Positions Through Iterating: *Annotated Bibliography*

This project sits at the intersection of digital and physical media, languages and outputs, and aims to exploit both through the development of systematic approaches to design. I am interested in the idea of working with manual processes in a generative, system based way by exploring the practical and conceptual links between methods such as coding, weaving and letterpress. I aim to build a body of work that provides an interpretation of, and an investigation into, the power of language as a tactile entity and its inextricable link to the work of the hand; with a specific focus on textile-based crafts. How can I define digital and physical languages? What is the aesthetic value of code, and how can this be extrapolated from? How can I apply a generative, digital approach to traditional analogue methods?

Texts from the reading list:

(a) Goldsmith, K. (2011) *Uncreative Writing: Managing Language in the Digital Age.* Columbia University Press: New York. Pp. 14 - 33

(b) ***"Reading aloud is an act of decoding. Taken one step further, the act of reading itself is an act of decoding, deciphering, and decryption. Computer code, made up of numbers—1s and 0s— can't possibly have any literary or aesthetic value. Or can it?"*** (pp. 19)

(c) Goldsmith's essay *Revenge of the Text* explores the underlying material power and properties of language within digital visual media. In the context of my project, I am interested in the exploration of the "aesthetic value" that functional computational languages have. Often just perceived as "garbled code" (pp. 23), the thousands of symbols, characters and lines that comprise image source codes have a "textuality" (pp. 32) and, arguably, a *texturality* that is meaningful in its nonsense. In this way, this reference pushes me to think of ways I can *de*code, *re*code and *en*code visual and physical media through both digital and physical means. For example, using Goldsmith's method of file conversion and manipulation (.jpg > .txt > [interfere with code] > .jpg), we see the power of language to disrupt a system and structure that has a literal visual translation, with the effects only revealing themselves upon reopening the file. How can I replicate this physically? What happens when I undertake processes of retranslating and recoding, as well as removing, censoring and doctoring structures, existing languages and codes to yield visual results?

(a) Tenen, D. (2017) *Literature Down to a Pixel.* Stanford University Press: California. pp. 165-195

(b) ***"For someone armed with a laser cutter and a microscope, the cake is, on a spectrum, a near perfect digital medium. Alternatively, it is an analog medium for those who eat with their hands."*** (pp. 190)

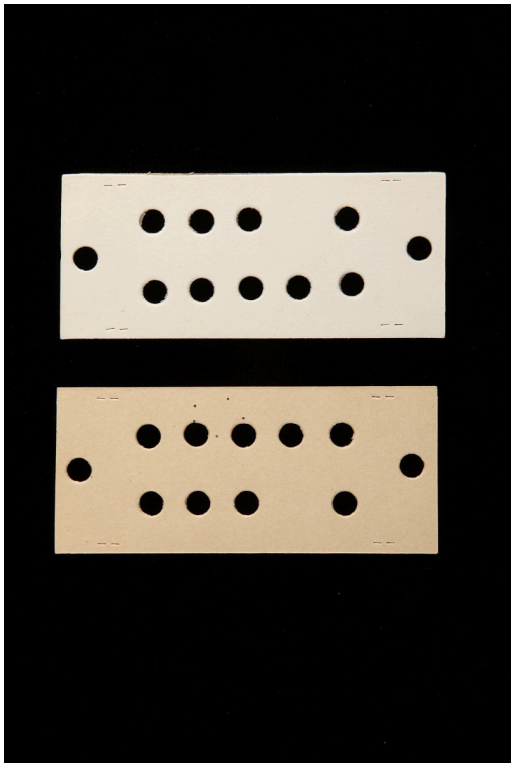
(c) Tenen's text *Literature Down to a Pixel* redefines the common perceptions of what we consider to be digital (i.e. screen-based) or analogue (non screen-based) processes. His argument explores 'digital' to mean any process whereby an externally imposed structure acts on an item or method, in order that the format becomes reproducible. So, digital = generative = yielding results. This approach pushed me to think about ideas around analogue generative processes, and the way in which I might work digitally (systematically, logically) to produce analogue (individual, inimitable) results. Can a system create originality? Additionally, to take his cake analogy, Tenen suggests that depending on the user, an item can be digital *or* analogue per its mode of reception. If we think of screen based languages, or physical embodiments of digital codes (e.g. computer code or a QR code), humans and machines interact, decode and translate them in different ways; taking different meanings from their constituent parts. I am interested in this intersection between the

human and the digital, and the ways in which digital language can be explored and exploited through physical, tangible processes such as printmaking, weaving or embroidery.

Related by topic:

(a) Smithsonian (2025) *Punch Cards.* Available at: https://www.si.edu/spotlight/punch-cards (Accessed: 29 Apr 2025)

(b) Left: Jacquard mechanism attached to an earlier loom. The mechanism allowed for the reading or processing of punched cards to make weaving more replicable and efficient, and was an early form of data processing. Right: Punched cards in the style of Charles Babbage and Ada Lovelace.



(c) The Jacquard loom, or Jacquard mechanism, marked a huge shift in the history of weaving practices. As a consequence of the industrial age, mechanised weaving shifted the focus away from human artistry and skill towards efficiency and greater yields. An important byproduct of this shift was the development of a language that machines could read: code. In my research on punch cards, I was intrigued by the interrelation and overlap between the history of textiles and computing. Punch cards themselves are interesting ephemera, and were admired by Babbage and Lovelace in the development of their analytical engine, with Lovelace noting that "…the Analytical Engine weaves algebraical patterns just as the Jacquard-loom weaves flowers and leaves"[1] This was the beginning of physical computing. This lead me to think about the tactility of language, and the aesthetic value of code; particularly in the early days of data processing and computation. I wanted to test the cyclical nature of translation, and how far this re-translation, or re-coding, could be pushed before it loses significance, function and meaning. To translate a visual code (like the punch cards) into binary, for example, gives different significance to its units. From here, it can be infinitely translated into different codes, languages, and symbols. What are the results when we intertwine these codes into the fabric of other systems? How can I use language to interfere and manipulate both digital and physical structures, and what are the ways in which these results can be made tangible?

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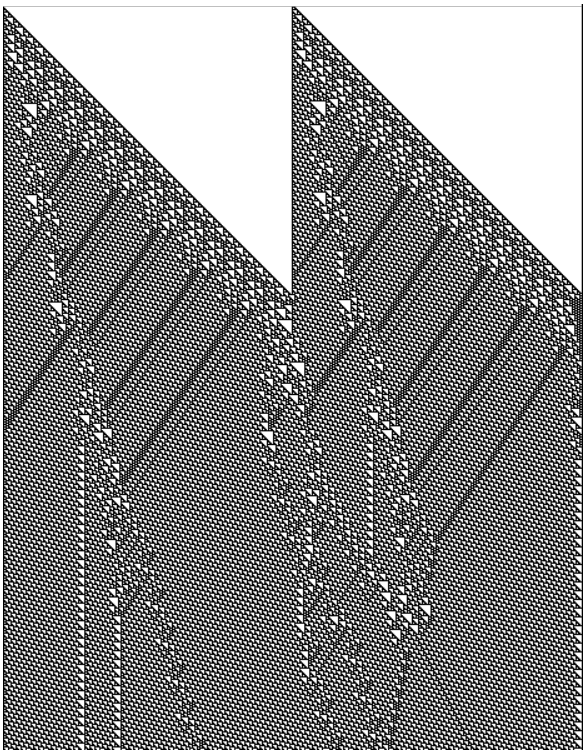
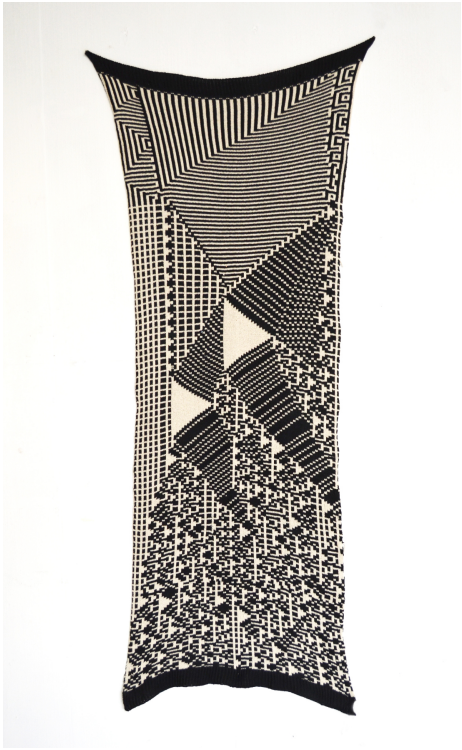
[1]. Smith, R. (2024) *The semantics of electronics: How electronic components could acquire semantic content. Available at:* https://rodsmith.nz/ *[Accessed: 2 May 2025]*

Related by method / medium:

(a) Claire Williams (2015) *Data Knits.* Available at: http://www.xxx-clairewilliams-xxx.com/projets/data-knits/ (Accessed: 29 Apr 2025)

(b) Images from Data Knits by Claire Williams, which uses a hacked knitting machine to knit lines of code into textile hangings.





(c) The knitted wall hangings that Williams produces are the results of a hacked knitting machine that uses code based on the mathematical and computational models of cellular automata. The links with my project are clear; Williams is exploring the well trodden paths connecting textile and technology, just as I am. Her projects explore the fault lines of technology and where it can be exploited to yield tactile results. I am interested in not only the similarities shared between our projects in process and theme, but also in the rhythms they share with screen-bound code that is translated for us to form what we see on our computers. Lines of fibre build up like the lines of loading computer code, or an early Internet Explorer loading screen slowly adding to itself. The images reveal themselves over time as code is translated through yarn. From here, I wonder how I can mimic technological processes, their cadences and their habits. How can I process data *digitally* through my analogue, human self? Digital, coming from the latin *digitus,* meaning 'finger, toe'. What does it mean, then, to embody the digital through craft? Weaving, much like a knitting machine, works by continually adding interlaced lines of fibre to a grid. By applying different systems to a hand-woven tapestry can I become the mediator, interpreter, that translates language into fibre?

Demonstrates a critical position:

(a) Albers, A., Fox-Weber, N,. Cirauqui, M., Smith, T. (2018) *On Weaving: New Expanded Edition.* Princeton, NJ: Princeton University Press.

(b) "We touch things to assure ourselves of reality. We touch the objects of our love. We touch the things we form. Our tactile experiences are elemental. If we reduce their

range, as we do when we reduce the necessity to form things ourselves, we grow lopsided." (pp. 62)

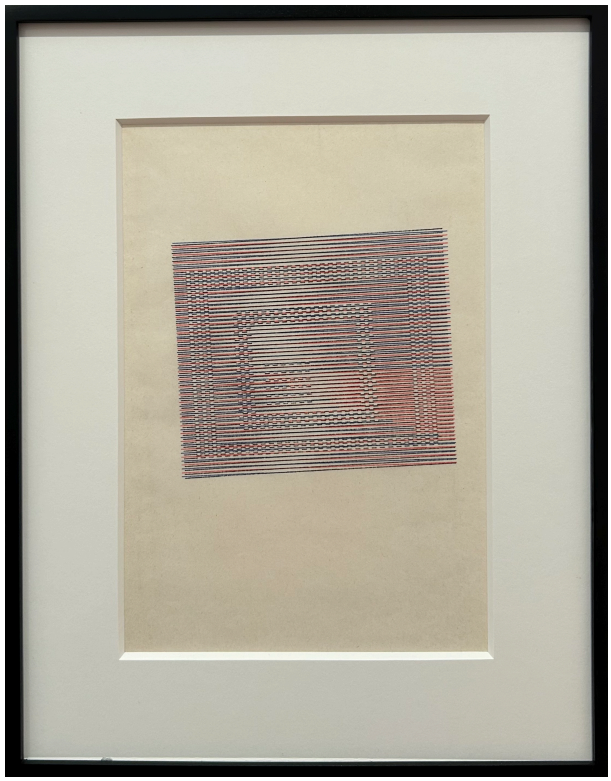
"Drawing or print that shows hatching or stippling, rippled or curled lines, etc., and thus has a structural appearance, can be used to produce, if not actual tactile surfaces, the illusion of them. The tactile-textile illusions produced on the typewriter may illustrate this point. These varied experiments in articulation are to be understood not as an end in themselves but merely as a help to us in gaining new terms in the vocabulary of tactile language." (pp. 65)

(c) Anni Albers' critical essays in her book *On Weaving* provide key insight into the practice of weaving from a structural, historical and practical point of view. In her essay *Tactile Sensibility* (pp. 62–25) she encourages readers to "revitalise" (pp. 64) the sense of touch by interacting with foreign, ephemeral and natural objects and translating this through the loom. She also posits that works on paper convey tactility, and that language, when exploited, is textural in its structure. This leads me to consider ideas around concrete poetry and typewriter experiments, like those of Dom Sylvester Houédard. When language is used to create an image, what happens to the meaning of its constituent parts? The rigidity of a grid system, straight lines and perpendicular angles are all commonalities between both (machine) written text and (machine) woven materials. How could I weave letters on a page? What would the meaning of the letters be in their new context, and would they function as image or code?

Wild card:

(a) *Breaking Lines* (2025) [Exhibition] Estorick Collection, London, United Kingdom. 15 January 2025 - 11 May 2025.

(b) ***Left: Italian Futurist publication Parole in Liberta, featuring poems by Filippo Tommaso Marinetti; a key architect of experimental poetry. Right: concrete typewriter poem by Dom Sylvester Houédard.***



(c) The exhibition *Breaking Lines* charts the early stages of the Italian Futurist movement and the development of concrete poetry through some of its key proponents, like Dom Sylvester Houédard. Seeing the pieces in the exhibition pushed me to think of the tactility within these

works. Beyond the surface qualities of the paper they are printed on, the processes used to create these works are themselves tactile, too. Letterpress, an inherently manual printmaking method, uses a system of modular units that work together to set type. These units, although not visible, are themselves a type of code. Though it depends so firmly on the work of the hand, I would be interested to develop a systematic approach to using this process in a *generative* way; meaning, how can I approach a manual process using a digital modality? What is the significance of a digital language when made tangible? Can I use letterpress to draw together themes around the tactility of language, textural letters and code-making? Similarly, I would be interested to explore the aesthetics of code through typewriter poetry. With Albers using the process as a form of proto-draft notation for weaving, and Houédard using it to construct his visual poems, I would be interested to investigate the meaning of these visuals and the characters therein. What happens to the significance of these characters when I translate them through different media? How can I apply a system to a typewriter to write code?