Gerry Smith Barcode Poems: reductive poetic forms and electronic literature

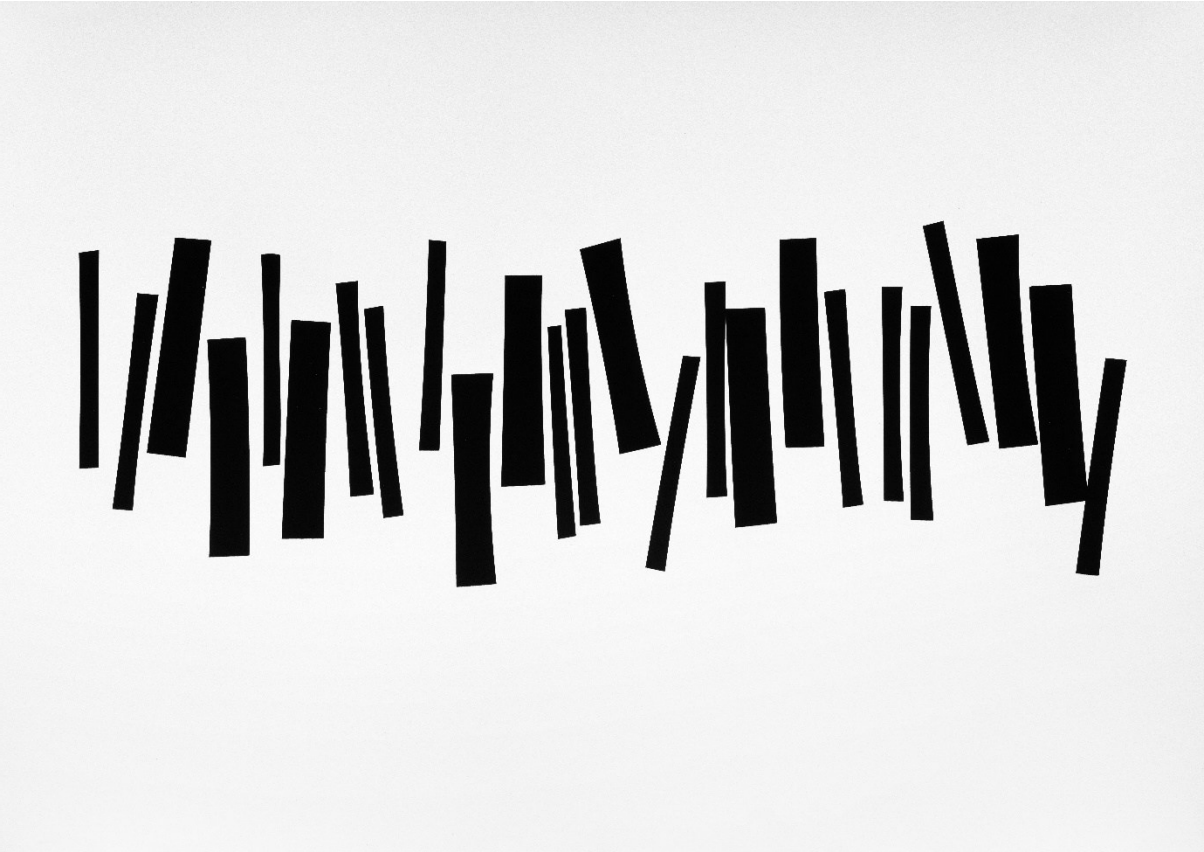

Figure 1 G.Smith (2025) *25 Lines Arranged Accordingly (after Jean Hans Arp)*

Introduction

The once vertical lines of a barcode are scattered over their ground, but the image remains machine readable; when scanned it reads 'ARP'. For the most part. Occasionally a scanning will misread the image (e.g. as 'AHP') as the lines are now spread out to the point of instability and its signal begins to fail.[1]

The image above is from **Barcode Poems** (2026), a collection of visual poems produced as prints (2024/25) which continue my experiments with reductive forms. For thirty years or so I have worked primarily with texts, including a considerable body of reductive poetic works (discussed below). Most of my work has been composed under self-imposed constraints, a method of working

[1] G.Smith *25 Lines Arranged Accordingly (after Jean (Hans) Arp)* (2025). First exhibited at Summerhall Arts Group Show, Edinburgh, 2026.

inspired by the combinatorial literature of OuLiPo writers such as Raymond Queneau, François Le Lionnais and Georges Perec.

These works are also examples of electronic literature, defined as "works with an important literary aspect that takes advantage of the capabilities and contexts provided by the stand-alone or networked computer" (Electronic Literature Organization, n.d.)

Reductive Poetic Forms

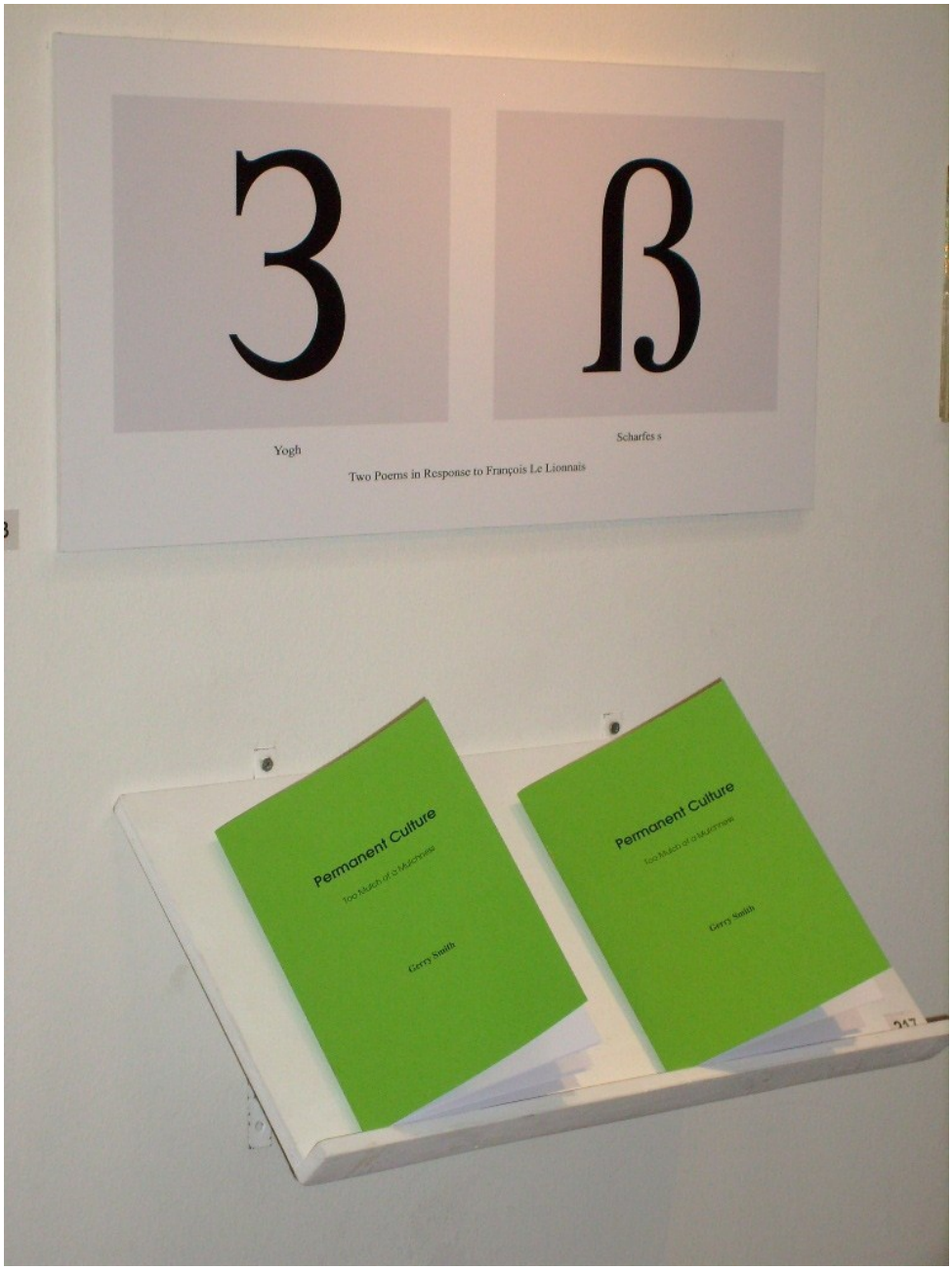

Figure 2 G.Smith (2008) *Two Poems in Response to François Le Lionnais*

In 2008, I fell down the rabbit hole of reductive poetic forms when I came across François Le Lionnais' **Three Cases of Pushing Things to the Limit** (1961) which calls for the creation of 'single word poems' (see also Ian Hamilton Finlay), 'single letter poems' and 'poems based on punctuation' (Mathews and Brotchie, 2005: 177-178). One of my earliest attempts – **Two Poems in Response to François Le Lionnais** (2008) – put forward the Scot's Yogh and German Eszett to counter arguments about the 'complete' set of 26 'Roman' letters (see Mathews and Brotchie, 2005: 178).

More works followed at various scales, including texts, sound-pieces and computer animations. Many have been accepted for SSA exhibitions over the years, including: **12 Haikuisations** (2011) – each a longer narrative condensed into two sentences; **Genome K. Genomics: a scientific approach to Jerome's *Three Men in a Boat*** (2018)- a reduction of the novel to a DNA string; **Horizontal Hold (Golden Spiral)** (2019) an animated televisual glitch, and; **Fifteen Full Stops for Jean (Hans) Arp** (2022) - a poem composed of punctuation marks.

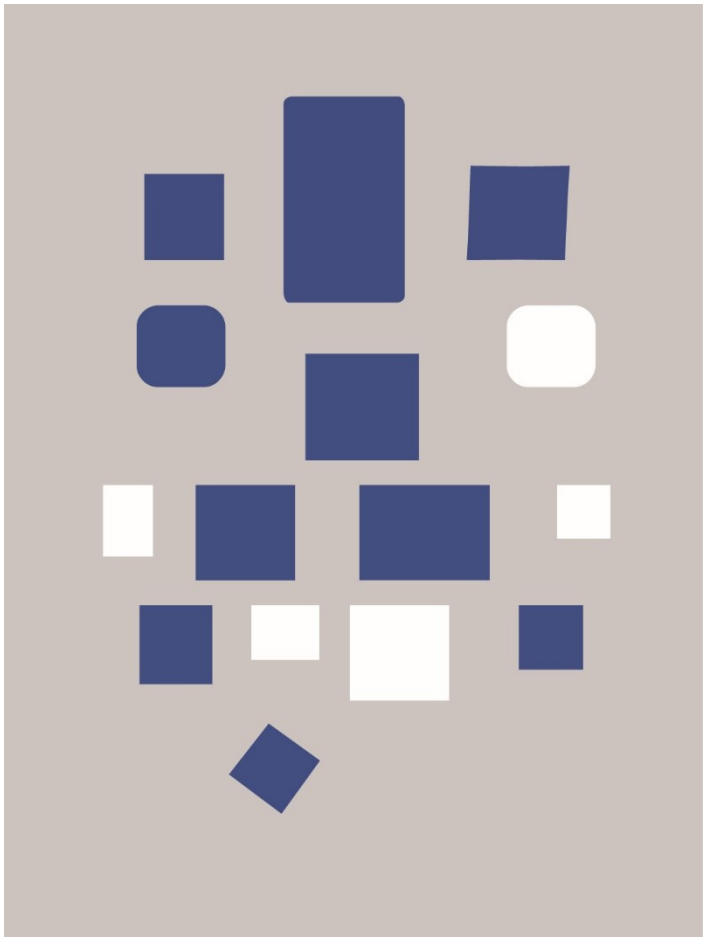

Figure 3 G.Smith (2022) *Fifteen Full Stops for Jean (Hans) Arp*

Electronic Literature and Barcode Poems

In 2024, after seeing a code offset on a cardboard box I began researching QR Codes. This research quickly took a detour when I discovered Code 39 barcodes,[2] and soon I had what seemed like an ever-expanding number of barcode poems.

Some of my first electronic literature work used QR Codes: the **Thaw** (2012) installations used them as an alternative to the main sound projection, and in **Rauschen**[3] (2015) the QR Code provided access to a sound-piece of brown, pink and white noise.

It started with **Noise** (2011) – a digital update of a flip-book animation[4]. This was my attempt to represent the potential loss of meaning caused by excluding 'noise' when designating 'signal'. I had not heard of electronic literature, but my supervisor had and so the journey began.[5] **Noise** uses an executable program and is therefore an example of the 'codework' discussed below.

Figure 4 G.Smith (2011) *Noise* (detail)

[2] Barcodes come in a variety of formats - common examples are Code 39 and Universal Product Code (UPC).

[3] Initially composed in 2012, but not exhibited until this version was included in *Reverting To Type* (2015) at Interview Room 11, 38 Castle Terrace, Edinburgh.

[4] Leonardo Flores (2013) gives a succinct account of this piece.

[5] A case of beginner's luck here, as *Noise* was later included in the ELMCIP Anthology of European Electronic Literature (2012).

Barcode Poems continues my experiments with apparently limited materials. Most of the poems use real barcodes and are therefore machine readable – using a QR Code/Barcode Scanner app. Most are homages to particular artists or make reference to rainfall - an online search for 'barcode + umbrella' will explain this link.[6] The booklet concludes with a QR Code linked to notes on the poems.

Figure 5 G.Smith (2024) *For Seiichi Niikuni*

The earliest poems are mostly mimetic, building upon the barcode's form in the homages to artists using minimal forms or playing upon the barcode's 'rainfall' pattern. **For Seiichi Niikuni** (2024) – with its reference to his concrete poem **Ama/Rain** (1966) – manages to do both.

The later poems tend to be more ludic, playing around with the code's form itself. I found numerous ways of doing so, for example by simply flipping the barcode over (**Raining Sideways** 2025) or using forward slashes instead of vertical lines (**For Lucio Fontana** 2025). Perhaps most satisfying was **For Bridget** (2025). Given her work, a Bridget Riley barcode is hardly

[6] **For Seiichi Niikuni** (2024) allowed me to bring rainfall in as a subject for depiction in the **Barcode Poems**. It was soon followed by **Smirr, Raining Sideways** and the watery downpour of the **Yoro Waterfall** collage. A trickle compared to the deluge of **57 Varieties of Rain** (2026).

surprising. I used one of her online pencil drawings to create a barcode she might have come up with by applying the pattern to a standard Code 128.

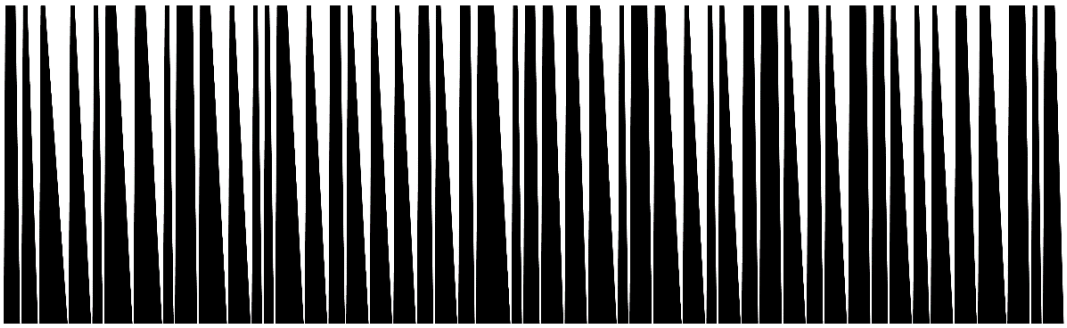

Figure 6 G.Smith (2025) *For Bridget*

The barcodes are mostly black on white, but **Smirr** (2024) and **RGB** (2025) were the earliest deviations from this norm. **Smirr** gave me the opportunity to render the code inoperable. A smirr is fine drifting, almost smoke-like, rain, so it makes sense to depict it in a faint grey. However, the reduction in contrast makes the image unreadable when scanned. The colour-coding in **RGB** shows how the barcode is constructed - the black sections are both the character of '*', which functions as the start and stop symbol for Code 39 barcodes.

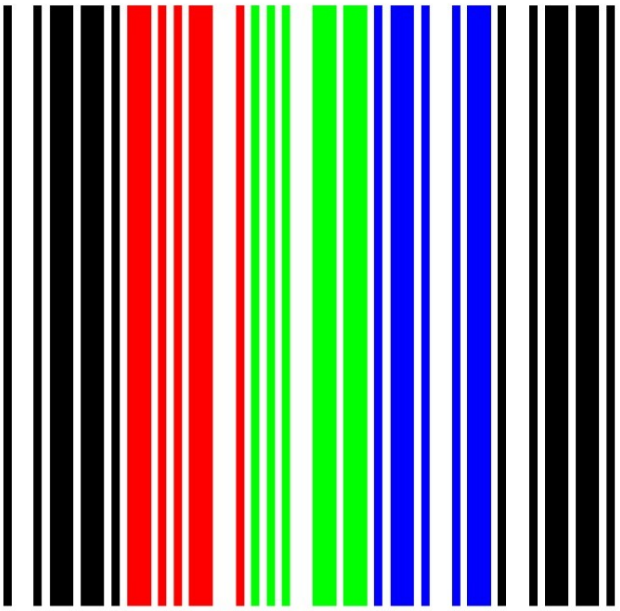

Figure 7 G.Smith (2025) *RGB*

Codeworks and Combinatorial Literature

The barcode poems are also related to codeworks (such as **Noise)**. According to Alan Sondheim the term 'codework' describes

> productions that portray "the computer stirring into the text." The impetus… is to appropriate computer language for uses outside of writing a program (Funkhouser, 2007: 257).

Whilst the term generally refers to digital poetry, Funkhouser (2007) identifies a 'pre-history', much of it originating from the concrete poetry movement. Amongst these precursors was Edwin Morgan whose **Computer's First Birthday Card** (1968) was "the first poem that I know of that repurposes computer language for creative purposes in print" (Funkhouser, 2007: 259). Morgan referred to such works as simulated computer poems (aka code poetry).

This may seem like splitting hairs, but strictly speaking codeworks are digitally executable poems whilst code poetry simply mimics or simulates

computers. Technically, my barcode poems are code poetry because they are passive data (text), not active code (executable program). However, whilst acknowledging the use of 'code work' in its 'purest form', N. Katherine Hayles (2008: 21) also notes its use applied to

> creoles using "broken code," code that cannot actually be executed but that uses programming punctuation and expressions… work enact[ing] a trading zone in which human-only language and machine-readable code performed as interpenetrating linguistic realms.

So, it seems up for debate as to whether codeworks and code poetry can be used as interchangeable terms.

Funkhouser notes the role played by the international concrete poetry movement in the pre-history of digital poetry. There is a similar connection between OuLiPo's combinatorial literature and the development of computer poetry. The philosopher Max Bense - and the Stuttgart School and the Saarbrücken set who adopted his ideas – had a major influence on the development of computer-generated electronic literature. Bense was aware of the OuLipo's research and unsuccessfully approached the Parisian group. The constraints and mathematical concepts of the Oulipo's combinatorial experiments had much in common with the stochastic and algorithmic text generation of Bense's followers: Perec's biographer has described the Saarbrücken group as 'OuLiPo-an-der-Saar' (Bellos, 1995: 351). The OuLiPo and its German counterparts had a similar way of seeing things, so it is not surprising that there are commonalities between the movements and forms they helped to create.

Machine Unreadable Works

Smirr had insufficient contrast between image and ground for a scanner to read it. It was a functional barcode, but was not machine readable. However, my two historical study pieces are not functional bar codes.

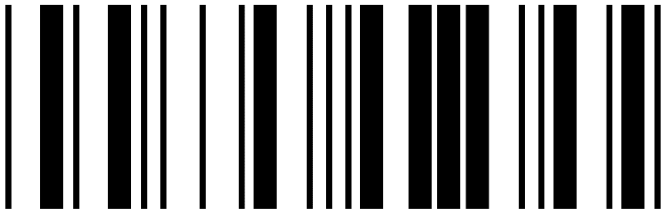

Figure 8 G.Smith (2025) *Endeavour (Historical Study No.1)*

With **Endeavour (Historical Study No.1)** (2025) the barcode looks similar to others around it. However, the image is a line of morse code where the dots and dashes have been pulled down to form vertical lines mimicking those of a barcode. N.J. Woodland – one of the barcode's inventors – claimed that he came up with the idea whilst drawing out a line of morse code in the sand.

Figure 9 G.Smith (2025) ***Yoro Waterfall (Historical Study No.2)***

Yoro Waterfall (Historical Study No.2) (2025) is a collage referencing a universal product code (UPC) barcode. Whilst not machine readable, it is still encoded as its numbers directly correspond to the letter order of the alphabet, spelling out H-O-K-U-S-A-I.

As for the original print, once you see the barcode in his **Yoro Waterfall in Mino Province** (c.1833) it is very difficult to unsee it. This places Hokusai firmly in the camp of the anticipatory plagiarists.

Finally, there is the **Instruction Piece (after Sol LeWitt**) which is not a barcode but three pages of text instructing the reader on how to complete this work. It is clearly not machine readable, but a barcode which remains to be realised. With this piece, I sought to make a work in which the reader could actively participate. Also, for a text-based artist, it seemed oddly appropriate to close this collection with a visible block of readable text instead of a barcode – written lines moving left to right across the page rather than straight lines drawn from top to bottom.

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