Engineering Language:

Teaching Machines to Read and Write in the U.S. and Britain 1826-1968

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What processes are involved in conceiving of and representing verbal language as a computational problem?

Is it possible to document the discrete genealogies involved and, in the process, make them visible, legible, and accessible to non-Engineers?

Some Narrative Threads To Trace and Explore

automation

calculation

communication

representation

signification as cognitive and technical process

literacy education for humans and machines

Engineering Language:
Teaching Machines to Read and Write in the U.S. (1826 – 1968)

Seeking to understand how technologies of inscription, reproduction, and communication are related to definitions and applications of verbal language, this project documents and reflects on some key moments in a proposed history of instrumentalist conceptions of human communication practices.

Create a digital archive of key documents in a proposed history of instrumentalist conceptions of human communication practices

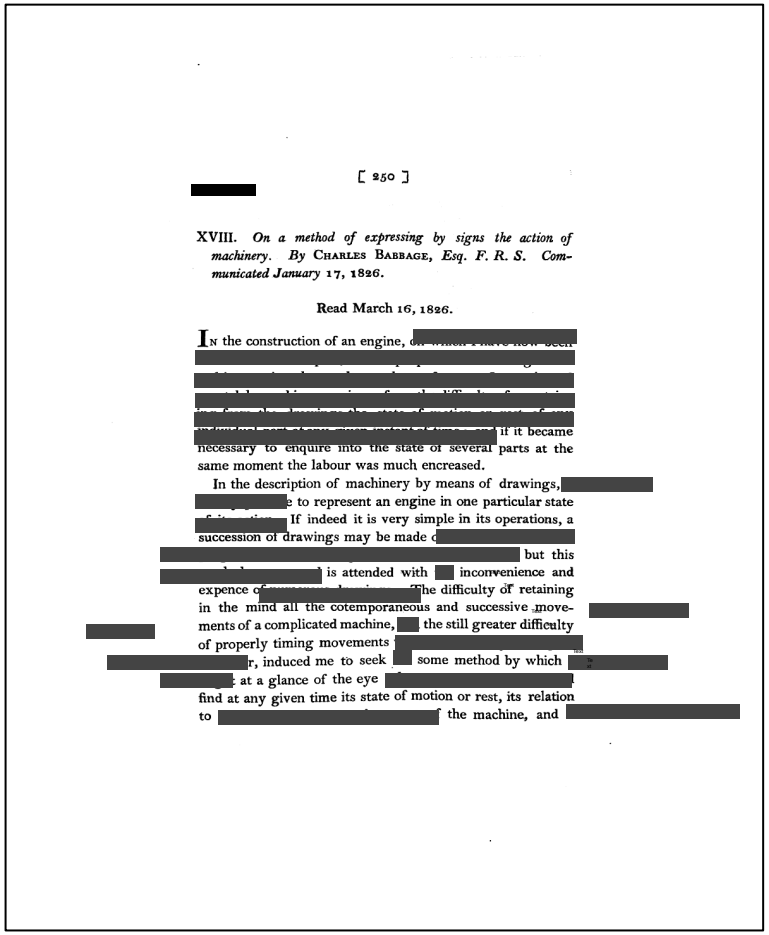
Create artifacts reflecting on this archive:

"Babbage Redacted, or How Do 'We' Assess the Value of Words?"

"Remediating Alphabetic Language: HMB's Visible Speech and the Conception and Use of Humans as Writing Instruments"

"Before the Byte, There Was the Word: Exploring the Provenance and Import of the Computer Word for Humans, for Digital Computers, and for Their Relations"

Babbage Redacted:
Or, How Do We Assess the "Value" of Words? (2018)



[250]

XVIII. *On a method of expressing by signs the action of machinery.* By CHARLES BABBAGE, *Esq. F. R. S. Communicated January* 17, 1826.

Read March 16, 1826.

IN the construction of an engine, [redacted] if it became necessary to enquire into the state of several parts at the same moment the labour was much encreased.

In the description of machinery by means of drawings, [redacted] to represent an engine in one particular state [redacted] If indeed it is very simple in its operations, a succession of drawings may be made [redacted] but this [redacted] is attended with [redacted] inconvenience and expence [redacted] The difficulty of retaining in the mind all the cotemporaneous and successive movements of a complicated machine, [redacted] the still greater difficulty of properly timing movements [redacted] r, induced me to seek [redacted] some method by which [redacted] at a glance of the eye [redacted] find at any given time its state of motion or rest, its relation to [redacted] the machine, and [redacted]

Writing Systems

Systems of Notation

Early Machine Languages

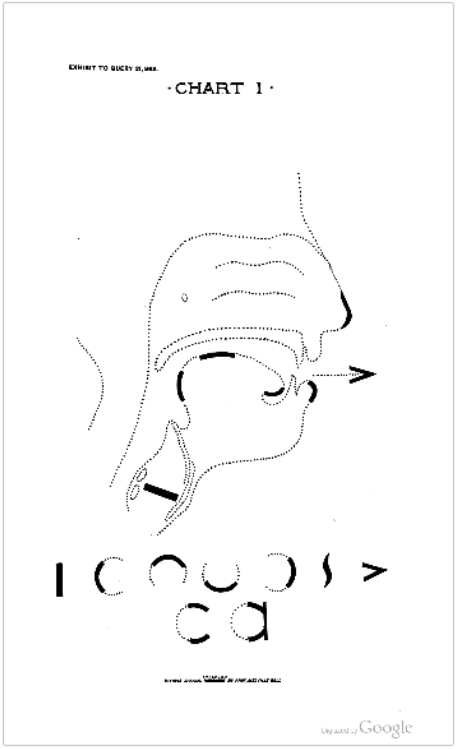
Mathematical Tables

Shorthand "Alphabets"

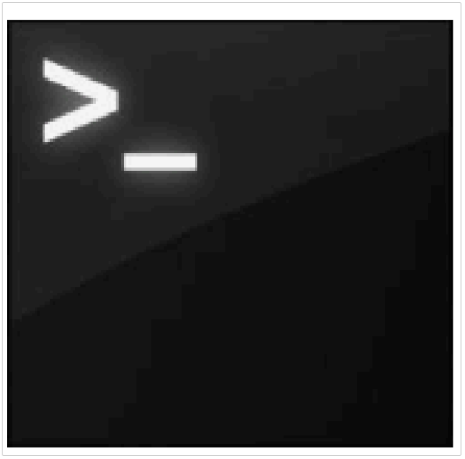
New Printing , i.e.,
Information and Communications Technologies

Re-Mediating Alphabetic Language:
Alexander Melville Bell's Visible Speech and the
Conception and Use of Humans as Writing Instruments (2019)

What if the reclining caret in the Unix command line can be in some way connected to a mark signifying the emission of breath accompanying the formation of a spoken word? What might that tell us about some of the many roles and functions of writing in the pasts, presents, and futures of computing machines?



Bell.Alexander.Melville.Visible.Speech.Charts.1888.jpg



Engineering.Language.Command.Line.Caret

Visible Speech Shorthand Alphabet (1888)

Before the Byte, There Was the Word:
Exploring the Provenance and Import of the "Computer Word" for Humans, for Digital Computers, and for Their Relations (2020)

Why Did They Call It a "Word"?

Why Did They Call It a Word?
[The "Rhetorical" Perspective]

1. Explain the complex memory and communication functions of a digital electronic computing machine in a basic though necessarily incomplete manner* to a wider audience
2. Emphasize that this data unit could not be broken up if it were to function as part of the human-machine and machine-machine communication processes
3. Address its dual functions and identities as sometimes an instruction (command) and sometimes a representation and expression of a machine readable sign (data unit)

Why Did They Call It a Word?
[The Technical/Conceptual Perspective]

Computation = communication + calculation

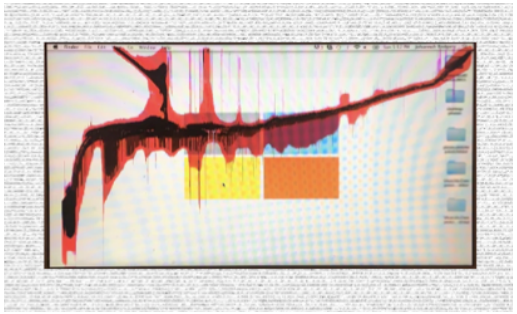
The automation of computation is enabled in part by:

1. Introduction and incorporation of tools and techniques of Cryptanalysis into automated calculating systems
2. Shift away from human readable systems of numeration, i.e., decimal to binary, and media, i.e., punch cards to electro-magnetic wires
3. Creation of new types of memory storage
4. Introduction of telegraphic systems and frameworks, which will manipulate binary pulses as "words" with syntactic and semantic characteristics

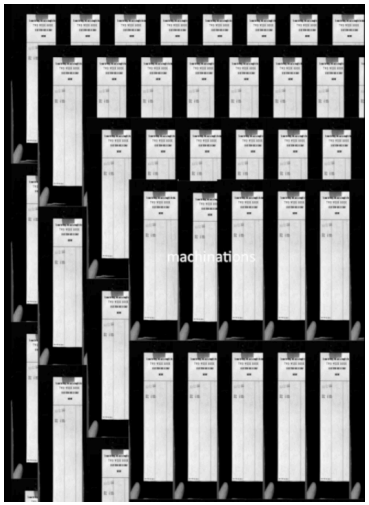
Reading and Writing With and For Machines: Creative and Critical Engagements (2015 – 2019)

Can Machines Read? A QR Code Alphabet (2018)

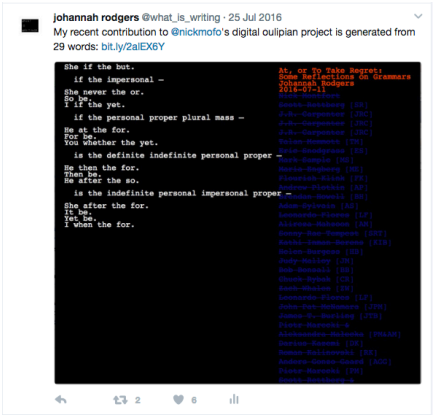
A New Take on Talking Pictures, , or 612 of 286,416 Assembly Code Instructions Describing This Image (2019)



Machinations (2017)



At, Or to Take Regret: Some Reflections on Grammars (2016)



Wealth Begins With Human Need: Remediating Chapter 1 of Marx's *Capital* (2015)

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