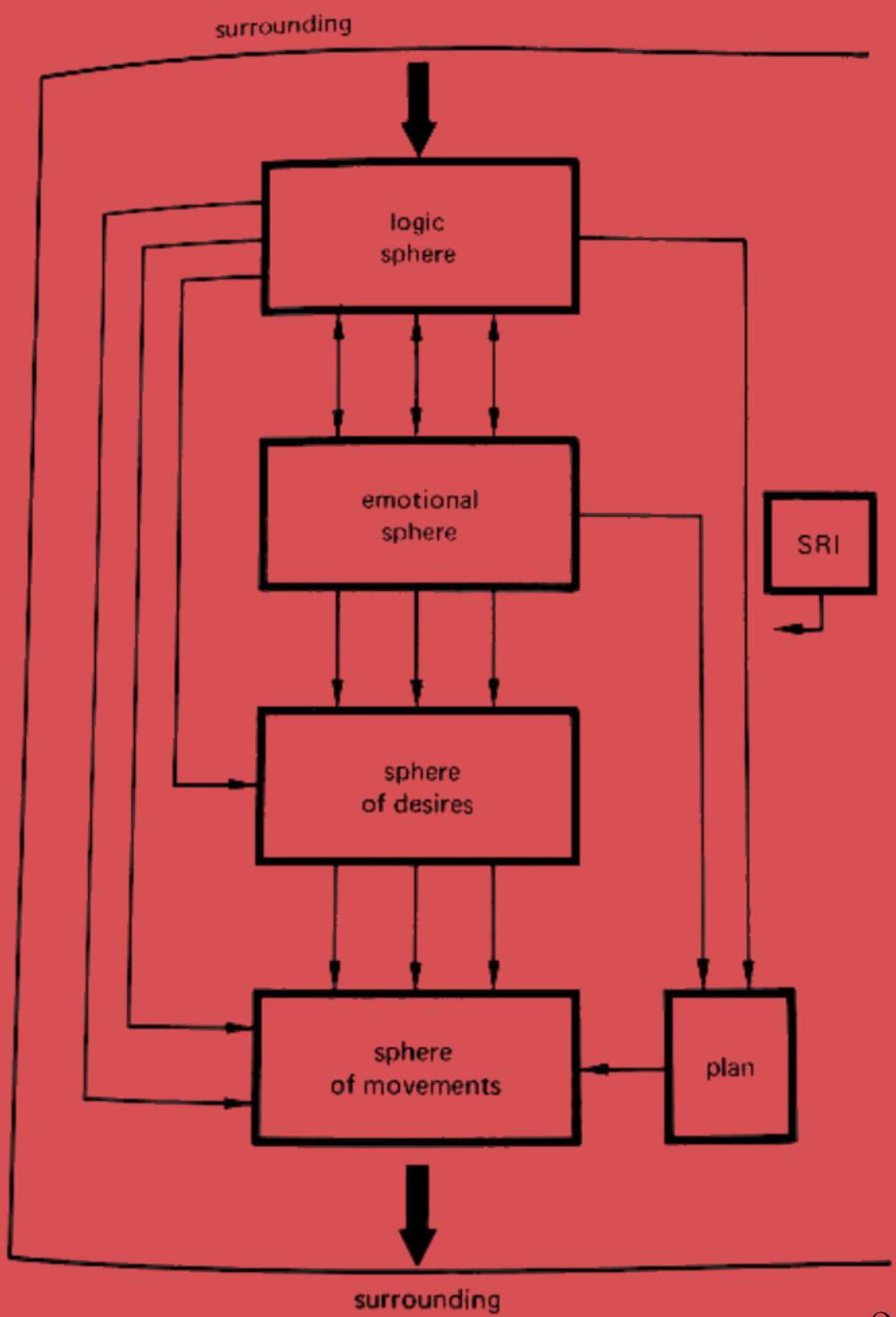


Figure 20. Block diagram of automation.

Our images shape our imaginaries. So what images will we use when we talk about AI? How can we move beyond the provided imaginary of this tech world. What does it mean to be a 'new heretic'? What imaginaries can we produce for new images to represent our implication with these machines? How can we image / imagine refusal? How can we imagine otherwise, and what images can we conjure?

Annetta Pedretti (of the House of Annetta), the eminent cybernetician of Spitalfields, worked to problematize clock-time. For Pedretti, like the image, clock-time was a critical modulator of the modern world (and therefore critical to questions of making and unmaking the world). Lived time became quantified-duration spliced into segments. Clock-time is divisible time. As Dulmini Perera reminds us, Pedretti's reading of clock-time aligns with that of Mark Fisher, who articulates the foreclosure of thinking time beyond or outside of capitalism- clock-time as a condition of this foreclosure. In Pedretti's terms, this might be an "oppression through an economisation of time." (Dulmini Perera, 2024) What of the economization of the image-imaginary?

"Glitch is an error, a mistake, a failure to function... a glitch is part of machinic anxiety, an indicator of something having gone wrong." - Legacy Russell, *Glitch Feminism: a Manifesto*, 2020.

How can we glitch our imaginary of these ubiquitous technologies that, by various means and often through force, have come to shape their image? Between these folds, where we bring to the fore some images which have shaped the cybernetic → AI imaginary, I ask that we find the glitch in the machine that renders our imaged-reality. How can we reimagine (and therefore re-image) these technologies? Perhaps we desire to image the contemporary infrastructure of AI not as tools that naturally extend our minds (as it is being sold to us), but as that which wreaks havoc and violence across dimensions of labour, planetary resources, warfare, social trust, and beyond. Will we bring attention to these images?

What new imaginaries will we produce to better articulate the state of these technologies and their condition? As New Heretics, can we rewire the machinery of the image-imaginary to recondition our future?

ALL WATCHED OVER BY MACHINES OF LOVING GRACE

by Richard Brautigan

I like to think (and
the sooner the better!)
of a cybernetic meadow
where mammals and computers
live together in mutually
programming harmony
like pure water
touching clear sky.

I like to think
(right now, please!)
of a cybernetic forest
filled with pines and electronic
where deer stroll peacefully
past computers
as if they were flowers
with spinning blossoms.

I like to think
(it has to be!)
of a cybernetic ecology
where we are free of our labors
and joined back to nature,
returned to our mammal
brothers and sisters,
and all watched over
by machines of loving grace.

communication company



A number of images were illustrated from the wonderful archive: the Cybernetic Image Library. Image list is in order of appearance.

1. (cover) "Jaina diagram illustrating the eternal recurrence of the sevenfold divisions of the Universe as a cosmic river of time and reality. From a manuscript of the Samāranganasūtradhāra. Ink on paper, Rajasthan, nineteenth century" in Jonathan Benthall, *The Body as a Medium of Expression: Essays Based on a Course of Lectures Given at the Institute of Contemporary Arts, London, 1975*.
2. (cover) cropped section of man on computer in a columnade in cover art of *Byte* magazine, May 1978.
3. "The 10 great circles of the Icosahedron. Constructed from 10 folded units..." in R. Buckminster Fuller, *Synergetics: Explorations in the Geometry of Thinking*, 1982.
4. "Semantic network of automation." in Niklas Luhmann, *Art as a Social System*, 2000.
5. Drawing by Stafford Beer of the 'Viable System Model,' in Eden Medina, *Cybernetic Revolutionaries: Technology and Politics in Allende's Chile*, 2011.
6. Text from article in *Byte* magazine, April, 1985, issue on artificial intelligence, shortly following an article by Geoffrey Hinton on 'simulating learning in a probabilistic system.'
7. "Schematic diagram of the major computational centres and data-flow pathways in the visual perceptual system..." in James S. Albus, *Brains, Behaviour, and Robotics*, 1981.
8. "Schematic framework for discussion of the social cybernetics for the human condition." in Stafford Beer, *Think Before you Think: Social Complexity and Knowledge of Knowing*, 2009.
9. "Neurons as drawn by Santiago Ramón y Cajal from microscopic observation of Golgi-stained brain tissue." in Manfred Spilzter, *The Mind within the Net: Models of Learning, Thinking, and Acting*, 2000.
10. "... the first 'wizard computers': the Apple II made by Apple Computer, Inc." in Fred D'Ignazio, *The Creative Kid's Guide to Home Computers: Super Games and Projects to fo with your home computer*, 1981.
11. Advertisement for Princeton Graphic Systems monitors in *Byte* magazine issue on Artificial Intelligence, April 1985.
12. "Schematic diagram of a general communication system. From Shannon and Weaver, *The Mathematical Theory of Communication*." in Slava Gerovitch, *From Newspeak to Cyberspeak: A History of Soviet Cybernetics*, 2004.
13. Advertisement for Southest Technical Products Corporation in *Byte* magazine, June 1979
14. "Science Museum Mathematics and Computing Gallery Guide cover page." in Paul Brown, *White Heat Cold Logic: British Computer Art 1960-1980 (Leonardo Book Series)*, 2009.

Just ask to see the computer that's software compatible. With human beings.

15. "Costume to aid computer pattern recognition." in Myron W. Krueger, *Artificial Reality*, 1983.
16. Illustration in Heinz von Foerster, "On Self-Organizing Systems and Their Environments," in *Self Organizing Systems*, M.C. Yovits & S. Cameron (eds.), Pergamon Press, London, 31-50 (1960).
17. Illustration with caption: "The process of pattern recognition is one of naming the patterns. Typically many different patterns will be classified by the same name." in James S. Albus, *Brains, Behaviour, and Robotics*, 1981.
18. 'A Glossary of Artificial-Intelligence Terms' in *Byte* magazine, issue on Artificial Intelligence, April 1985.
19. Image from an advertisement for Videotex graphics, from *Byte* magazine, Videotex edition, July 1983.
20. Roger Schank and Larry Hunter, "The Quest to Understand Thinking" article in *Byte* magazine, Artificial Intelligence issue, April 1985.
21. Cover of *Byte*, 'A Mobile, Cognitive Robot,' June 1977.
22. Cover of *Byte*, June 1979.
23. Cover of *Byte*, February 1987.
24. Cover of *Byte*, Artificial Intelligence issue, April 1985.
25. Collage of billboard advertisements for Claude and OpenAI. Claude: "A Jetpack for your thoughts," 2026.
26. "A Rough Sketch of the Model of any Viable System." in Stafford Beer, *Diagnosing the System for Organizations*, 1985.
27. Various screenshots from "Keep Thinking with Claude" Advertisement Campaign video posted by Anthropic on Youtube, November 2025.
28. Overlay of astronaut graphic, screenshot from OpenAI advertisement video, 2025.
29. Advertisement for Cromemco DPU Dual Processor Unit, in *Byte* magazine, August 1982.
30. Advertisement for Apple II, in *Byte* magazine, October 1983.
31. Screenshots of posts by Pope Leo XIV about AI on [X.com](https://www.x.com), April 2026.
32. "Block diagram of automation." in American Society for Cybernetics, *Purposive System; Proceedings of the First Annual Symposium of the American Society for Cybernetics*, 1968.
33. Image from Michael J. Connor, Jodi: *Computing 101B*, 2004.
34. Poster for Cybernetic Serendipity exhibition by Franciszka Themerson, 1968.
35. Poem by Richard Brautigan, *All Watched Over by Machines of Loving Grace*, 1968. Exact source of graphic rendition unknown.

