

# reading and writing electronic text

Allison Parrish  
Interactive Telecommunications Program, NYU

**what is writing?**











**what is reading?**



- *a reading* from the photoresistor
- *a reading* from a fortune teller
- *a reading* of the situation
- *reading* someone's mind
- *reading* a hard drive
- *I read* you loud and clear



Proto-germanic *\*rēdaną* "advise, counsel" >  
Middle English *rede* "govern, interpret (a dream)" >  
Modern English *read*

Proto-Indo-European *\*leg-* "gather" >  
Latin *legere* "to choose, select, appoint" >  
Spanish *leer* "to read", French *lire* "to read"  
...but also English *legal, legislation*



reading is about imposing control, careful selection (in the face of the unknown)



**what is text?**





Proto-Indo-European *\*tetk-*  
"to weave, braid, construct"

Ancient Greek  
τέχνη (tékhne)  
"craft, trade, art"

*technology*

Latin *textus*  
"structure, weaving"

*text*

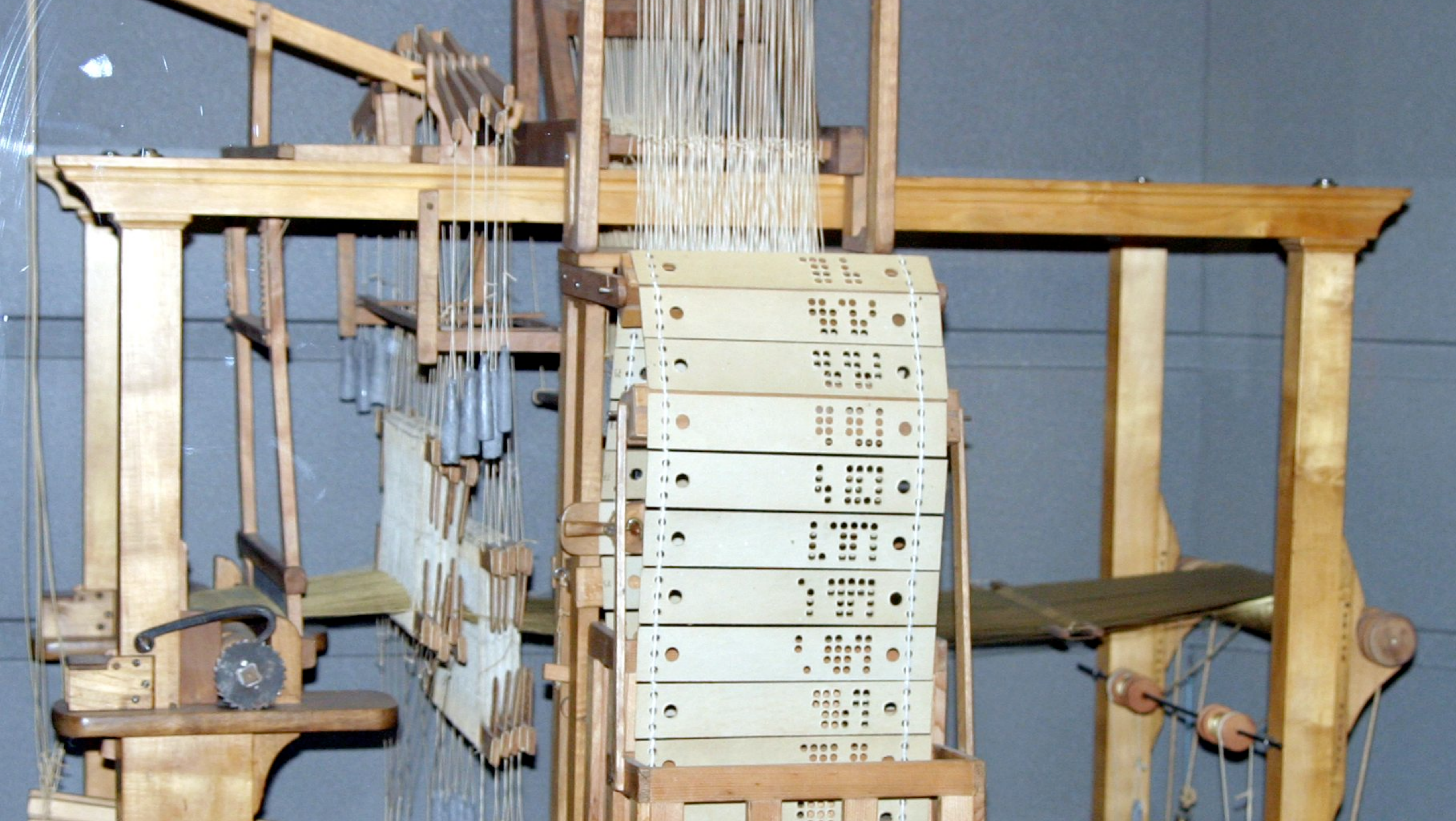
Proto-Germanic *\*pahsuz*  
"badger"

*Dachshund*  
(literally "badger dog")



a text is a weaving (or a badger?!)

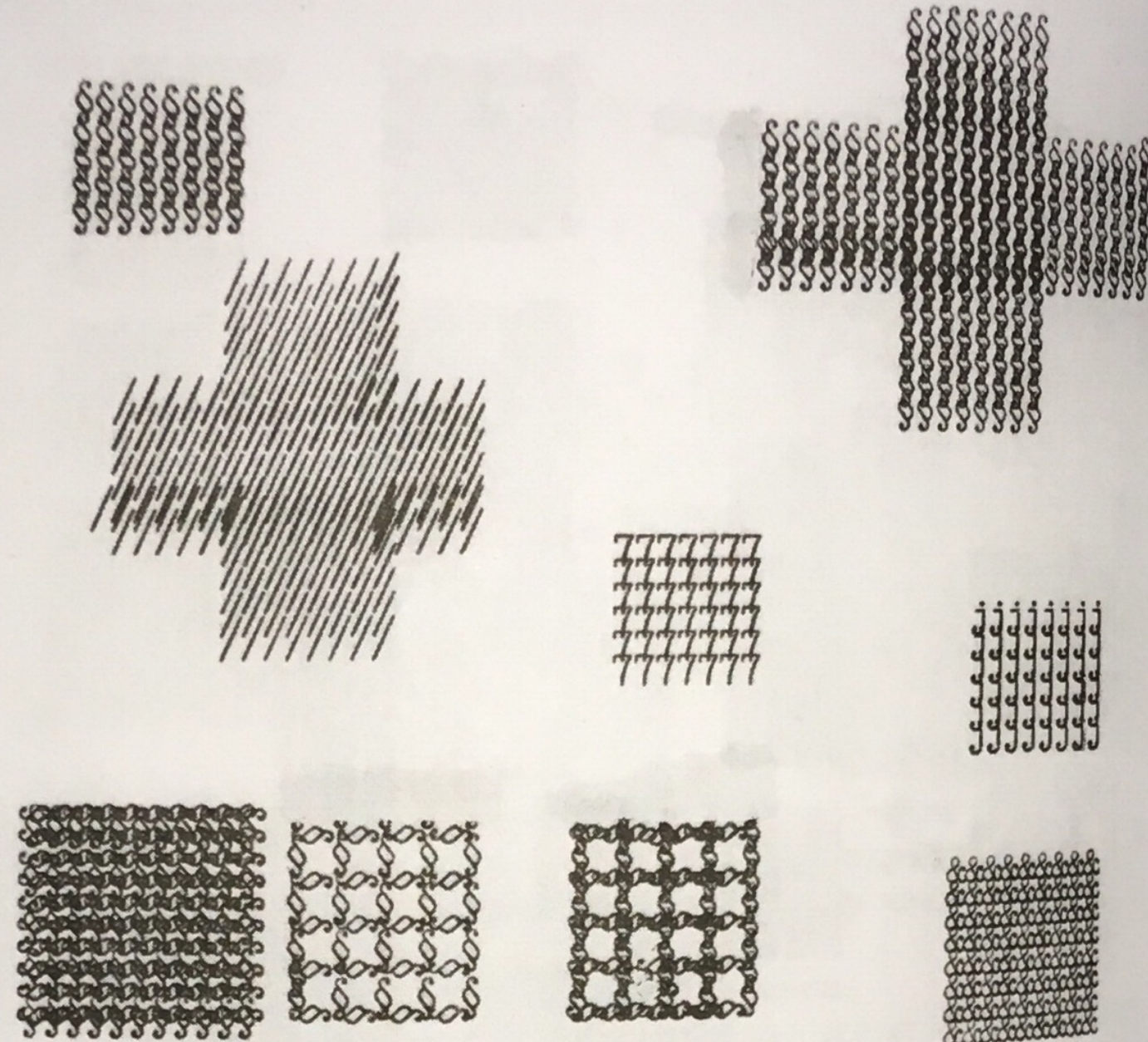






# Jen Bervin, Draft Notation

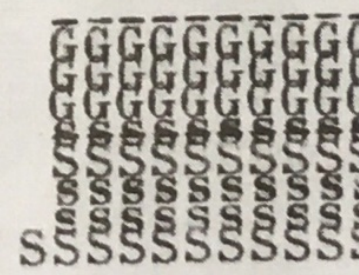
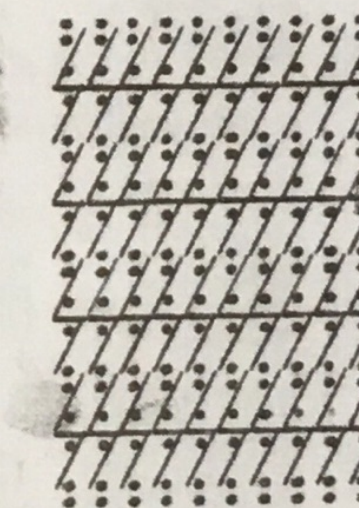
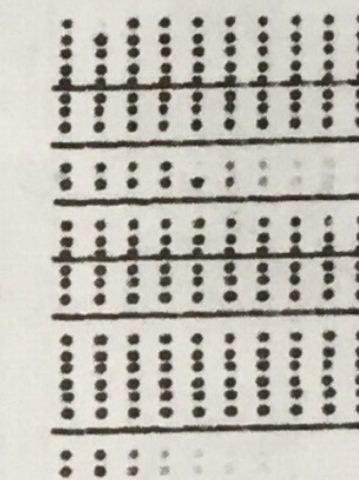
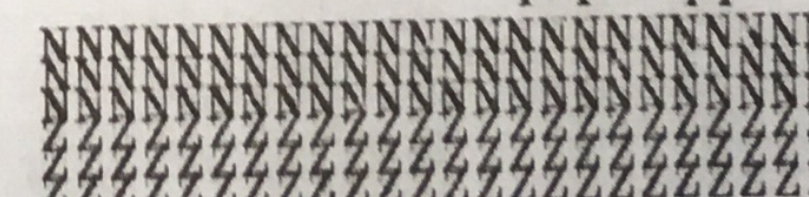
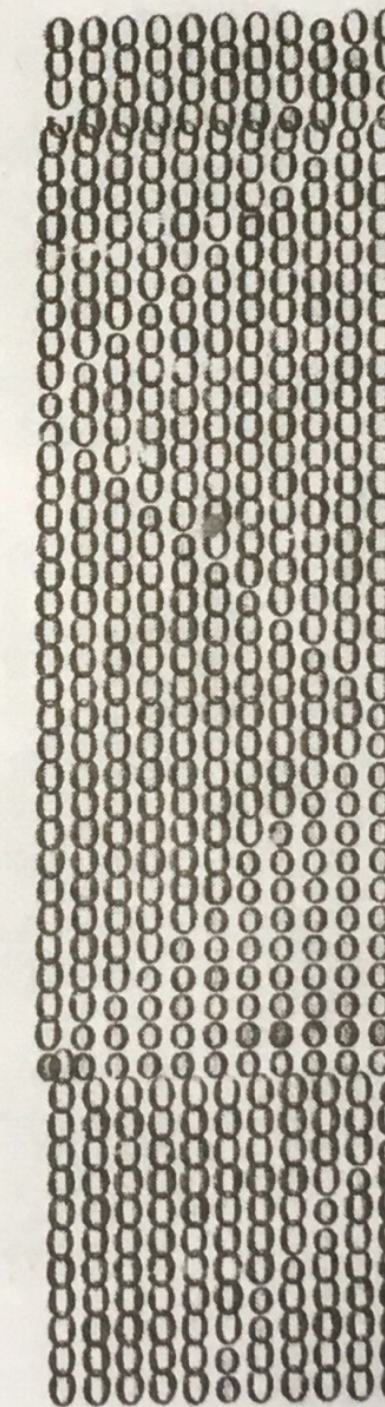
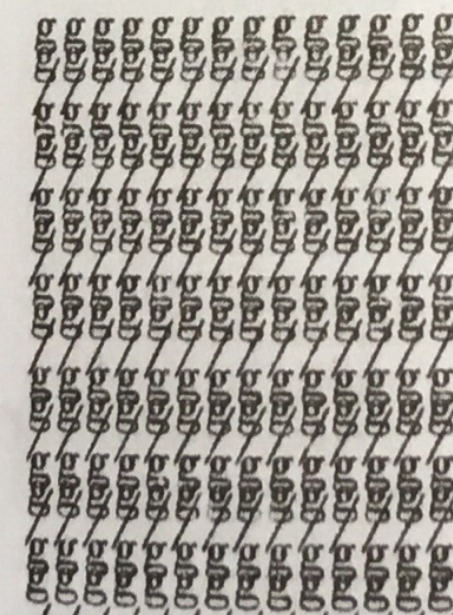
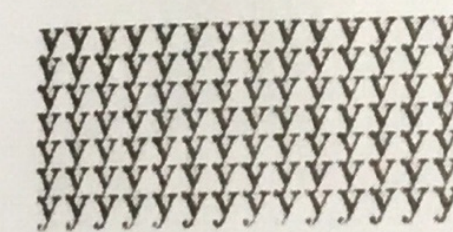
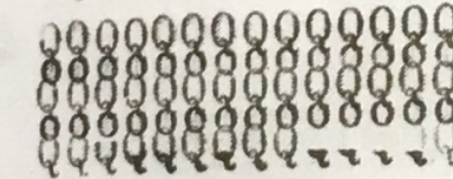
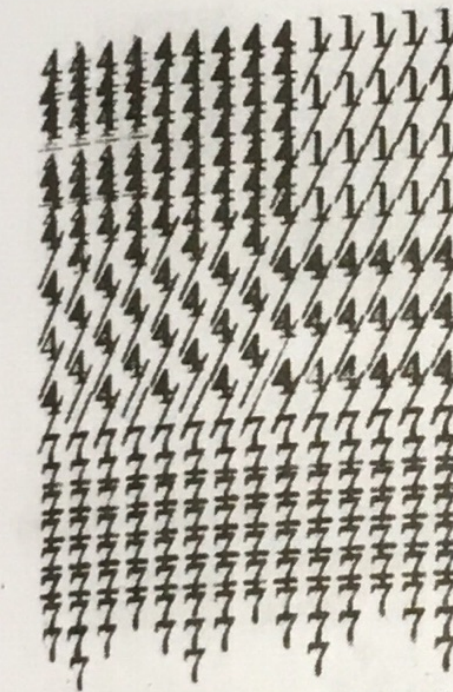
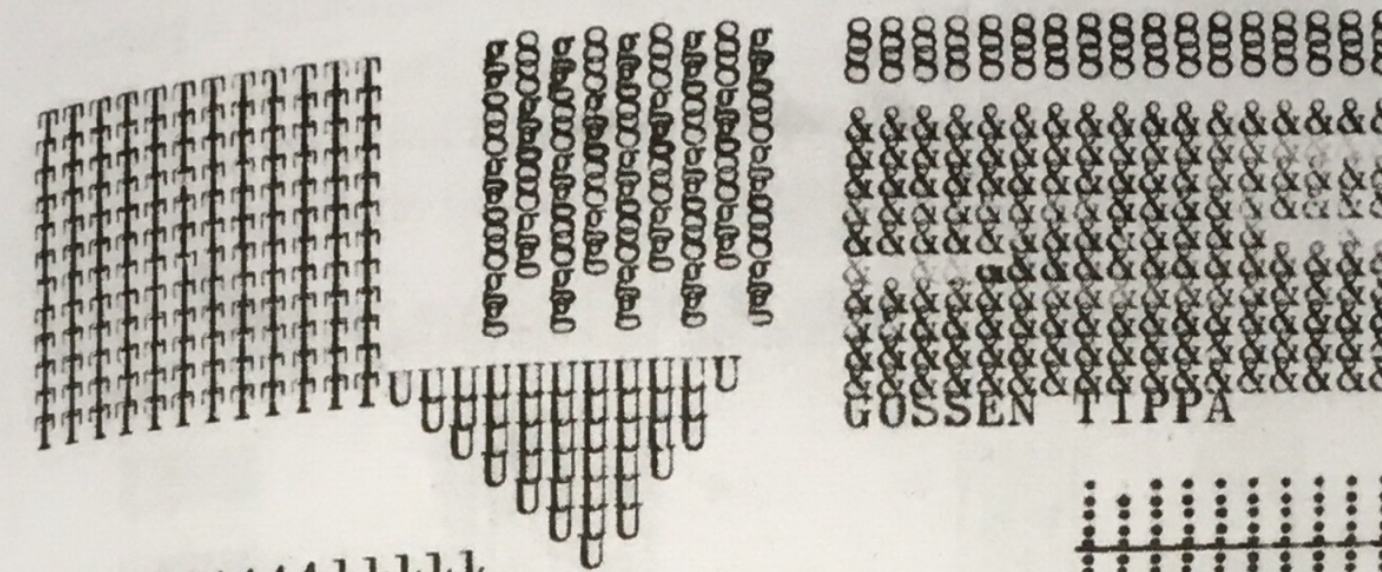
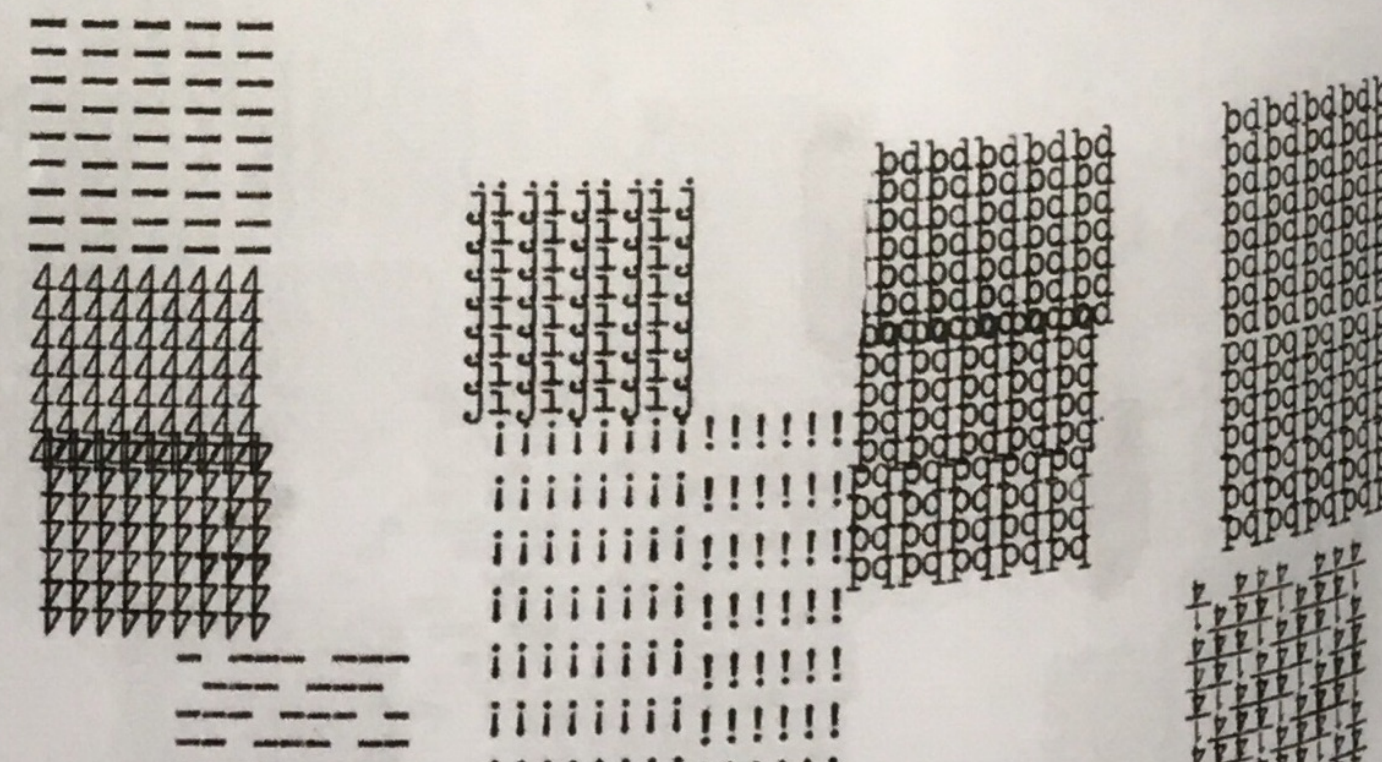
HERMES 2000, GREEN TRAVELING CASE



ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

1234567890 "#\$%\_&'()\*+<sup>1</sup>/<sub>4</sub>\$@?-=<sup>1</sup>/<sub>2</sub>!¢/



db dbdb db  
pq qpqp q

bd db bd  
pd qp pq

d l b      b b      g  
q l p      q q      b



**how is a text created?**



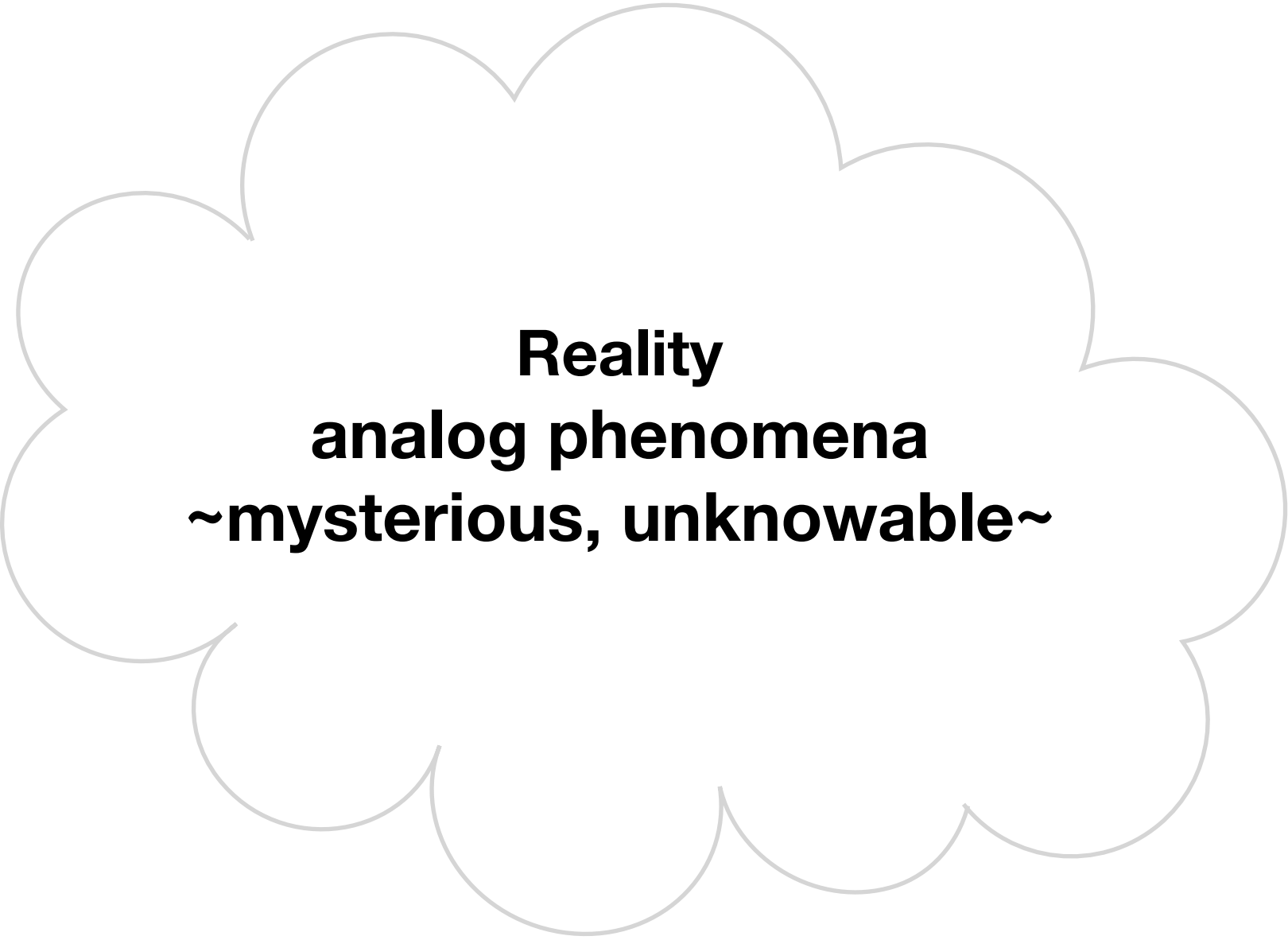
**"The text-artifact does indeed have a physical-temporal structure, precisely because it was originally laid down, or sedimented, in the course of a social process, unfolding in real time."**

*– Urban, G. and Silverstein, M. Natural histories of discourse. University of Chicago, Chicago, IL, USA, 1996.*



**transcription**





**transcription**

**TEXT!**



I mean, police are always messing with me! I'm 45 years old now. I get stopped all the time.

*'Is this your car?'*

What do you mean, *'Is this my car?'* Of course it's my car.

But now there's videotape.

There's no middle ground now. You've got to choose your side, you see. You are either part of the problem or you are part of the solution.

JM: to get a conviction-  
I mean police always messing with me.  
I'm forty-five years old now right?  
I get stopped all the time ([bæs]) says "Is this your car?"  
What you mean is this my car?  
Of course it's my car.  
This happened to me when I was sixteen years old walking the streets of Los Angeles.  
This is crazy but now okay, it's videotaped, everybody can see it,=

<EP>: =Uh huh.=

JM: =

like he said, and then to have - (0.6)

I mean that's serious m(h)an.=

EP: =It is.=

JM: =So you're ([yə]) going to ([gʌnə]) have - (.)  
it's like I told you you got to -

there's no middle ground now. You got to ([gərə]) choose your side you see.

You go either here you're either part of the problem or [you're part of the solution.]

EP: [That's right. That's right.]

JM: And it's going to ([gɔː]) be I really feel it's going ([gɔː])



simplicity and inoffensive manners, add genuine politeness, and, at once, cultivate the virtuous feelings of the heart and the faculties of the mind.

Dr Gregory's observations, in the first section of this small but ingenious and useful book, on the management of infants, and their education, merit the particular at-

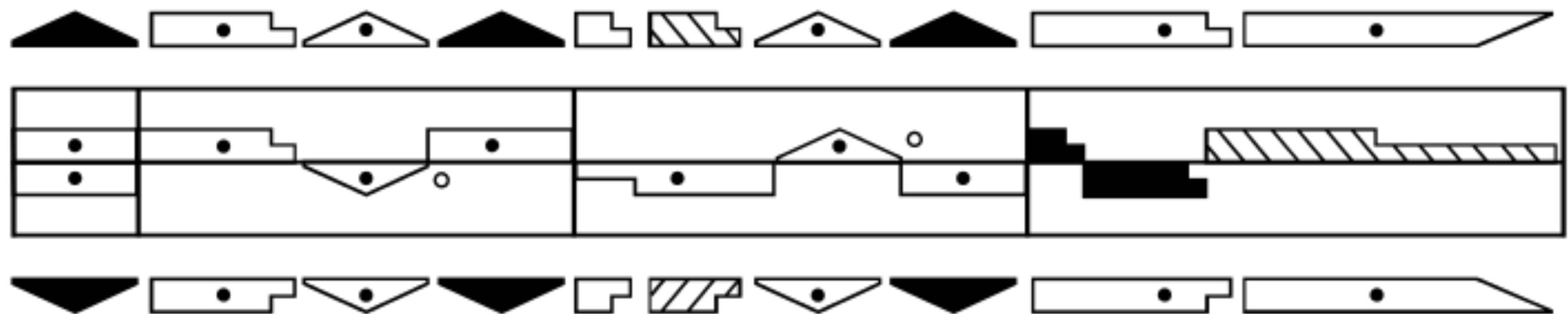
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| Code point | Chinese<br>(simplified)<br>(zh-Hans) | Chinese<br>(traditional)<br>(zh-Hant) | Japanese<br>(ja) | Korean<br>(ko) | Vietnamese<br>(vi-nom) | English       |
|------------|--------------------------------------|---------------------------------------|------------------|----------------|------------------------|---------------|
| U+4E0E     | 与                                    | 與                                     | 与                | 与              | 与                      | for           |
| U+4ECA     | 今                                    | 今                                     | 今                | 今              | 今                      | now           |
| U+4EE4     | 令                                    | 令                                     | 令                | 令              | 令                      | cause/command |
| U+514D     | 免                                    | 免                                     | 免                | 免              | 免                      | exempt/spare  |
| U+5165     | 入                                    | 入                                     | 入                | 入              | 入                      | enter         |
| U+5168     | 全                                    | 全                                     | 全                | 全              | 全                      | all/total     |
| U+5177     | 具                                    | 具                                     | 具                | 具              | 具                      | tool          |
| U+5203     | 刃                                    | 刃                                     | 刃                | 刃              | 刃                      | knife edge    |







**why generate texts with  
computation?**



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**Bianca Bosker**

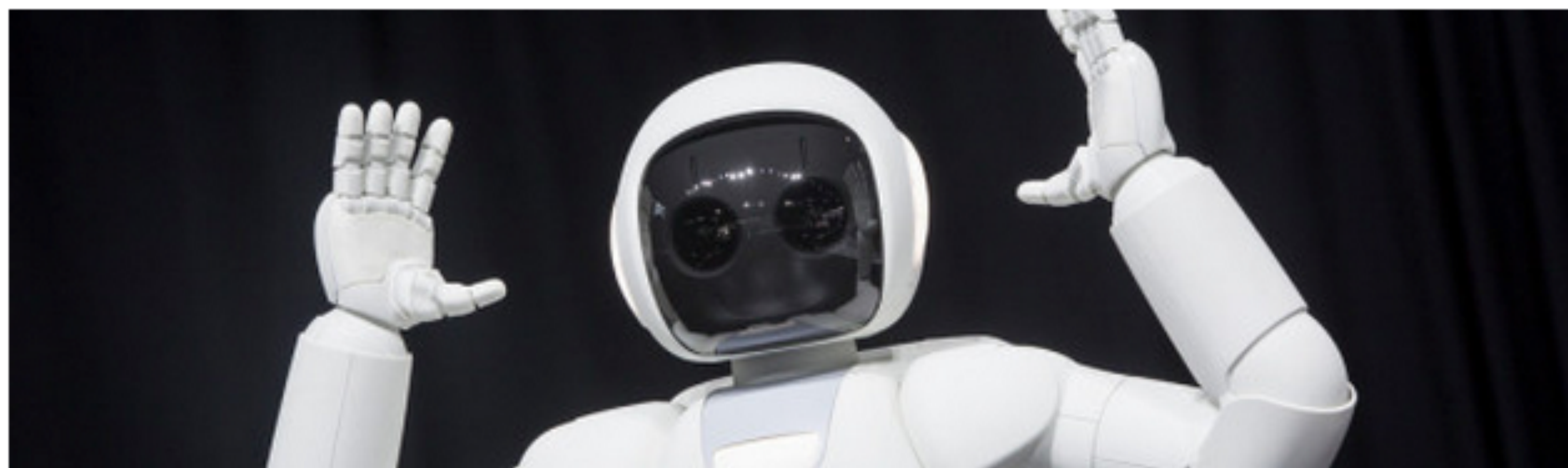
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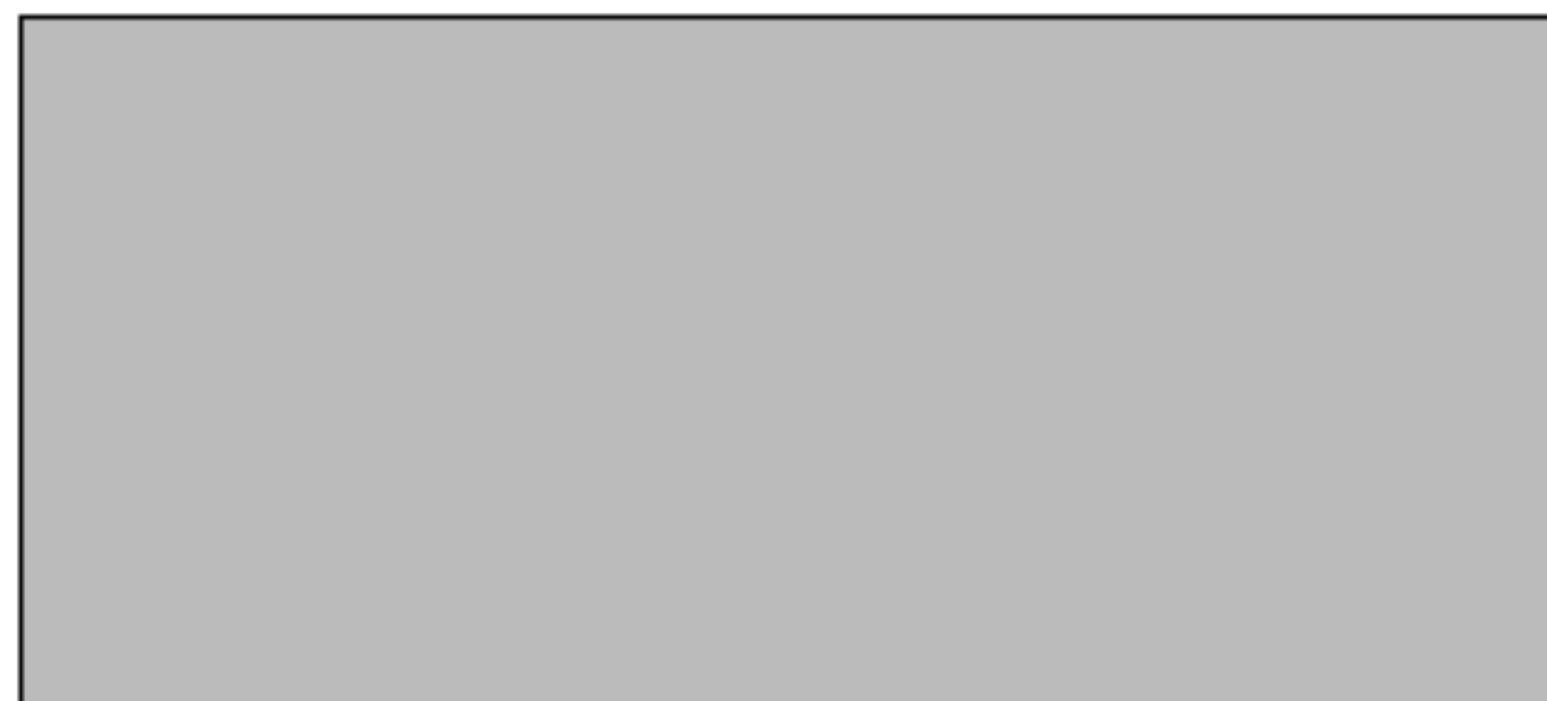
bianca@huffingtonpost.com

# We're Ready For Our Robot Poet Overlords

Posted: 04/19/2014 7:30 am EDT | Updated: 04/19/2014 10:59 am EDT



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**“The purpose of art is to impart sensation to an object as something seen rather than [merely] recognized; the device of art is the device of the ‘estrangement’ (*ostranenie*) of things and the device of defacilitated form, enhancing the difficulty and duration of perception, so that the perceptual process in art is an end in itself and should be prolonged.”**

*–Victor Shklovsky, Art as Device (1916)*



**“In studying poetic speech in its phonetic and lexical structure as well as [...] in the characteristic thought structures compounded from the words, we find ... material obviously created to remove the automatism of perception.”**

*–Victor Shklovsky, Art as Device (1916)*

*ostranenie* = estrangement, defamiliarization

*phonetic* = how language sounds and is pronounced

*lexical* = which words are used

*"thought structures"* = semantics = what words mean







**“[S]uch festivals... allowed people to imagine that other arrangements are feasible, even for society as a whole, since it was always possible to fantasise about carnival bursting its seams and becoming the new reality. [...] Villagers who played at 'turning the world upside down' would periodically decide they actually preferred the world upside down, and took measures to keep it that way. [...] [T]hey appear to have played much the same role in fostering political self-consciousness, and as laboratories of social possibility.”**

*Graeber, David, and David Wengrow. “Unfreezing the Ice Age: The Truth about Humanity’s Deep Past.” The Guardian, 19 Oct. 2021. The Guardian, <https://www.theguardian.com/news/2021/oct/19/unfreezing-the-ice-age-the-truth-about-humanitys-deep-past>.*



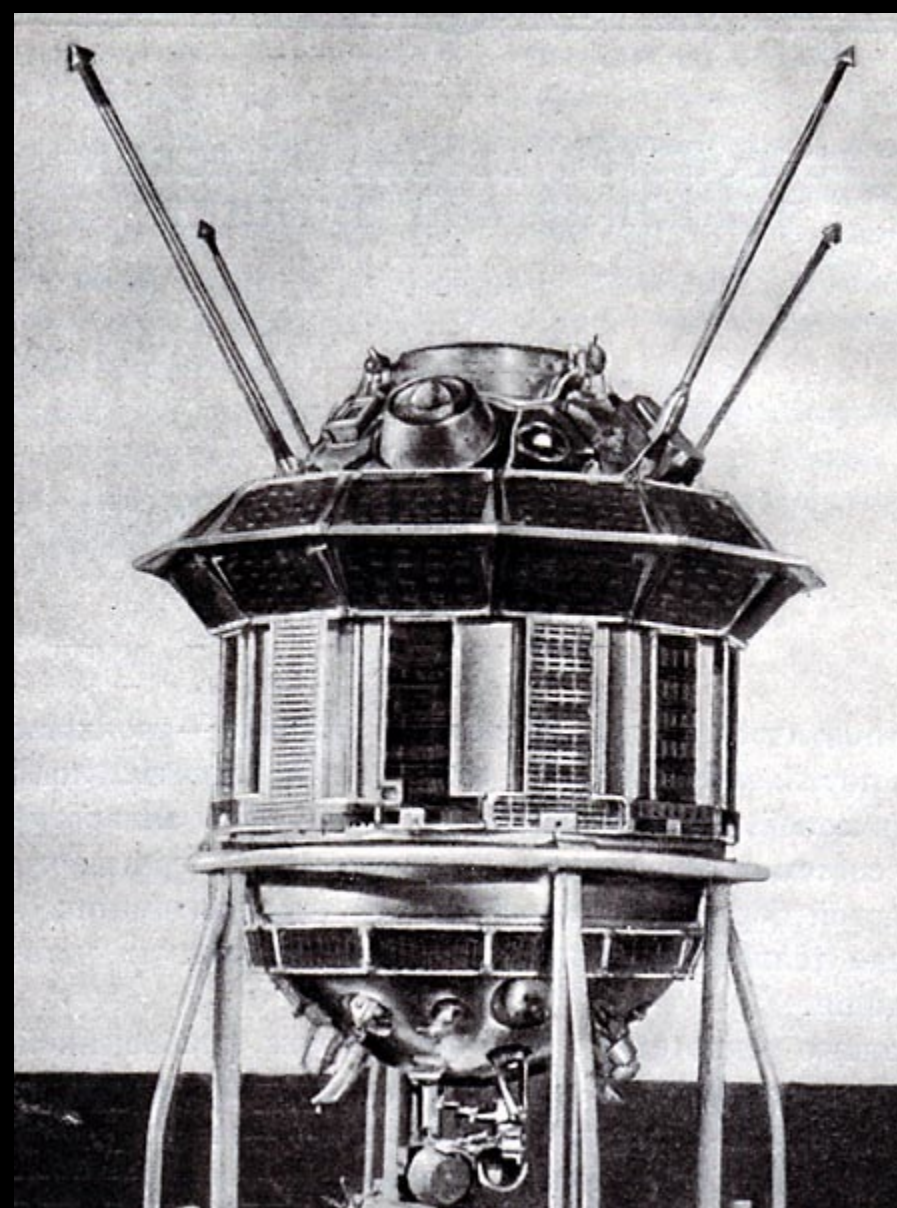
Literature is necessary to politics above all when... it gives a name to what as yet has no name, especially to what the language of politics excludes or attempts to exclude. [...] Literature is like an ear that can hear things beyond the understanding of the language of politics; it is like an eye that can see beyond the color spectrum perceived by politics.... [T]he writer may happen to explore areas that no one has explored before... and to make discoveries that sooner or later turn out to be vital areas of collective awareness.

*Italo Calvino, quoted in Deming, Alison Hawthorne. Writing the Sacred into the Real. 1st ed, Milkweed Editions, 2001, p. 46.*

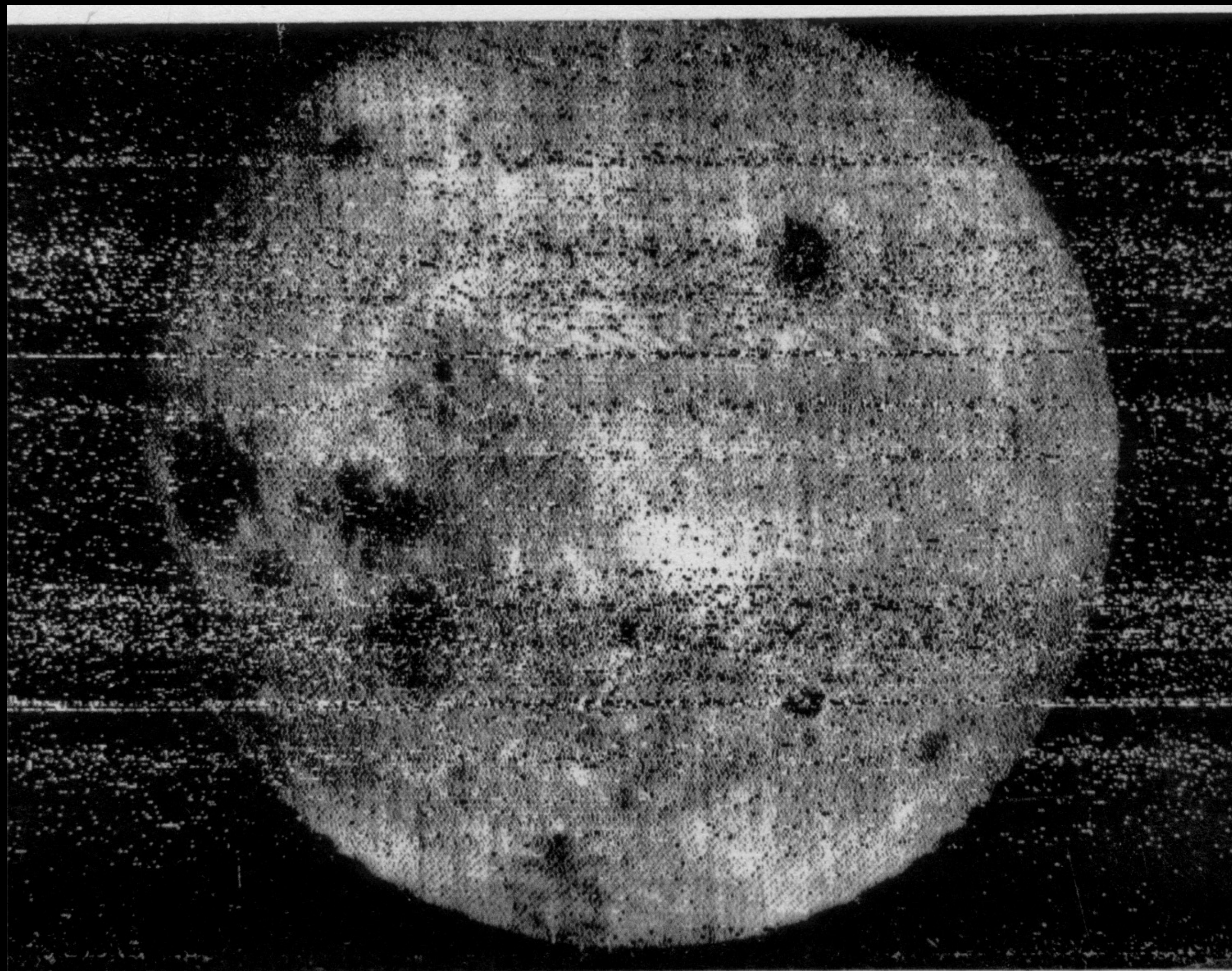


**nonsense (n). something that  
has never been said before**



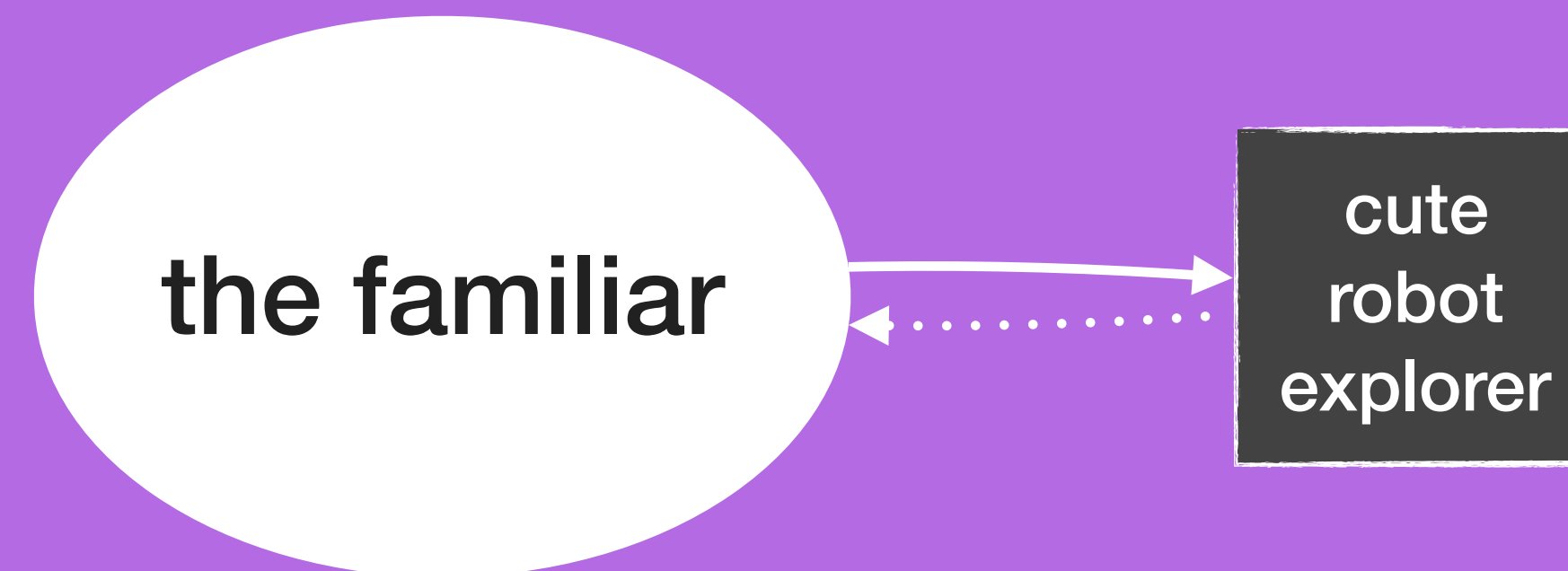


**Luna 3  
(1959)**



*Фотография 1*





the unknown



**[The] motive for use of chance (&c) means was to be able to generate series of "dharms" ... relatively "uncontaminated" by the composer's "ego." It was such a relief to stop making artworks carry that burden of "expression"! ... But ... I [do] allow my own emotions to influence my systematically generated work...: my choices of means, materials, &c., can't help being influenced by emotions, & I'd be foolish if I thought they weren't**

*–Jackson Mac Low, The L=A=N=G=U=A=G=E Book (p. 26-7)*



**computation with language  
doesn't belong to computers**



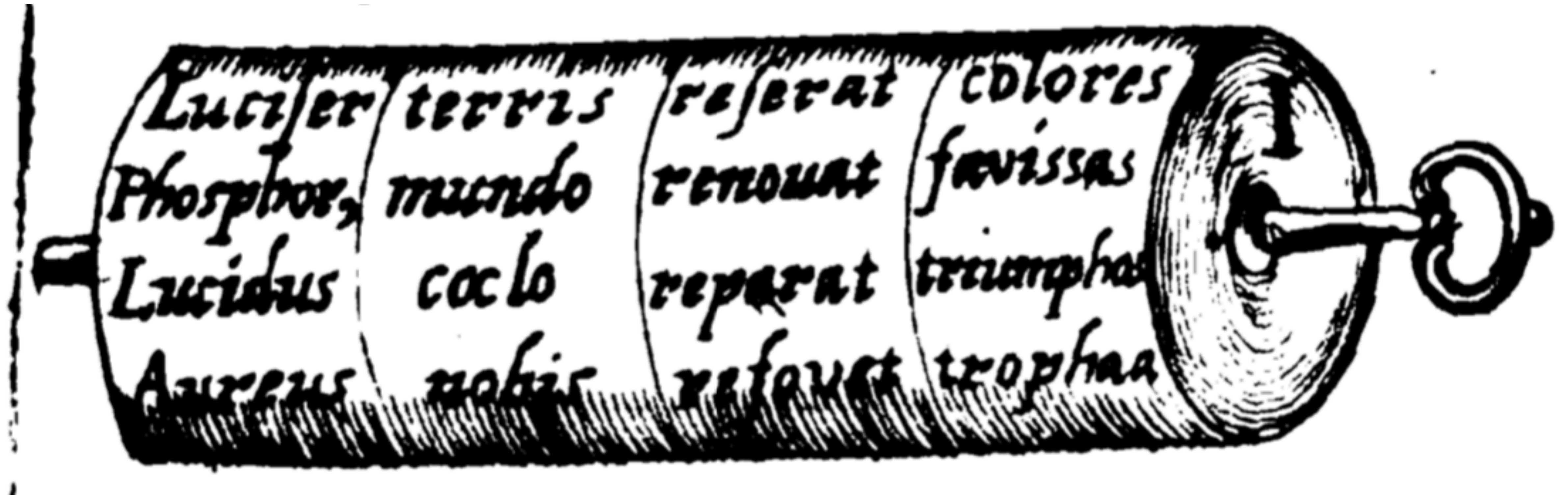
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伤嗟情家明葩荣志庭闹乱作人谗奸佞凶害我忠贞桑凶慈雍思恭基河  
惨叹中无镜纷为穹明难受消愿祸因所持滋极骄盈榆顽孝和淑自为隔  
怀怀伤君朗光谁终荣苟不义姬班女婕妤辞羣汉成薄漫休家贞记孝塞  
慕所路房客珠感誓城倾在戒后孽嬖赵氏飞燕实生景谗退远敦贞敬殊  
增离旷帟饰曜思穹荧忧炎盛兴渐至大伐用昭青青昭愚谦危节所是山  
忧经遐清华英多苍形未慎深虑微察远祸在防萌西滋蒙疑容持从梁  
心荒淫妄想感所钦岑幽岩峻嵯峨深渊重涯经网罗流光流电逝推生民  
堂妃闳飞衣谁迫何思情时形寒岁识凋松慙居叹如阳移陂施为抵差生  
空后中奋袞为相如感伤在芳贞物知终始旧独怀何潜西不何谁神无感  
惟自节能我容声将自孜孜君想颜丧改华容是为女贱曜日日激与通者  
思兴历不歌治同情宁孜孜梦仁贤别行士念谁贱鄙翳白无愤将上采悲  
咏风樊叹发观羽缠龙旗容衣诗情明显怨衰情时倾英殊衰殊身接非路  
和周楚长双华宫忧虎雕饰绣始璇玑图义年劳叹奇华年有志饰志葑长  
音南郑歌商流徵殷繁华曜壮颜无平苏氏理往忧岁异浮惟必心华惟下微  
摧伯女志兴荣伤患葆荣丽充端比作丽辞日思慕世异逝倏无一俯忧作已  
悲窈河遐硕翠感生曼曼丁冤诗风兴鹿鸣怀悲哀谁逝倏无一俯忧作已  
声窈广路人桀我艰是漫是何桑翳感孟宣伤感情者颓然盈体仰情者处  
发淑思透其藏情惟忧何艰生时盛昭业倾思永威我流若不忠容何成幽  
曲姿归迤颀蕤悲苦怀思苦我章徽恨微元悼叹威知沙驰亏离仪赏辞房  
秦王怀土眷旧乡身加兼愁悴少精神遐幽旷远离凤麟龙昭德怀圣皇人  
商游桑鸠扬仇伤荣身我乎集殃愆辜何因备尝苦辛当神飞文遗分归贱  
弦西翳双激好催君深日润侵愆思罪积怨其根难寻所明轻殊孤乖雁为  
激阶阴巢水悲容仁均物品育施生天地德贵平均匀专通身桀妾殊翔女  
楚步林燕清思发离滨汉之步飘飘离微隔乔木谁阴一感寄飭散声应有  
流东桃飞泉君叹殊心改者惑匿亲闻远离殊我同衾志精浮光离哀伤柔  
清廊休翔流长愁方禽伯在诚故遗旧废故君子惟新贞微云辉群悲春刚  
琴芳兰凋茂熙阳春墙面殊意感故新霜冰齐洁志清纯望谁思想怀所亲

《璇玑图》简体

蘇蕙, 璇玑图 (Sū Huì, Xuánjī Tú "Picture of the Turning Sphere"), 4th c. CE



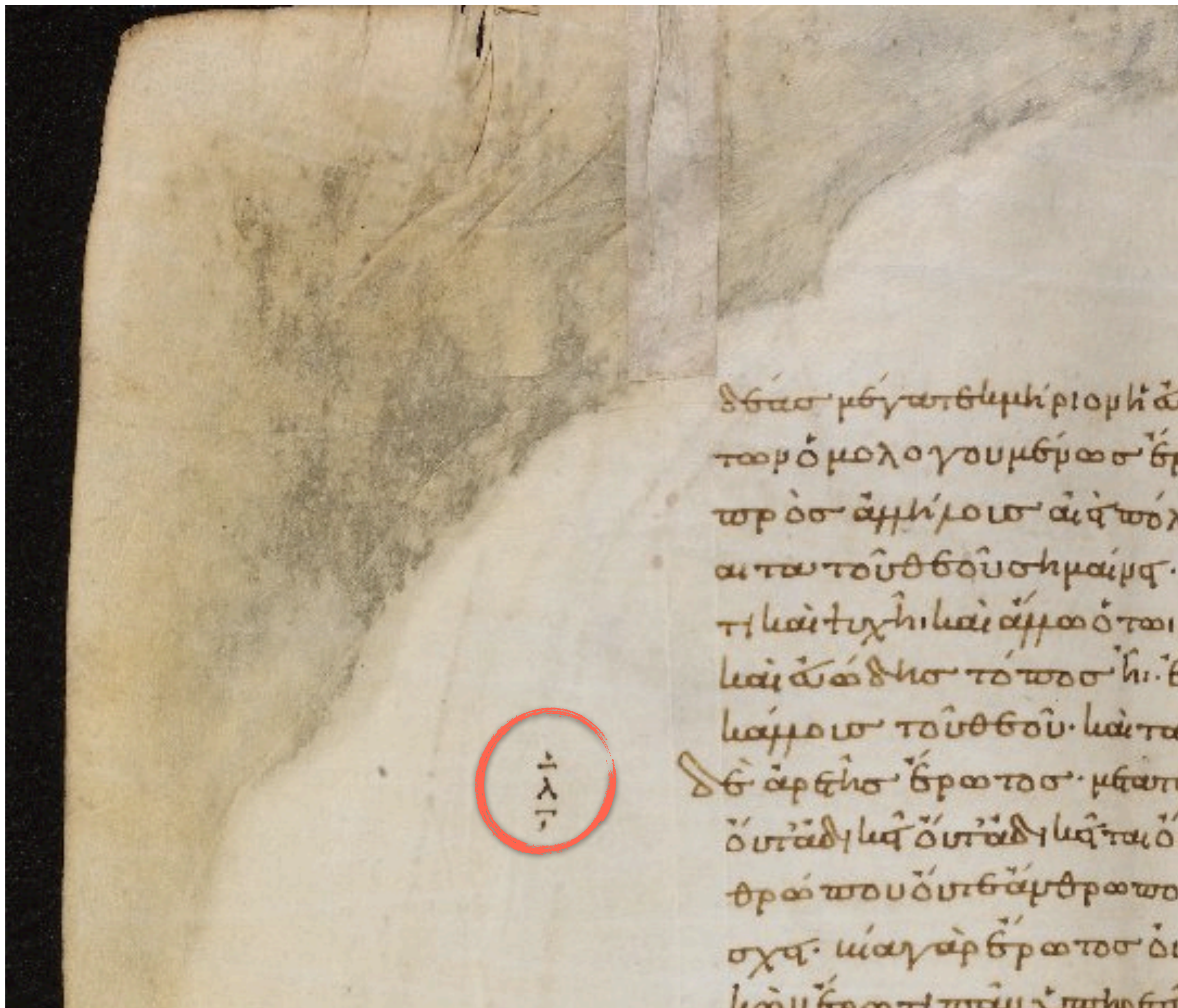
# Juan Caramuel y Lobkowitz



*Text-generating cylinder from the Metametrica (1663)*



# stichometry



From *stíkhos*, "a row of soldiers; a line of poetry" + *metry* ("measure").

"[I]n Greece the principle was to consider hexametric verses as units and to write them down in subsequent lines.... [This] principle of division... was also applied to Latin in ancient Rome. [...] Segmentation of text into formal, semantic (and later syntactic) units – not related to the physical data carrier – was at that time a great achievement and allowed future generations of philologists and grammarians to create the first real corpus and statistical tools, i.e. concordances and indexes."

Pawłowski, Adam. "Prolegomena to the History of Corpus and Quantitative Linguistics. Greek Antiquity." *Glottology*, vol. 1, no. 1, 2008, pp. 48–54.



# scribes and programmers: getting paid by the line

It is established by means of the celebrated edict of Diocletian (A. D. 301), which was a tariff of maximum prices for the Roman empire, that the pay of scribes was by the hundred lines... this assumed the fixity of the line, and would be altogether illusory upon any other hypothesis. [...] [I]n every case the measure is by verses, no distinction being made or imagined between prose and poetry.

Harris, J. Rendel. "Stichometry." *The American Journal of Philology*, vol. 4, no. 2, 1883, pp. 133–157.

IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, VOL. SE-9, NO. 6, NOVEMBER 1983

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## Software Function, Source Lines of Code, and Development Effort Prediction: A Software Science Validation

ALLAN J. ALBRECHT AND JOHN E. GAFFNEY, JR., MEMBER, IEEE

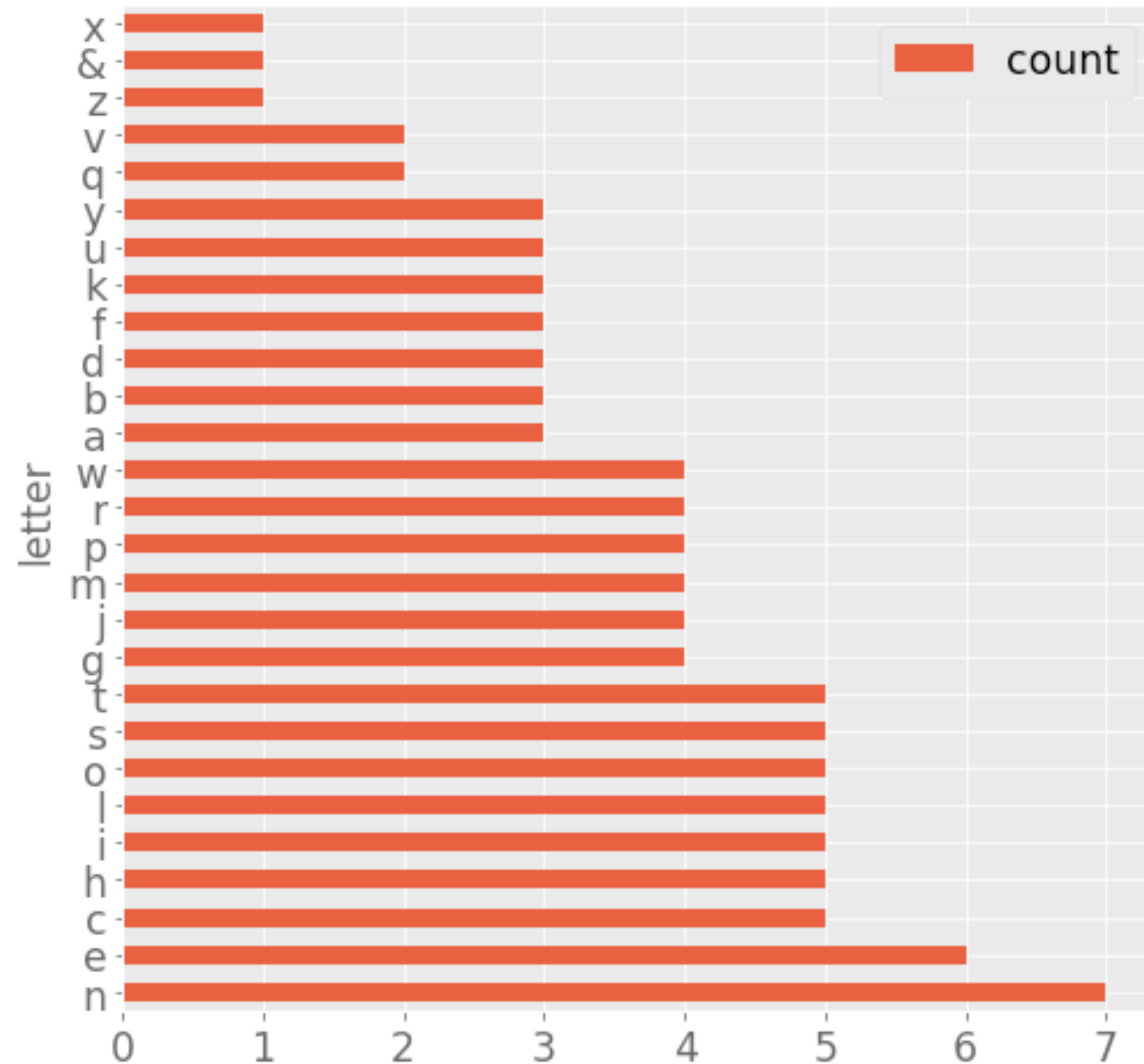
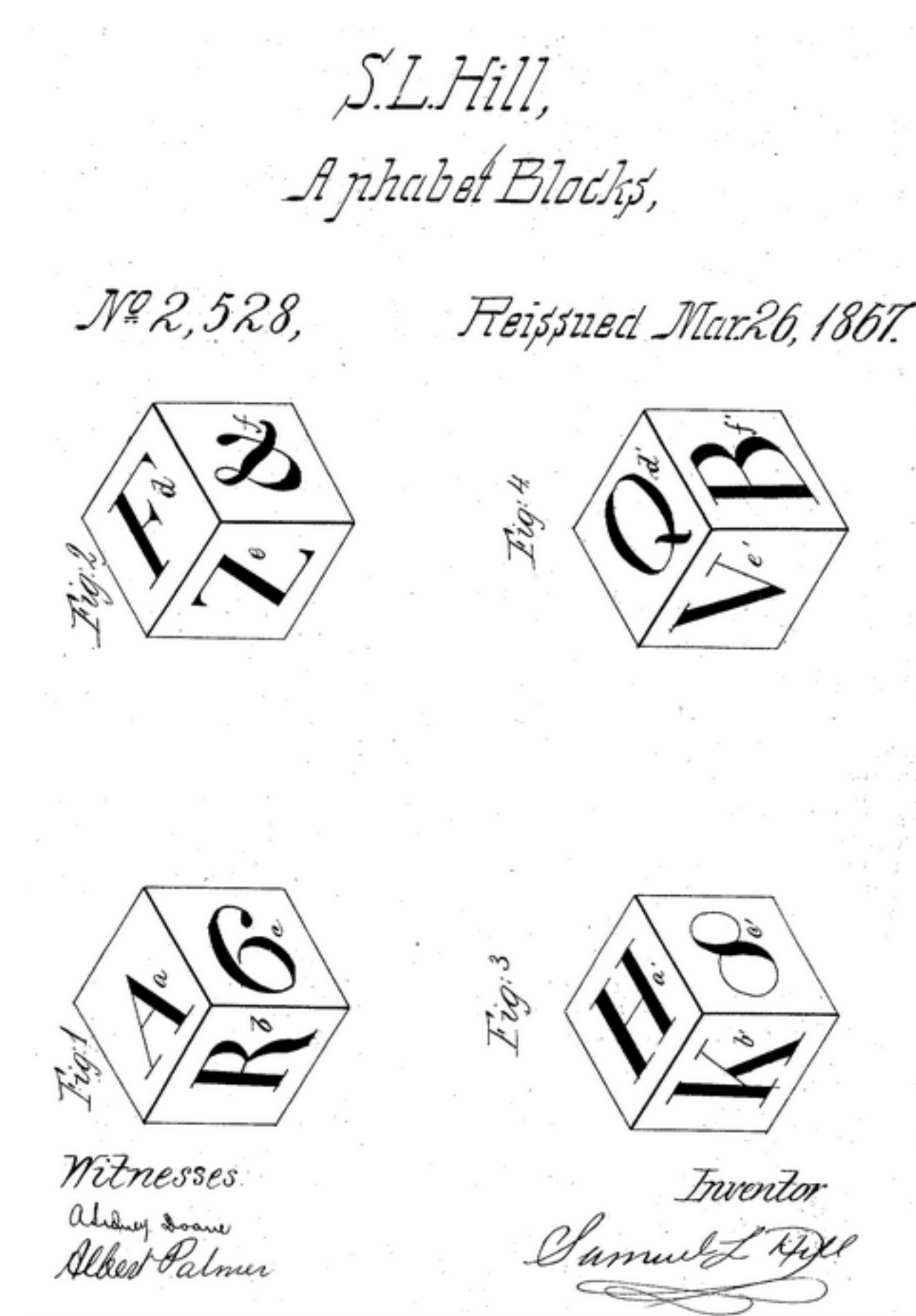
**Abstract**—One of the most important problems faced by software developers and users is the prediction of the size of a programming system and its development effort. As an alternative to "size," one might deal with a measure of the "function" that the software is to perform. Albrecht [1] has developed a methodology to estimate the amount of the "function" the software is to perform, in terms of the data it is to use (absorb) and to generate (produce). The "function" is quantified as "function points," essentially, a weighted sum of the numbers of "inputs," "outputs," master files," and "inquiries" pro-

numbers reflecting the relative value of the function to the user/customer. The weighted sum of the inputs and outputs is called "function points." Albrecht [1] states that the weights used were "determined by debate and trial." They are given in the section "Selection of Estimating Formulas."

The thesis of this work is that the amount of function to be provided by the application (program) can be estimated from

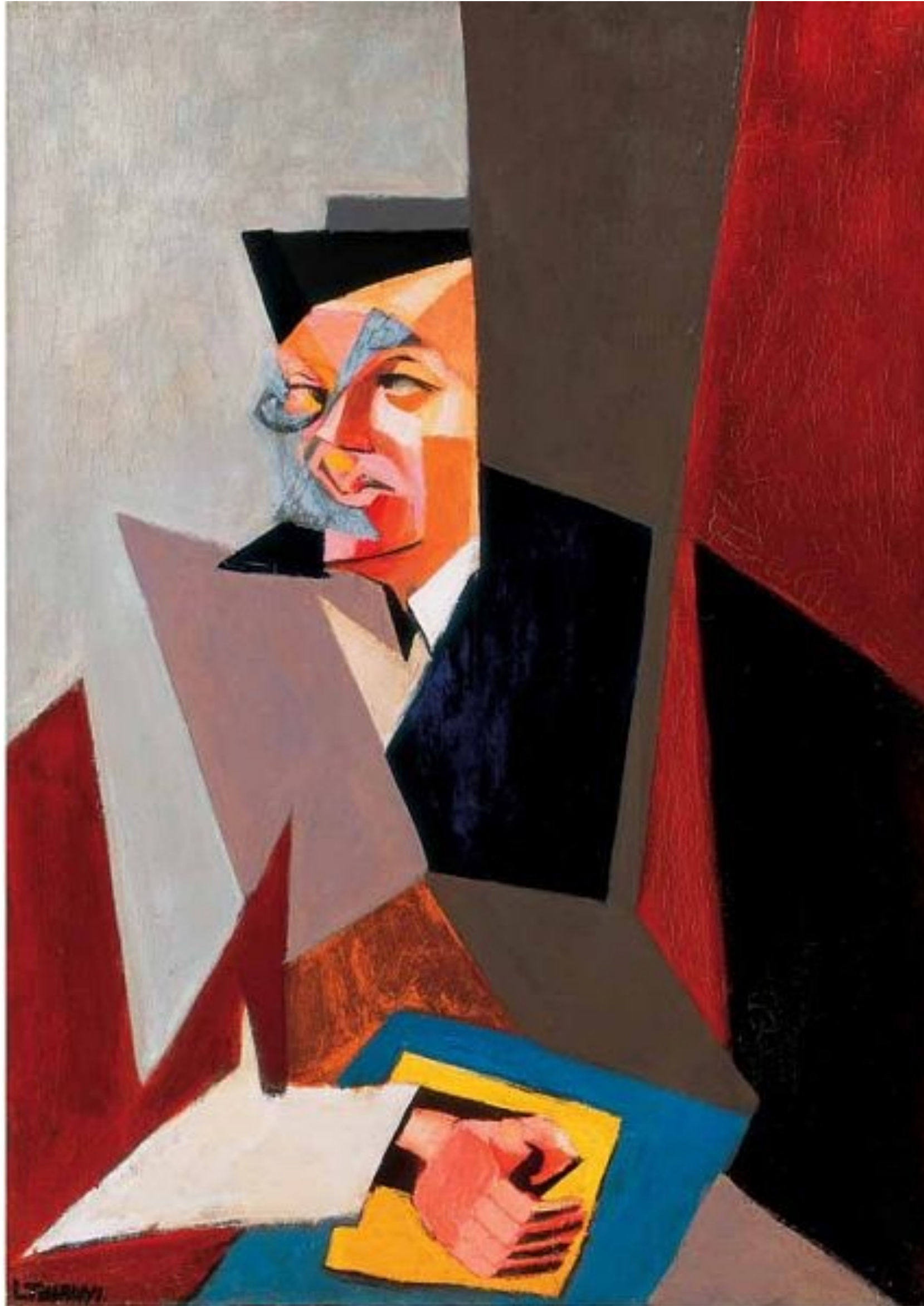


# S. L. Hill's Alphabet Blocks (1858)



For more on alphabet blocks, see Smith, Ernie. "The ABCs of Wooden Alphabet Blocks." Atlas Obscura, 23 May 2017, <http://www.atlasobscura.com/articles/history-alphabet-blocks>.





To make a Dadaist poem:

- Take a newspaper.
- Take a pair of scissors.
- Choose an article as long as the poem you want to make.
- Cut out the article.
- Then carefully cut out each of the words that make up this article and put them in a bag.
- Shake gently.
- Then take out each scrap, one after the other, in the order in which they left the bag.
- Copy conscientiously.
- The poem will resemble you.
- And here you are, an infinitely original writer, endowed with a sensibility that is charming yet beyond the understanding of the vulgar.

—Tristan Tzara (1920)



**“[P]resenting digital poetry as radically new or even procedurally modernist overemphasizes media technologies at the expense of... cyclically recurring elements and motives underlying and guiding the development of media culture [...]. What if... we broadened our investigation to combinatorial reading and writing practices across multiple material and aesthetic platforms?”**

*Trettien, Whitney Anne. Computers, Cut-Ups and Combinatorial Volveles: An Archaeology of Text-Generating Mechanisms. MIT, 2009, <http://whitneyannetrettien.com/thesis/>.*



the theory: computational writing emerges wherever literacy\* does



**politics of computational**  
***ostranenie***



**"Oh yes, the sentence. That's what we call it when  
we put someone in jail."**

*–Robert Creeley*

**"Language is not made to be believed but to be obeyed.... A rule of  
grammar is a power marker before it is a syntactical marker."**

*–Deleuze and Guattari, A Thousand Plateaus*

**"I was unspeakable, so I ran into the language of  
others."**

*–Kathy Acker*

**"There is no telling of this story; it must be told."**

*–M. NourbeSe Philip*



**why is "electronic" important?**



- speed and scale: texts can be composed from many other texts, very quickly
- new units (bytes, unicode code points, files, n-grams, TCP/IP packets, vectors, tweets...)
- digital text wears heterogenous authorship on its sleeve
- digital text is *linear*—one unit follows the next—and therefore *iterable*



# what the course doesn't cover

- typography and layout
- narrative
- interactivity



<http://rwet.decontextualize.com/>