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**UNIVERSITY OF
PLYMOUTH**

**DIAGRAMS OF DISTURBANCE:
CONCEPTUAL DIAGRAMS AND
THE PRODUCTION OF A PERSONAL DIAGRAM POETRY**

by

RUSSELL EVANS

A thesis submitted to the University of Plymouth
in partial fulfilment for the degree of

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Author's Declaration

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Doctoral College Quality Sub-Committee. Work submitted for this research degree at the University of Plymouth has not formed part of any other degree either at the University of Plymouth or at another establishment.

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Signed

A handwritten signature in black ink, appearing to be 'A. M.', written in a cursive style.

Date: June 2022

Abstract:

Russell Evans

Title:

Diagrams of Disturbance: conceptual diagrams and the production of a personal diagram poetry.

This thesis is a pursuit of a personal diagram poetry, with a submission of part creative work, part critical exploration of selected diagram poetry over the past 50 years. I examine my own work and that of pioneering diagram poet Jim Rosenberg as variations of the conceptual diagram, and explore wider examples in the work of contemporary visual poets, arriving at a diagrammatics that creates systems of thought from modalities of materiality, spatiality and iconography.

I follow Foucault and Deleuze's pursuit of the diagram as a paradigmatic system, tracing its properties and potentialities in the social field but extract my own version of it, arising from exploration of the philosophical roots of the diagram. I apply DeLanda's realist critique of the diagram, moving it towards the concept of the *assemblage* and positioning the diagram as an episode of relational interactions that affect surroundings rather than statically record them. Both text and icon as language systems are probed as structures and as signifiers through close application of post-structuralism as the most rigorous interrogation of language's structures.

The resulting creative work assumes a position in the gap between the textual and the visual to seek Drucker's 'semantic chords' in a retinal-cognitive collusion of word and image. I merge the visual exteriority of classifications, visual iconography, and associated graphic language, with the interiority of a personal vocabulary, mediated through what I term 'diagrams of disturbance' which seek to destabilise cognition with both the form they take and their challenging subject matter.

I use models from the hard sciences to examine the abstract properties of the diagram, while seeking a common ground between word and icon in cognitive linguistics of Lakoff, and seeking underlying structures of diagram poetry in the application of information theory. Arising from the competing elements of word and icon the two halves of the research emerge as both a development of my own diagram poetry and a critical inquiry into diagram poetry as a form.

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Introduction

New Visual Poetry is here, declared Mary Ellen Solt at the end of her influential survey of Concrete Poetry in 1968¹. Coming fifty years after the experimental collisions of word and image in Futurism, Apollinaire and others, Solt declared a peace of sorts between text and icon, effectively asking for a bargain from both: poets who work with images should take up the challenge of fully remaking language through art; and artists who work with text should allow an access-all-areas approach for words to enter the art gallery. Both would meet in a centre ground which would become neither text nor image but an in-between state similar to what Higgins had called 'intermedia' (Higgins 1965). Fifty years after Solt set the starting point for this New Visual Poetry, Digital Poetics and interdisciplinarity continues to offer potential, creating new works by engaging communication theory, informatics, pop culture and coding. Enduring across this second timeline, the philosophy of the conceptual diagram has provided a way to explore the inner properties of what emerges when text and image collide to make something that is more than the sum of its parts.

This dissertation is an exploration of this intermedia in diagram poetry, one which has a dual life – a physical, information-giving side and an invisible conceptual side. In its informatic, physical

¹ Solt, Mary: 'Concrete Poetry: A New World View' Indiana University Press, 1968

form it is an array of icon and text signs using space and arrangement to tell, instruct or anatomise. It is operational, a two-dimensional machine of instructions, depiction or extrapolation passively awaiting user engagement, its roots in the ritual diagrams of seventeenth century alchemists now neutered.

Of greater interest both for my own creative work and for philosophical reasons is the conceptual diagram, which paraphrases an episode in the social field and creates a schema of it. Divested of its origins this schema becomes a paradigm, ready to be applied in another social episode. In twentieth century philosophy the conceptual diagram emerges as a significant moment in three places: as a pernicious social effector of power dynamics, as in Foucault²; as a benign enabler to upend building design and remake the built environment in new ways, as in Eisenman³; and as a purely abstract emanation of phenomena, as in Deleuze⁴. Common to all three is the idea of *drift*, that the conceptual diagram has a slipperiness which prevents the phenomenon, architect or authority that created it from fully controlling it. It loosens its ties to that which it arose from, becomes applicable to other scenarios, may attach itself to other phenomena, and -- akin to the post-structuralist view of language -- establishes a controlling stake in imposing meaning within a sign, a place, a building or an event.

Chapter 1 defines the diagram and outlines visual poetry that engages with it, discussing examples in visual poetry pre- and post- 1968. Chapter 2 examines the conceptual diagram as an active, dynamic 'map of relations between forces' (Deleuze 2014), susceptible to 'mission creep'⁵ as it moves across the social sphere. In chapters 3 and 4 I scrutinise it in two ways: first in a case study in chapter 3 of Jim Rosenberg, a significant but rarely studied poet straddling

² Foucault: *Discipline and Punishment*, 1991

³ Peter Eisenman, architect and author of *Diagram Diaries*, 1999.

⁴ Deleuze: *Dialogues II*, 1987

⁵ Mission creep: a term first used in the *Washington Post* in 1993 to describe a military operation which gradually expands its scope beyond that intended.

both the early diagram experiments of the 1960s and the current hypertext digital poetics, and second by applying the same focus on my own creative work in chapter 4.

Visual poetry is uniquely placed to exploit the conceptual diagram precisely because it deals in the physical diagram. As Ittelson describes the very act of mark-making in diagrams carries its own weight and lends itself to diagrams of power. Blackwell notes how, for diagrams, 'the overall form affects the interpretation' so we 'view them as significant' (Blackwell 1997). Goodman notes that the diagram when 'read or viewed by the reader becomes even more semantically dense as it is interpreted (Goodman 1969). The physical diagram may, then, be a step closer than other phenomena to becoming a conceptual diagram since it is ready to depict the invisible as expressions of thought. Going further, Deleuze originates the conceptual diagram before the physical: '...there is a loss of control over what will spark thought: thought depends on formations, whose diagrams are already working in connection with other diagrams before they touch us, navigating at random in their multiplicity...' (Deleuze 1998). There is material enough to look at the conceptual and physical as two sides of the same coin and this dissertation will examine this relationship, while the creative component will attempt to manifest it. Chapter 4, as a critical reflection, will establish the relationship between the two.

Across all four chapters, I discuss some philosophical questions that arise in relevant lines of enquiry and locate my own work on one side of a debate where to do so is necessary in a critical reflection. Three discussions form the basis of this strata of the dissertation: (1) defining the diagram in poetry by presenting modalities in chapters 1, 3 and 4; (2) the concept of textual uncertainty in diagram poetry, modelled on Information Theory and quantum physics; (3) the debate between realists and anti-realists about whether the diagram is ontologically self-motivating or is instead epistemologically a record, mirroring a similar debate within fine art⁶.

⁶ A debate examined in detail in *The Rise of Realism*, by Manuel DeLanda and Graham Harman, Polity, 2017.

In the corresponding creative work to this dissertation such weaknesses are exploited, stress-tested and remade as colliding and colluding signs that both challenge the way we read and draw further layers from visual signs.

None of these discussions on their own will describe fully the conceptual diagram, since like the wartime Enigma machine its output depends on a constantly altering decoder, as a reader interprets, and a new reader re-interprets and so on. However, the chapters address different operations of the conceptual diagram and taken together they suggest a concept of the diagram as something performative, engaged in a self-propelling internal momentum creating a 'map of relations between forces.' (Deleuze 2014). To bring this back to diagram poetry, the author of a diagram is part of the diagram: 'If diagrams are a mode of representation, then what is represented is the thought process itself' (Law 2019), a process explored in detail in chapters 3 and 4.

As methodologies, models from the hard sciences are used to aid visualisations of the conceptual diagram, and to then apply the same questions to the resulting model as are used in those sciences. In particular, quantum physics is well used to scrutinising entirely abstract phenomena and presents some fruitful ways to bring the diagram into focus in order to interrogate its dimensions. The use of Information Theory in chapter 3, for example, tests levels of potential meaning, quantitatively measuring the work of Rosenberg and using this to seek the syntactic features which present challenges in reading such work.

Throughout, I sought the comments of those involved at first hand, corresponding with many of the visual poets described, and extensively with Jim Rosenberg. I also related my ideas on Information Theory to those far more experienced to check their validity. The Appendix contains complete interviews and emails.

The title of this dissertation suggests diagrams which possess negative subject matter, seeking to disturb the reader or relate disturbance from the author. But as discussed in chapter 4, such a reading would limit what are after all diagrams that cannot remain attached to the subject matter they contain. Diagrams drift, their schema establishing similarities with other phenomena, and to limit this limits the reader's negotiations with the text-icon surface discontinuity. Instead, the term 'disturbance' reflects Eisenman's description of the diagram as a paradigm which in its physical form – as visual poetry or a building, for example -- affects its surroundings, like ripples from a disturbed pond, but also in its conceptual form *effects* its surroundings too, by drifting from its original form and grafting itself on other phenomena (Eisenman 1999) (Deleuze 2014). In practical terms, the visual poem affects its surroundings by producing 'affect' in the mind-brain of the reader; it effects the reader by engaging them in its operations. To disturb, then, becomes a dynamic pursuit, not reliant on charged subject matter, only on the abstract machine-like operations of the self-serving conceptual diagram, agitating the material surface of the poem as text and icon collide, but also agitating the reader through collusion with this enterprise. The result may be that the diagram becomes a window into a state of mind, of reader and author, described in this dissertation and manifested in the creative component alongside it.

Chapter 1: Defining Diagram Poetry

This chapter will establish a framework for the dissertation, delineating the borders of its scope and offering methodologies. It will survey practice and research for the purpose of building a view of visual poetry which lays the groundwork for the conceptual discussions in chapter 2, the case studies in chapters 3 and 4 and finally for contextualising my own practice, discussed in chapter 5.

An immediate problem with researching this field is that it has no agreed definition; visual poetry is a term used 'in the absence of a real consensus regarding its meaning.' (Elleström 2016) or 'having very little specific meaning' (Drucker 1999). Most attempts return to a binary way of describing it, as one meets the other, text meets image. Definitions then fall into describing both in one phrase, relying on words which replay the visual vs textual, such as 'a dichotomy' (Ellestrom 2016), 'borderland' (Honegger 2002), 'poetry meant to be seen' (Bohn 1988), 'shaped writing' (White 1976) or simply abandoning definitions in favour of, 'the very essence of poetry' (Gomringer 1954).

This chapter will instead explore visual poetry using a method which avoids simply listing visual poetic ingredients. Taking a lead from Ellestrom (2016) and McAllister (McAllister 2014) it will instead identify *modalities* that visual poems lie within, using the concept of the Venn diagram to show how these modalities identify overlapping fields for visual poetry. These fields or classifications allow us to see properties which recur in visual

poetry and allows a definition which focuses on function and dynamism rather than static ingredients.

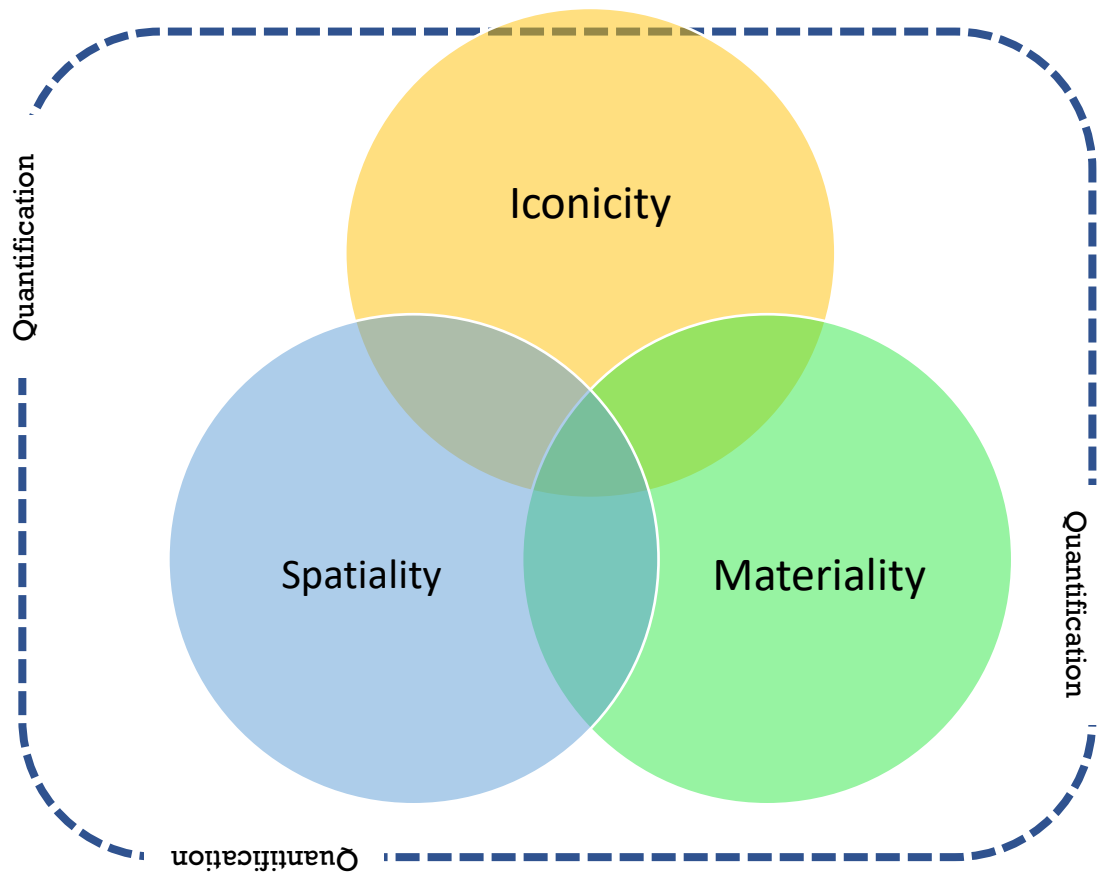


Figure 1: this chapter uses four modalities to explore visual poetry: iconicity, which looks at images and text as one sign type; spatiality, which conceives of visual poetry as composed of internal spatial relations; materiality, which examines the material used to produce such works, and also the way text is treated as a malleable medium. Finally, these three modalities are explored as a whole by a process of quantifying meanings within a visual poem.

A literature review of visual poetry will provide an overview of the field and raise links pertinent to later chapters.

To summarise, examining modalities will allow a definition suited to current spatial and intermodal ways of considering creative work, while the concept of simultanism will allow a focus on cognition and perception.

1.1 Defining visual poetry with modalities

One could look at an anthology of visual poetry and arrive at no clear definition of what constitutes the form. Casting the net wider into the early twentieth century to seek the origins of it is no more fruitful, since the variety of forms is sparse but still wide. How then to define something which once defined seeks always to reinvent itself and add yet more types to its overall anthology? The way forward rests on putting aside how they look and instead finding modes that recur on the one hand and also ways of categorising that fit. Categorising the animal kingdom, for example, moved from pre-modern methods where appearance was all (all animals with legs, all who swim etc) to one where function, action and the interior was key (whales swim but are not fish, for example). Likewise, with visual poetry -- a field as diverse with visual poems as there are visual poets -- any taxonomy would fall at the first hurdle if it rested on content and form. Another way which overlooks appearance must be used.

MacAllister (2014) suggests instead that with visual poetry we avoid 'compartmentalising' and 'recognize larger generic concerns with intersecting potentials for semantic and visual meaning.' If one imagines these intersecting potentials as lines tugging this way and that, we meet the definition of Augusto de Campos, whose group

Noigandes jointly-coined the term 'concrete poetry' in the 1950s. Visual poetry, he says, is, "the tension of word-things in space-time.' It does not unfold linearly, according to the discursive, syntactic conventions of verse, but presents itself instantly, as a "relational field of functions.'" (Jackson 2006). So, an idea emerges of internal function and potential once we lose the temptation to compartmentalise according to appearance.

One could go even further and dispose of the two elements of this apparent hybrid form altogether, the word and the image; it is not a given among practitioners that word and image are the foundations of visual poetry. Honegger positions visual poetry, echoing de Campos, as 'the explication of spatiality and visibility' (Honegger 2002). In this, word and image are grouped together as the same visual element, with spatiality taking on the position of opposing mode to the joint one of text/image. Elsewhere Ellestrom (2016) argues a similar point with different modes: '...this dichotomy [between image and text] obscures rather than clarifies the relations between different media.' He points to the sign, or icon, as the unifying factor in word and image and instead sees a dichotomy where, 'a semiotic category (the verbal system) is opposed to a sensory category (the sense faculty of vision).' Exploration of visual poetry is increasingly seen, then, as less a hybrid of text plus image and instead as creating something new of itself.

Arising out of these statements above is the idea that we need to focus on the internal space of the visual poem, a kind of interiority not explicitly on the page; we next need to look for how the dichotomy of text and image can be brought under one umbrella term, grouping them as icons with one semiotic system; we also need to take into account the actual physical makings of the visual poem, since the proliferation of media

used is so broad, from found objects, to digital poetics, memes, and pen and ink. Finally, if the above contribute to meaning, then it would be a bonus if those could be 'weighed' in some sense, a method for quantifying the potential meaning in a way that brings a multimodal approach more in keeping with such a boundary-jumping form as visual poetry.

To go into more depth next about these modalities, based on research by Ellestrom (2016), (Drucker 2013), MacAllister (2014) and (Perloff 2007). *Figure 1* (above) lays them out to show how they intersect in a Venn diagram. All visual poems will lie in the fields of this Venn diagram, but not all fields lie over the individual visual poems.

Finally, I will also apply the concept of 'simultanism' that runs throughout visual poetry. Simultanism, or verbo-visual simultaneity, seeks to merge cognition of the visual and the verbal and is, 'essentially an empirical claim about the way in which readers are able to attend to and process visual and verbal aspects of poems, using the twin signs of word and image in the purpose of one meaning.' (Shingler 2011). It is a field of neuro-linguistics focusing on poetry and may use quantitative means to arrive at conclusions. There are three reasons why this cognitive approach is used here: it rests on functionality by including the reader/viewer; it matches the aims of this dissertation in exploring visual poetry through the conceptual diagram; and it accommodates a key concept which will be explored in chapter 4, 'embodiment' – a cognitive linguistic approach that wraps reading, the body and the external world, and materiality in how we make text-art work. It sits within the modality of spatiality in terms of the diagram above (Figure 1).

1.1.1. Modality 1: Spatiality

The first of these modalities is **spatial** relations. Visual poetry's physical layout enables the reader to see simultaneously elements including formats, fonts, shape, colour, and scale engaging with one another on the flat picture plane. Such spatial relations are a given in visual art (PALMER 2008) but in visual poetry this is furthered by the inclusion of text whose word signs produce share specific meanings, while visual elements produce only some shared meanings. At this point it is useful to bring in the idea of the *conceptual diagram*, in which spatiality is a central element, but also reveals function and action, which in turn suggests a temporal element – all of which add dynamism to the previously static view of the apparently gridlocked text-image interface. As a device the conceptual diagram is useful in providing a template for the mechanics of the functioning picture plane at work.

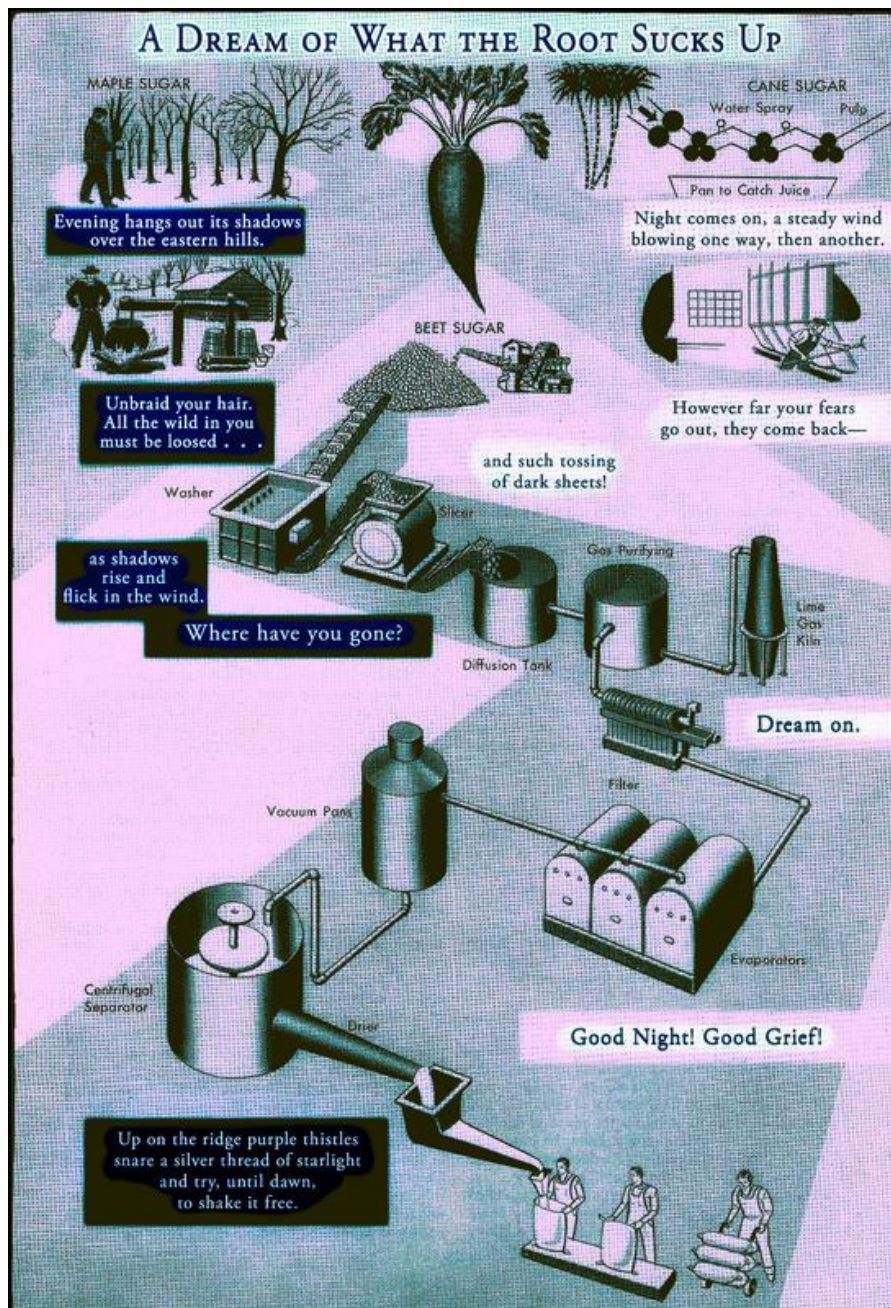
Diagrammatics enables us to view the spatial relations of visual poetry as a way of formalising function. For Drucker (2013, p7), a diagram utilises, 'those graphical expressions that take advantage of spatial organisation to structure semantic relations... The production of meaning occurs across a field of text as references replay and resonate.' Visual poetry operates in an analogous way, with every element 'resonating' with interaction. This includes, too, the white space in page-set visual poems. In chapter 3, in exploring the work of poet Jim Rosenberg, I will demonstrate how empty white space enhances cognition of signs in clinical experiment. Spatiality allows us to view the visual poem as a functioning device with these components – text, image and space -- arranged to encourage the page to read as a whole field, possessing its own inner temporal dynamics. It does not discriminate between signs in text or image but

encompasses both in a view of resonating signs provoking meanings as they act and interact on the picture plane.

1.1.2 Modality 2: Materiality

A second modality is **materiality**, referring to the physical properties of the materials being used to make the images and text and the material or surface they are applied to. But it can also refer to the virtual sense of breaking down words and images, dissecting them like other materials than can be taken apart and re-made.

Materials carry their own histories, which Nance van Winckel exploits in her use of found manuals in poems, or Kenneth Patchen in his use of antique rag papers in visual poems of the 1950s. Both these artist-poets use materials as a central part of their practice: van Winckel to challenge social values from the period when the manuals were printed, and for Patchen initially out of economic necessity but also to 'stretch the boundaries of the book format' (OAC Unit, 2004). Such material is a part of meaning, as MacAllister suggests (2014, p4), comparing Ian Hamilton Finlay's work in which the same text is used in a sculptural garden piece and also on paper versions, noting, 'the ways that different material circumstances produce different readings.' He locates meaning first in the text itself and second 'on the very surface that the text appears.'



Above: 'A Dream of What the Root Sucks Up.' Nance Van Winckel (2016). From *A Book of No Ledge*, 2016, LSU Press

Materiality in the virtual sense of language as a malleable medium is, however, contested. Umberto Eco (Eco 1979) takes the view that the idea of words holding within their form some mimetic value – what he refers to as the Craytilian argument – is a 'fallacy.' Words are mere signs and cannot be broken down or moulded without their

destruction as signs. However, research in cognitive linguistics suggests that we do indeed hold some embodied sense of a phenomenon or object in a word (Berntsen 1999), though that is crucially within the reader rather than ontologically within the word itself.

The genre of concrete poetry engaged most with materiality in using varied media from granite and plastic to organic matter, and also in playing with individual letter forms – all in an attempt to be the poetry of ‘pre-semantics’ (Vos 1987). This play with material may have then laid the groundwork for a renewal of a broader visual poetics after 1970 by just this materialist approach to the ‘anagrammatic and paragrammatic play inherent in language’ (Perloff, 2007, p2).

1.1.3 Modality 3: Iconicity

A third modality is **iconicity**. Ellestrom (2016) argues that the reader/viewer seeks meaning in both text and image so a common denominator is arrived at in the concept of *iconicity* – where an icon is a sign which we perceive through resemblance rather than by arbitrary signage.

‘To put it very crudely: in a painting, the forms that we see produce iconic meaning because we apprehend similarities between these forms and forms of physical objects and abstract notions that we take to be represented’ (Ellestrom 2016, p3).

But it is not as simple as visual = icon and word = sign. Words can very easily be moulded into shapes, and the visual can be highly specific as signs, for example in road signs. Both can signify through resemblance. Ellestrom’s argument is that word meaning is arrived at from a shared sign, while in a visual form meaning is from resemblance so by moving

both toward a centre ground of iconicity the reader/viewer can engage both with the reading manner of each: therefore, a word is read for its resemblance; an image for its sign (2016, p5). In practice this is challenging, however, as it requires juggling cognitive factors of reading, how the medium (paper, ink for example) is used, and juxtaposition of image and word.

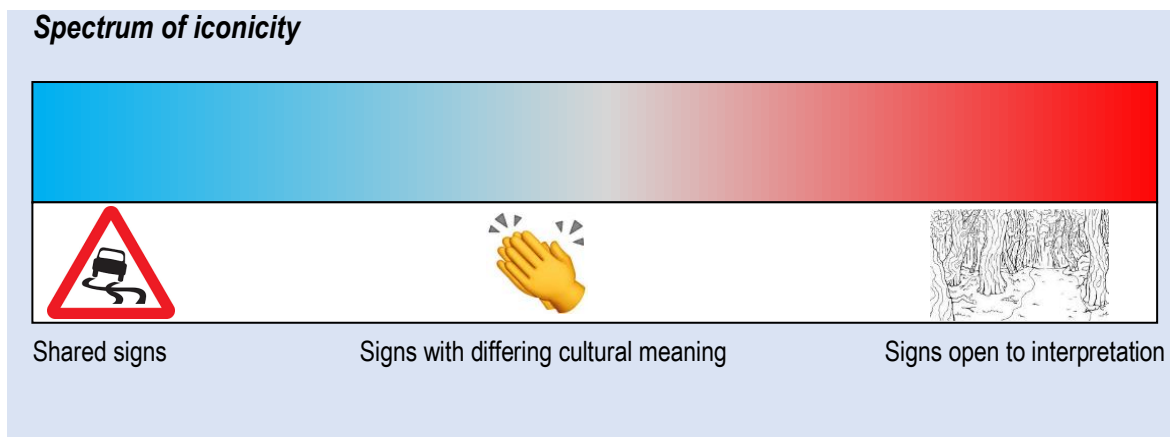
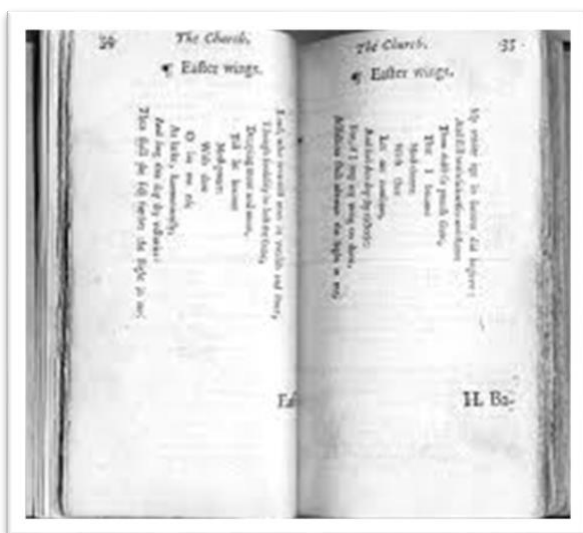


Figure 2: on a spectrum of iconicity, visual signs on one side may be understood firmly with the same precision as a word, on the blue side of the chart. Signs which are open to interpretation, such as a forest, would be on the other side of the spectrum. Signs with varied meanings may be place in between, such as the clapping hand emoji which is seen as an erotic invitation in China.

One can approach iconicity as a spectrum, from firm icon signs to oblique references (see *Figure 2*). Visual signs lend themselves more readily to open interpretation, but words are less so, since language is inherently one of shared agreed meanings. However, words can also adopt iconicity not through literal meanings but through a process of embodiment. Linguistics has explored this concept in which the word’s meaning is

gained through sensory resemblance aside from literal meaning. Embodiment of language is described by cognitive linguists such as Lakoff (Lakoff 1989) as the development of a sensation-based cognition of words arising from our bodily interaction with the physical world. In this, we move beyond the Pierce semiotics of word = sign into a place where the mind physically links word with bodily sensation. Quite separately, Paul Klee applied a similar concept where line and mark-making can tap into bodily sensation, exploring the way a word or form is drawn – the materiality of ink or pencil, the thickness of line -- and which can possess its own sensation iconicity, as depicted by Klee and his 'General System of Pictorial Means' (Klee 1953).

To give an example at the most basic level of iconicity, a word can be re-built through font or shape to resemble its referent, most easily if that referent is a noun. George Herbert's 'Easter Wings,' posthumously published in 1633, very simply becomes an icon for angel wings in the layout of the lines (see figure below) when seen vertically.



Above: George Herbert, 'Easter Wings' (1633)

While the word can imitate a form simply by adopting an outline shape in the way it is laid out, an image has further to travel from the opposite direction to the same point: from resemblance towards clear word-like signification, since it sidesteps exact meanings. As if to aid it on its journey, Charles Peirce developed the concept of the 'Hypo-icon,' (Peirce 1903) as an escalating level of visual iconicity getting closer to signification, similar to the spectrum described earlier which moved from exact visual meaning to oblique reference. Peirce breaks down his hypo-icon into three stages: images, diagrams and metaphors. In an elaborate explanation, Peirce gets close to the much later ideas of Foucault and Deleuze, where a conceptual diagram exists within an icon. Where Deleuze calls the conceptual diagram a 'map of relations' of what it contains, Peirce defines his hypo-icon as possessing elements, 'which represent the relations... of the parts of one thing by analogous relations in their own parts...' (Peirce 1903). He simplifies it somewhat as a straightforward symbol, but hints at the in-between concept seen in later philosophy in defining the hypo-icon as somehow situated above the components it contains, as summarising and schematising them.

Over a century on, the hypo-icon is an incomplete concept and one superseded by later diagram philosophy, but its relevance is that, like Claude Shannon's Information Theory, it rested on *how* the visual sign or word signifies rather than *what* is signified by them. It offers function rather than taxonomy, and in so doing helps lay the groundwork to examine signs as mechanisms rather than individual markers.

1.1.4 Modality 4: Quantification

The last modality, **quantification**, performs very differently to those described above. The first three – spatiality, materiality and iconicity -- are all local concerns found within

the visual poem, describing the qualities in text and image and relations engendered by their interaction, quantification is applicable across each of those. This is supported by Vajapayem (Vajapeyam 2014) (2014), Sigakia et al (Sigakia 2018), and Redies (Redies 2017), the first dealing with Natural Language Processing, the second and third with visual art.

The field of information aesthetics seeks to quantify aesthetic experience but has moved on from the early days of Moretti's 2000 paper which sought to use big data to answer literary questions. Since then the Digital Humanities has shifted from the blunt tools such as aggregating data or counting how many words there are in titles, and now uses multimodal analysis to address, for example, language content, cognitive processing in the reader, and uses of metaphors. Rather than literature having to adapt to coding and mathematics in order to be analysed, it is the hard sciences which now ask different questions, and one of those questions is how much potential for language meaning is in a text. In linear prose text there are established ways of close reading to discuss this, but in visual poetry an alternative method is needed which uses one tool for two forms of sign – word and image. Information Theory can provide a way of doing this, by using a sub-field called Text Entropy Theory with AI tools to establish how language and signs can be predicted, and therefore how unpredictable they are, leading to analysis of how broad their meaning can be.

Put simply, the greater the available meanings in a piece of text, the higher the textual entropy rate. Entropy in this case does not refer to decay, but in the context of thermodynamics of a gas which would spread and proliferate in all directions. Use of the method has been broadened to include entropy in visual art, focusing on the extent to

which figurative art outweighs abstract in its potential breadth of meaning. The fact that Sigakia (2018) could produce a numerical matrix of entropy for a timeline of art movements since the Renaissance suggests research has evolved significantly. Over 140,000 paintings were examined in that study, while a similar study of the potential available meanings in 810,000 English texts was carried out using the Reuters Corpus⁷ of collected news articles (RIZVI 2019).

If we apply the tools of Text Entropy Theory to visual poetry there emerges, as with Sigakia's fine art studies above, a measure of overall potential meaning, as understood by a self-learned algorithm. An advantage of this method is that by using field-wide quantification of all potential signs it has the quality of allowing both images and text to be considered together using the same metric. The tool is best understood as being a measure of all possibilities, a kind of reverse of the popular children's toy '20Q' which predicts any answer by using a number of binary yes/no questions. Text Entropy works backward from a single textual sign or icon, measuring not only the positive answers but the number of negative too, growing exponentially (ie, to a fixed factor within a fixed window) as it does so. It reaches a conclusion when there are no more possibilities for each sign and combinations of signs. It follows that the more specific the sign the lower the entropy rate, since the range of meanings is narrow. Studies of texts found that high entropy (or, high breadth of potential) was present in texts with greater ambiguity and less certainty – which by definition is often work written in a poetic register. Counting the amount of uncertainty (Brownlee 2019) turns it into a positive attribute, in the sense

⁷ Reuters Corpora (RCV1, RCV2, TRC2) In 2000, Reuters Ltd made available a large collection of Reuters News stories for use in research and development of natural language processing, information retrieval, and machine learning systems.

that it is a 'countable' one. The result of using Text Entropy Theory is to calculate quantitatively the potential for meaning in what are two very different sign types, a challenge unique to visual poetry and therefore a useful tool in examining the form.

1.2 Development of Visual Poetry

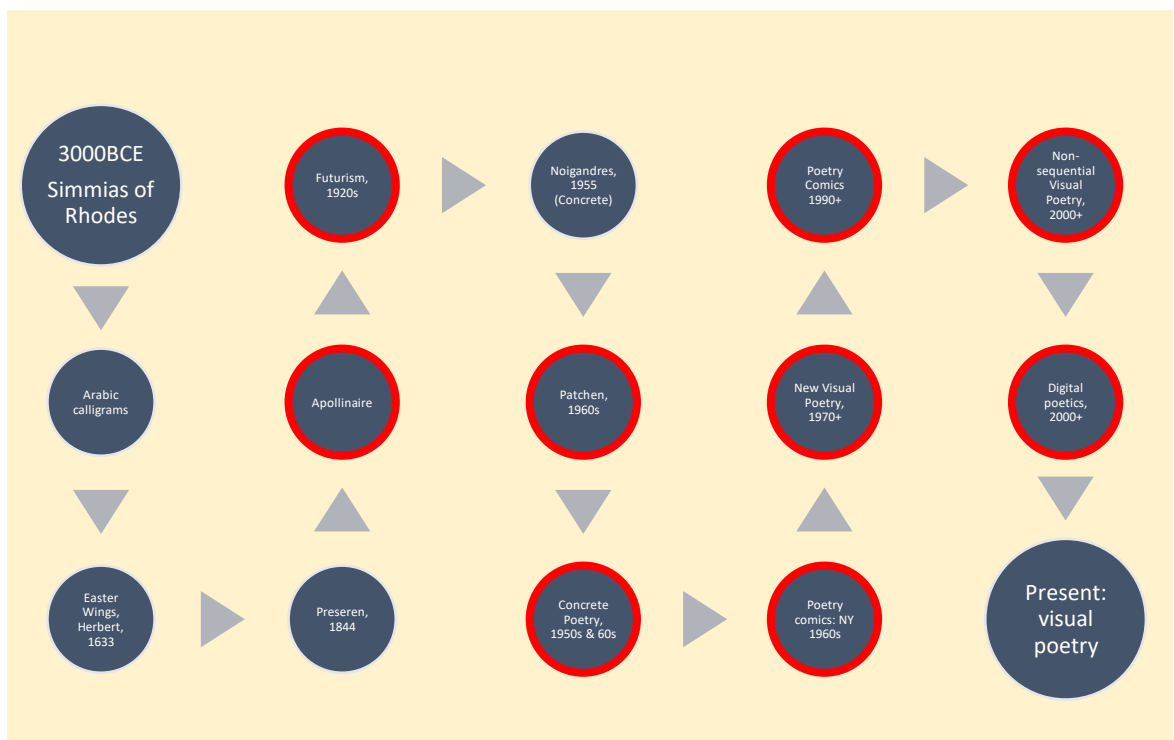


Figure 3: a timeline of significant moments and movements in Visual Poetry. A red border indicates a point that is explored in this chapter

I will next track a selected timeline of visual poetry towards what is termed New Visual Poetry in 1970, when the “‘form = content’” assumption of Concretism was abandoned’ (Perloff 1989). In this period, visual poetry rejected the bare bones of materiality in Concretism and instead evolved toward a more diverse presentation of signs in the

semiotic category (text) and in the sensory category (visual) (Ellestrom 2016, p12), drawing in external cultural references, as well as absorbing post-modernism's self-referentiality. Rather than present an exhaustive timeline this selection instead notes only those moments in the emergence of visual poetry that are pertinent to this dissertation. To do this I will outline:

1. the merging of the visual and the textual
2. How visual poetry moved toward higher levels of complexity, both materially and aesthetically, once it moved beyond concretism.
3. The debate surrounding the object, materiality and the reader.

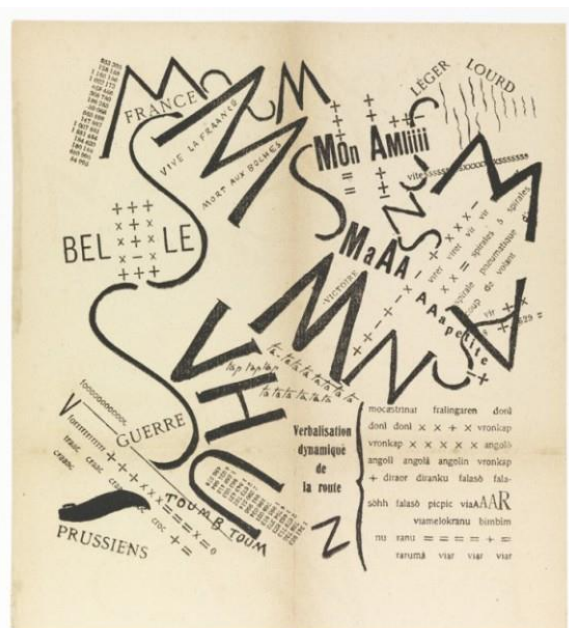
1.2.1 Pre-twentieth century

To begin with simultanism, the first moments to be explored also cross over into materiality, as they depend on the printing process for their realisation. In what is considered to be decades before 300BCE, Simmias of Rhodes composed three short poems shaped in the form of their subjects: wings, egg and a hatchet, in a form that became later known as *carmina figurata*. Adopting the same approach in 1625, Johannes Honthemius' 'The Cube' repeated the same ten words in 35 lines, on a grid 35 characters wide. The result was an oscillation produced by the offsetting of one letter to the left on each line. A similar shaped poem appeared posthumously in George Herbert's 1633 collection 'The Temple.' 'Easter Wings' was printed in two stanzas on facing pages in symmetrical wing-shaped text. These latter two examples exploited the printing press to produce their effect. Similarly, in 1844 the Romantic Slovene poet France Preseren composed 'Zdravljica' in which each stanza was printed so as to

resemble a wine cup, echoing the title which translates as 'A Toast,' saluting the ideals of liberty, equality and fraternity.

1.2.2 1920s Futurism

While in this thesis I will be concentrating on English-language visual poetry, it is necessary to mention briefly here the Italian Futurists of the early twentieth century as they provide the first foray into working between text and image as a cohesive movement. The Futurists produced shaped writing which created an asymmetry in favour of the word rather than the icon, as in Marinetti where words were simply laid in lines or shapes that mimicked explosive or dynamic forces. Marinetti published a manifesto in 1912 for 'parole-in-liberta' or words-in-freedom, leading to poets such as Angelo Rognoni producing visual poetry in 1916 that was 'more ingenious and extensive' (Leddy 2009) than the calligrams of Guillaume Apollinaire in 1913-16, with their use of fragments of ephemera such as architectural plans, train timetables, logos and other pieces of the industrialised world they so venerated.



Above: Les mots en liberté futuristes (Futurist Words in Freedom) 1919, Filippo Marinetti

The Futurists are sometimes linked with the emergence of the concept of simultaneism (Leddy 2009), which, as described earlier, seeks to merge cognition of the visual and the verbal. But Townsend (2012) suggests otherwise, locating the Futurist sense of simultaneism in an entirely different place -- in the tension between life in an industrialised city and art, rather than between word and image. Futurism is, after all, about revering violence and the alienation of industrial life (Buchanan 2018). Townsend suggests that simultaneism began with the poet Henri-Martin Barzun, and in turn by the little-studied French movement of Unanimism developed by the poet Jules Romains in 1903. Unanimism adopted a quasi-mystical belief in group consciousness (Walter 1936) and while it may seem here at first as a diversion away from the concerns of visual poetics and simultaneity Unanimism is noted here for its similarity to the Deleuzian *assemblage*, explored in Chapter 2. Walter (1936) describes Unanimism as the appearance in any fleeting group of a common moment: 'A street group-conscious would include the walls of the houses and the roadway. Similarly a train or a boat is a group material and human' (Walter 1936, p5). This echoes the concept of the assemblage as a gathering of people, place and structure, as in a prison a street corner or a barracks (DeLanda 2016).

Simultaneism then appears fittingly in several contexts at the same time in the years before World War One, including Barzun, Delaunay and Futurism, noted by Bohn (Bohn 2001) in his survey of visual poetry. Apollinaire wrote an article celebrating Delaunay's text and image work, 'Simultaneisme-librettisme' (1914). Later, the Mexican poet Marius de Zayas also published his own *poems simultanes* in the magazine '291' in 1915,

evidence of the beginnings of what would become a thriving visual poetry and concrete poetry culture in Latin America in the mid-twentieth century culminating in the Noigandres group which jointly-initiated concrete poetry in 1955. Futurism left its mark on simultaneism but later work in text-image took the opposite ideological stance, with the Italians falling in behind Mussolini while the Latin American poet-artists would imbue theirs with revolutionary left-wing politics.

1.2.3 Towards concrete poetry

Most studies of visual poetry note a large gap in such work between Futurism and the Concrete Poetry of the 1960s. However, Kenneth Patchen's work provides a brief stopping point in such anthologies between these two significant movements. editorial about Patchen in 1978 in the journal *kaldron* 9,8 referring to recent surveys of visual and concrete poetry and titled, 'A Crack in the Concrete,' asked, 'how many continue to ignore the strength of vision and importance of this work within the context of the world-wide revival of the visual poem?' (Young 1978).

Difficulties funding publication of an early work of poetry in 1939, 'First Will and Testament,' led Patchen to produce his own drawings for the book by hand, an experience which changed the direction of his work and led to a fascination with image and text and with materiality, using thick rag papers and tempera. Patchen's work also stands out for its overtly political content, out of step with others working in visual poetry in the next decade in the US and Europe. There was a marked difference between concrete poetry those places and that in Latin America, which was forged in political

⁸ A magazine dedicated to visual poetry and intermedia work, started in 1976.

terms as Solt (1968) states: 'on the whole, Brazilian concrete poetry is more directly concerned with sociological-political content,' and Ledesma (Ledesma 2018) concurs in referring to concrete poetry in Portugal. Perloff (2007) notes how concrete poetry in Europe and North America brought 'concretism dangerously close to industrial design and conformity to the political-ideological status quo.'

1.2.4 Concrete poetry in the 1960s

Concrete Poetry as a movement sought meaning in different ways to the Futurists, producing work more in common with earlier work which made the printing process part of its development. It instead would strip the word sign of meaning, rendering it present only in its concrete materiality of word shape, font, and layout on the page. Seen now, wedged in between the early work of Futurists and New Visual Poetry post 1970, both of which found meaning from word sign as well as word shape, Concrete may appear Modernist in its apparent reverence for form and material. Material made meaning, as in Pollock and the Abstract Expressionists, and everything else would follow. So Concretism would not reject meaning, it would simply divest the sign of meaning, placing all its eggs in the basket of shape and form. Critics may now find this dogma an easy target, achieving its aims but 'for what?' asks Bayard (1989, p171), suggesting the dead end that Solt hints at in her 1970 book defining visual poetry post-Concretism. Others take aim at Concretism retrospectively from a visual art viewpoint. Rinaldo (Rinaldo 2018), for example, considers Concrete Poetry when he compares it with the artist Cy Twombly's place in twentieth century image-text culture, concluding that, 'the fate of concrete poetry in its reception is far from substantial.'

The view in late 1960s visual poetics was that Concretism needed to give way to a new visual poetics. Concrete reduces, strips away and rests all on 'form = content, content = form.' (Solt 1970). For Bayard (1989), this merging of form and content had led to what Umberto Eco called the 'iconic fallacy,' a belief that, 'a sign has the same properties as its object and is simultaneously similar to, analogous to, and motivated by its object.' (Eco 1979, p191). Perloff concludes that Concrete's '[t]ypographical and calligraphic aesthetics were most striking in the 1960s, but also the least durable.' Something had to change.

Perloff describes how visual poets from 1970 onward reversed the Concrete direction in visual poetry and regained the word sign rather than attempt to dissolve its signification. '[I]t was only when the "form = content" assumption of Concretism was abandoned, as it was in the 1970s and 80s by poets like bpNichol, bill bissett and Steve McCaffery, who turned their attention to the anagrammatic and paragrammatic play inherent in language rather than on such Concretist elements as font, color, and spacing, that a more adequate poetics was born.'(Perloff, 2007). This new poetics is described in the final chapter 'New Visual Poetry' in Solt's 'Concrete Poetry, 'A World View' (1968) as heralding, 'a unique new art form created by contemporary man from contemporary linguistic materials to meet spiritual needs peculiar to his own time and place,' signalling a firm break from concretism's 'synthetic-rationalist' (Solt, 1968) approach. Dencker (Dencker 2000) also describes post-concrete visual poetry as a progression, of having 'more levels of aesthetic quality' and as 'more complex' than Concrete.

The Fluxus artist and poet Dick Higgins, meanwhile, also loosened Concretism's strictures, proposing the new term 'intermedia' for a blending of image and text,

declaring, 'Much of the best work being produced today seems to fall between media' (1965). Shedding Concretism's form = content doctrine further, Higgins proposed that if this new art form, falling in between text and image, '...is ever to become truly important to large numbers of people, it will be because the new medium allows for great significance' (Higgins 1965, 1984). To avoid over-simplifying, however, it should be noted that exceptions to this doctrine flourished in the Concrete Poetry work of Ian Hamilton Finlay, described by McAllister (2014), who would create sculptures where word signs would join with material to create politically-charged works.

1.2.5 Object-Oriented Ontology

Solt's heralding of New Visual Poetry in 1968 quietly and perhaps unwittingly introduced a peripheral debate which needs to be addressed here. In seeking to open up visual poetry to a more inclusive use of materials, methods and forms, it also ushered in debates on those same areas that exist in visual arts as well. The most pertinent here concerns the visual poem as an object and how far it possesses its own interiority. Conceptual art has long considered this topic, since many examples invest the object with interiority in its own right, in what became discussed in recent years as Object-Oriented Ontology (OOO). It eventually settled into a debate between ontology and realism, and stretched into similar debates in the conceptual diagram itself.

Solt posited this idea implicitly early on. Visual poetry is born in 'a world flooded with new products,' Solt declares, and in an age of 'space' [travel], it would 'gather significance from the world of objects around it... man is becoming increasingly aware of the spirituality that resides in the material itself of the objects that surround him.'

Foregrounding the material and object, OOO might be seen as Concretism by the back door, just as the latter rested on letter shapes as objects. In a book advocating OOO, 'Objects,' states Bryant, (Bryant 2011) 'exist in their own right,' and humans have no greater claim than objects to interiority. As is seen in chapter 2, this philosophy edges close to Aristotelian 'essences' and is countered by materialist scholars such as De Landa (2016). In Solt's statement above one can trace the beginnings of a line of post-1970 visual poetry which became as absorbed with the philosophy of OOO as the world of fine art would (and still is, as Kerr, 2016, notes (Kerr 2016)) but which sits uncomfortably with practitioners such as Van Winckel or Chrissy Williams.

If, however, it seems a stretch too far to link OOO with Concretism's idea of form possessing its own content, then a compromise is offered between the exponents of each side in a 2017 book of dialogues, *The Rise of Realism*, by Manuel DeLanda (opposing OOO) and Graham Harman (a founder of OOO), (Losoncz 2017), arriving at as a point where objects possess a Deleuzian 'thisness' (haecceity) but fall short of Solt's inner 'spirituality.'

1.3 Survey: Poetry comics

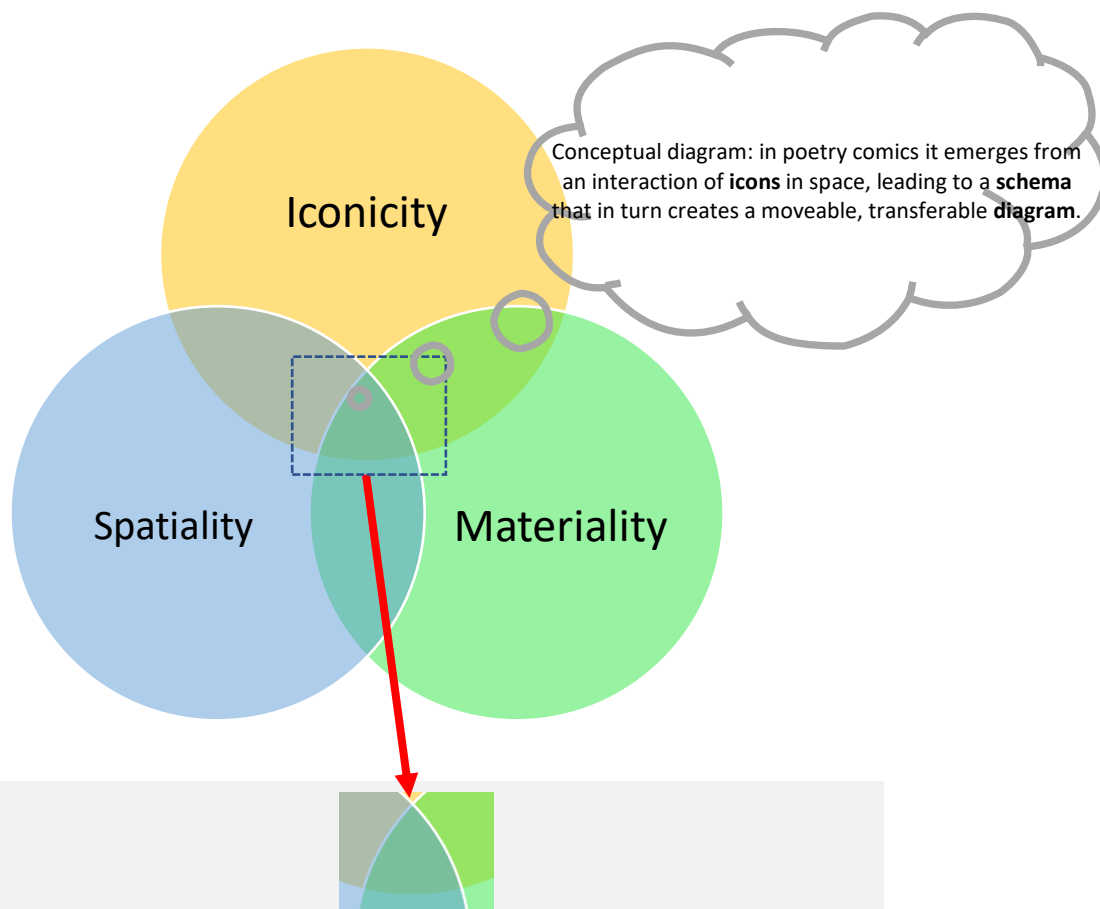


Figure 4: At the centre point of these three modalities, poetry comics incorporates Iconicity through use of schematised imagery and shaped words, among other devices; spatiality through its use of segmentivity and sequentiality; and materiality through its production processes (legibility of printing, limited colours) and malleable use of language. Quantification is enabled through measuring clear visual signs and words, combined in Text Entropy tests.

In its renewed tilt toward meaning in the 1980s, New Visual Poetry found fertile ground not just in materials and content but in the context they site them within -- held by some as a key indicator of the genre. 'If concrete poetry has concerned itself with language as material, then visual poetry tries to investigate context as material,' suggests Dencker (2000). For example, Sophie Ann Edwards produces ice poems, Richard Buddle uses

calendars, newspaper and paper notes, while Nance Van Winkel appropriates and repurposes cuttings from 1960s school books and medical encyclopaedias, specifically homing in on their contextual meanings of socialisation and societal expectations.

In Poetry Comics, visual poetry has found a context of popular culture that brings together materiality, meaning, affect and the emerging context of electronic reproduction and latterly the self-made publication. Poetry Comics has its roots in mid-60s work by Joe Brainard and later in the New York School in the 1970s (Williams 2015), a school also linked with Philip Guston, an artist engaged with poetry and text who collaborated with Barbara Guest, Frank O'Hara and John Ashbery. This built on Brainard's collaborations and would later encourage Kenneth Koch, a prominent New York School poet who worked with Joe Brainard in the early 1960s on image-text graphics, to create his own poetry comics in the 1990s.

Poetry Comics as a term was applied originally to classic, well-known poems set to sequences of images, published by writer and artist Dave Morice in 1980, a parallel development akin to illustration but not the focus of this chapter. The term is more often applied today to work which combines original image and text as an intermedia process. Joe Brainard is credited with a 'seminal collection' (Bennett 2014) of work in his 1964 *C Comics* which should be placed prior to Koch's better known poetry comics work but – perhaps due to Brainard's characteristic negligence of ambition⁹ -- has been overlooked. Worden (Worden 2015) notes with regret that *C Comics* is 'a contribution that is not included in the Library of America's Collected Writings of Joe Brainard and that is absent

⁹ See Worden, 2015. Brainard in discussion with Ann Lauterbach: "I don't have enough ambition, or, maybe, the right kind of ambition."

from the growing scholarship in comics studies' and is 'representative of a third way of thinking of not just poetry but also aesthetics in the twentieth century.' *C Comics* lasted only two issues but staged a series of works in collaboration with New York School poets including John Ashbery, Bill Berkson, Ted Berrigan, Kenward Elmslie, Barbara Guest, Kenneth Koch, Frank Lima, Frank O'Hara, and others.

In the early 1970s Koch had been setting his students at Columbia University a task of taking a comic book and pasting their own text on the speech bubbles and in 1992 he decided that, 'it might be possible to write poetry in a new form based on them' (Lehman 2004), though Lehman neglects to refer to Joe Brainard's much earlier comics work. Lehman suggests Koch's work is read like Apollinaire's calligrams, as 'conceptual work,' where the element of simultaneity 'has replaced hierarchy as a structural principle' (Lehman 2004).

1.3.1 Comics and spatiality: simultaneity

As a spatial combination of text and image, poetry comics seek simultaneity of reading/viewing. They are not captioned images, nor illustrated words, but use complex and evolved devices from the comics tradition for the purposes of poetry. But true perceptual simultaneity is questionable, as clinical experiments of image cognition have shown.¹⁰ Robertson (Robertson 2015) suggests that 'most attempts fail to create a hybrid art form and instead favor one mode (the visual or textual) over the other...' but

¹⁰ Research in Shingler (2011) using eye-tracking devices on subjects who were asked to 'read' Apollinaire's calligrams showed that they: "reported that they had been too focused on the words making up the poem to give the global shapes any attention, and this was borne out by the eye movement records, which did not contain any evidence of free inspection."

argues that poetry comics succeed at being more than alternate-gaze texts. They achieve this, he suggests, in a multimodal approach of 'segmentivity.'

Segmentivity is defined by Duplessis (Duplessis 1996) as a need to 'articulate and make meaning by selecting, deploying, and combining segments,' separated or grouped 'by the negotiation of space, pause and gap,' which readily presents itself as suitable for visual poetry. Essentially, it is about assembling meaning into packets. This quanta of meaning requires further defining but McHale (McHale 2010) notes Shoptaw's (Shoptaw 1995) definition of poetic measure as 'packets of signs' forming the 'smallest unit of resistance to meaning.'

In Robertson's (2015) position that poetry comics should rest on segmentivity in order to move beyond a hybrid art form, it is useful next to test this against a wider range of examples than Robertson allows, as he focuses only on poetry comics setting well-known poems with images, as in Morice's approach, a now dated form. McHale (2010) applies the concept of segmentivity widely across poetry in general, incorporating into his definition the action of *seeing* as well as *reading* the page. Hale cites Duplessis' 1996 work on segmentivity to determine what such segments may be in poetry, suggesting that, 'they are basically defined by white space. ... These segmented units can be organized into the larger page-shapes of fixed stanza, or into other pagespace thought units with their termini of various kinds. ... All the meanings poetry makes are constructed by segmented units of a variety of sizes.' This description lends itself equally to an image as well as a word; signs from both may together construct a segment.

Despite his limited scope, Robertson does advocate a ‘coherent multimodal ensemble,’ echoing Higgins’ (1965) idea of intermedia and Drucker’s (1999) combining of the verbal-visual in “semantic chords” as a retinal-cognitive effect... producing “a visual liberation”.’ Since Robertson’s research in 2015, poetry comics has expanded into a spectrum containing on the one end work which sits squarely in the comic tradition such as British illustrator Tom Humberstone, to those at the other which eschew words entirely or work with found images and fragments, as in van Winckel and Randall, below. Wherever poet-artists occur in this spectrum, there is an awareness that comics poetry ‘should balance freight between image and words. These elements are only doing work if they’re changing each other. Duplication is deadweight’ (Rothman 2015). Word and icon may vie for signification and for attention, but where they unite is in packaging together meaning in serial segmentivity, in blocks of meaning drawn from a combination of sign types. From there, it is a short step to Linde and Labov’s ‘gaze tour’ (Linde 1975) in which the reader-viewer ‘walks’ through and around a diagram, acquiring meaning to and fro in a non-linear, cumulative fashion.

Segmentivity, then, is crucial in poetry comics. Bennett (Bennett 2012) suggests that, ‘it can be argued that segmentation, not sequence, is the primary characteristic of comics.’ But it would appear to be at odds with a mode equally central to comics, *sequentiality*. Bennett prioritises segmentivity, arguing that both visual and verbal elements of the page can be held together in packets of meaning, regardless of whether they conform to a sequential flow. Research in Bennett (2012), Robertson (2015), McHale (2010), and Duplessis (1996, p7) all point to resolving the debate of segmentivity versus sequentiality in favour of the former, not least for taxonomic purposes, since the idea

encompasses even the most experimental excursions in visual poetry, while sequentiality does not.

1.4 non-sequential new visual poetry post-1970

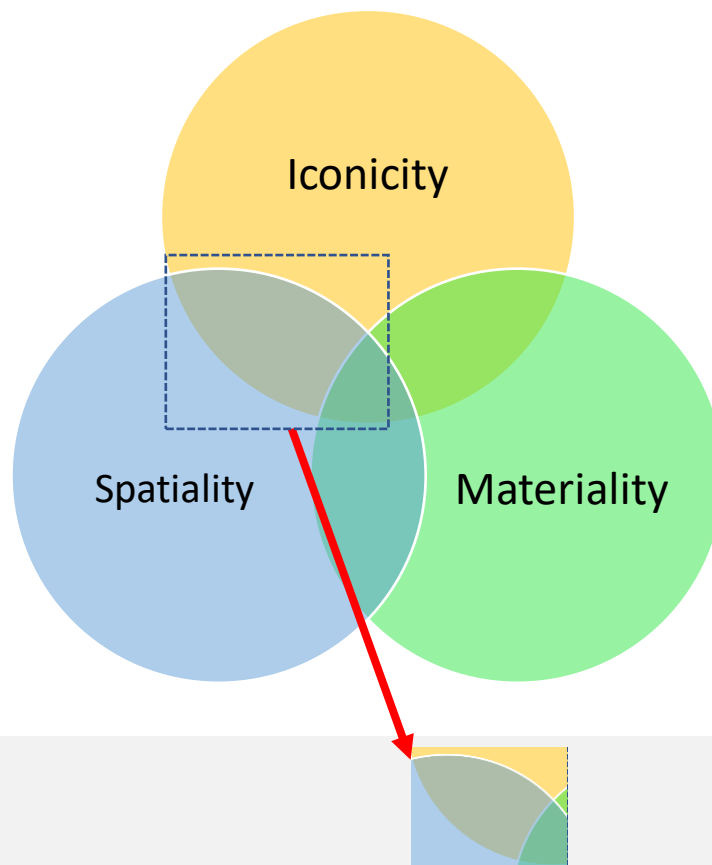


Figure 5: Although a varied and diverse field, current Visual Poetry occurs at the crossover of spatiality and iconicity more than it does materiality. **Spatiality** is seen in terms of segmentivity, a literal use of space between icons, and exploring the spatial internal relations of combining different signs types – word and image. **Iconicity** is very much a central aim of visual poetry – the attempt to combine sign types through two devices: juxtaposition (thereby revealing properties being juxtaposed) and enhancement (adding further layers of meaning to a word or image by use of other signs).

Materiality is applied in the use of found objects and images but digital poetics has altered the reliance of ‘the object’ and offered instead a new materiality where spatial relations reach outside the image and stretch into the digital social domain. Quantification may be achieved through Text Entropy measurement but also through sentiment analysis measurement.

1.4.1 New Visual Poetry

New Visual Poetry in the twenty-first century is broader and more diverse than a brief survey here can explore, but spatiality has become a dominant modality through its development beyond the page, or beyond the object. The inclusion of the digital domain, for example in memes, Instagram posts, hypertext participatory poems and so on, has allowed an internal dimension of relations, similar to Deleuze's conception of the diagram, to evolve beyond the author. Spatiality has become virtual as well as material. Iconicity may be the beneficiary of this, since these newer works become a 'unifying factor' (Ellestrom 2016) of the twin sign types of word, creating a 'new semiotic category.' (Ellestrom 2016). In turn, this propulsion of a new sign type to emerge from the collision of word and image is the closest definition of the conceptual diagram, discussed more fully in chapter 2. In that sense, more recent visual poetry brings us closer to the conceptual diagram than the earlier experiments in the 1960s. In this selected look at examples, I will focus on works that most closely relate to my creative component, emerging from poetry comics but branching out into a less prescriptive form.

1.4.2 Jessy Randall

The visual poetry of Jessy Randall offers a clear example. A librarian at Colorado College, Randall has similarities to Kenneth Koch, and the influence of poetry comics is clear in surface terms but less obvious when one delves deeper. Like Koch, Randall is a prolific writer, poet and a keen educator. Humour is also a thread in her work to the extent that, like Koch, it can lead to misapprehension about her work's underlying serious intent. Koch was also instrumental in Randall moving into visual poetry. 'Even earlier than 2001, I was aware of Kenneth Koch's poetry comics -- I inventoried Koch's papers for sale to

the New York Public Library in the mid-1990s, when I worked for a rare book dealer.” (interview with Russell Evans, 2020) (Randall 2020). Moving from poetry to using visual art soon followed. ‘I began using visual elements in poems in order to use fewer words. I was experimenting with ways of making poems using as few words as possible.’

In ‘The Baby Hygiene Series’ (2016) (example below), Randall takes illustrations from childcare manuals and uses the image against itself, changing its meaning from an endorsement of child rearing to one questioning it. Its feminist tone was the only choice, Randall says: ‘I don’t know if feminist poetry makes much difference in the world, but I can’t write any other kind.’ (Randall, 2016).

In the published version of this piece online the author supplies an audio reading of the same work, which provides a useful aside to discuss how such works are performed or exhibited. Humberstone and Williams (2015) suggest that, ‘if you read a comic aloud you kill it. If you read a poem aloud you bring it to life.’ If there can be said to be greater potential ‘information’ (in Shannon terms) in visual poetry than in text-only poetry, simply due to the intermediality at work, then such reading aloud flattens one aspect of it, reducing the information present. Furthermore, in reading the poem Randall applies different stresses and pace to certain lines which were picked out in the visual version in different fonts. She used her own words as well as found fragments of text from the manuals, and in the audio the original text is read quickly while her own inserted text is recited more slowly, perhaps as a way to retain some element of the visual difference implied by font and size of text.



Above: *Baby Hygiene series, Jessy Randall (2016)*

1.4.3 Nance van Winckel

Nance van Winckel also appropriates fragments from printed culture, using a 13-volume 6th grade encyclopaedia. In 'Water, Water, Everywhere,' below, the design of 1950s encyclopaedias is itself a background semiotic, juxtaposed with a text composed of short phrases or words. Meaning arises in due course: if the eye roams around the page one can assemble in 4 out of the 62 words a theme that matches the nautical tone of the images: the sea, shipping and navigation. Van Winckel wants the words to 'provoke a nonlinear kind of logic, or suggest a larger worldview/context than the text alone permits.' (Aizenberg 2017). As with Randall's work, reading it aloud would remove much

of this inner logic which may inform why van Winckel provides no audio recordings of her work.



Above: 'Water, Water, Everywhere', from 'Book of No Ledge, Visual Poems.' Nance van Winckel, 2016 (Pleiades Press)

1.4.4 Bianca Stone

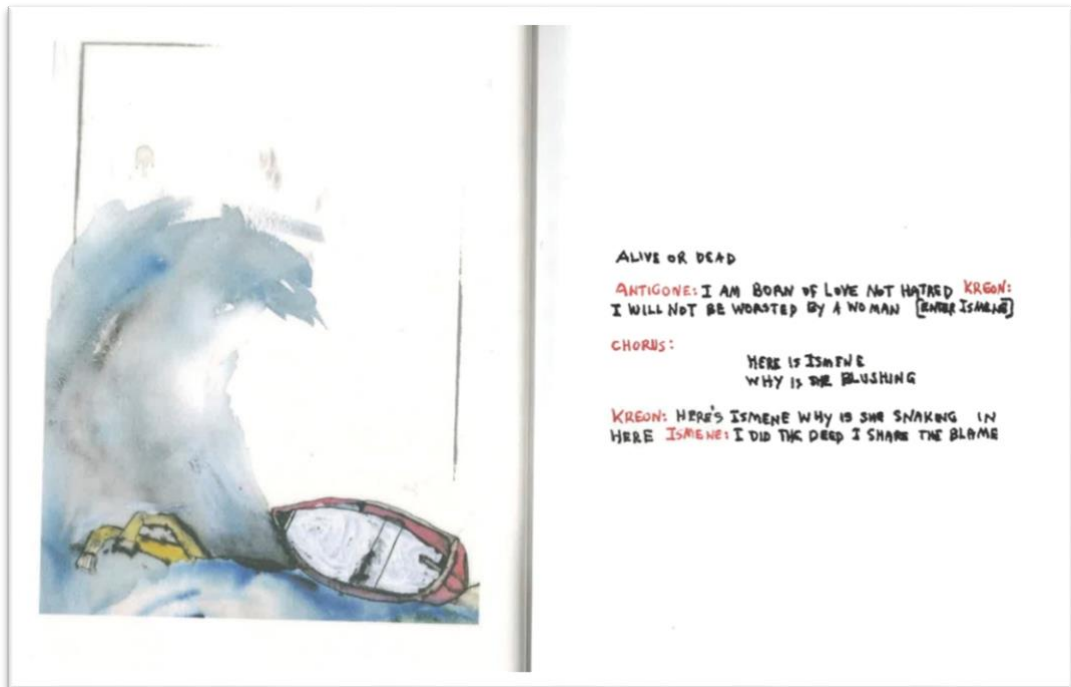
Bianca Stone is one of the most prominent figures in poetry comics in the United States as co-founder and editor of *Ink Brick*, a journal dedicated to poetry comics, and for her contributions to the genre. Stone is equally artist and poet, drawing with brush or pen

and ink while at the same time having her text poetry published in the New York Times. Her work takes a significant step in visual poetry by writing the text by hand. Philip Guston, in his collaborations with Clark Coolidge, did the same but with pen, also matching his drawing of the image. The effect in both is to nudge text and image towards similar cognition, the uneven lines of letter shapes mirrored in the uneven outlines of objects and figures, suggesting to the reader that the text is to be viewed as much as read, and the reverse for the drawn elements.

By using only pen, brush and ink, each of them calligraphic tools, Stone can allude to writing in her drawing and to drawing in her writing. Her work takes a path away from the light-hearted wit, pop-culture allusion and appropriated fragments of culture seen in other poetry comics and instead adopts, as it were, a visual version of the syntax of lyric poetry – that is, the development of meaning in layers as the reader moves through the work. ‘Through an ongoing postponement and redirection of enquiries, the work propels the view page by page into deepening realms of reflection.’ (Stone 2015)

Stone and others use subtle methods of leading the reader from one segment to the next while still allowing the ‘gaze tour.’ In terms of cognition, the images in her work remain as single-glance icons understood quickly (such as a woman holding a body; a house; a figure hovering over the sea), while a sequence of words written using the same pen or brush sits within or around the image. In some of Stone’s work segments of meaning are spatially dispersed, with one discrete packet on one page, followed by the next on another, and as such it can appear to be a series of related drawings rather than a single visual poem. While this does not necessarily detract from the work it does make

accumulation of meaning more transitory because the gaze tour cannot be enacted without turning pages back and forth.



Above: Excerpt from *Antigonick*, by Anne Carson and Bianca Stone (2015)

A series of exhibitions in the United States in the 2000s is credited with developing interest in poetry comics, including 'REBUS' (2014), 'The Fire to Say' (Winkelman Gallery, New York, 2014), and the Poetry Foundation's 'Verse, Stripped: A Poetry Comics Exhibition' (Chicago, 2012) – the latter including 'Antigonick,' a collaboration between Bianca Stone and Anne Carson that led directly to the emergence of poetry comics in Britain instigated by poet Chrissy Williams.

'I was asked to write an article for Hand + Star reviewing Anne Carson's *Antigonick*, interrogating the ways to read it, its collaborative nature, and the book as medium for communication – I very much drew on my own experience as both poet and freelance comics editor. This led me into Bianca Stone's poetry comics work, and also a Poetry Foundation exhibition, "[Verse Stripped](#)". I worked at the Poetry Library at the time so had a load of resources available to me. I guess Kenneth Koch, Anne Carson, Joe Brainard and Scott McCloud's

'Understanding Comics' were the key works that got me "in the mood".'
(interview with the Russell Evans, 2020)

1.4.5 New Visual Poetry in London

Williams then set up an informal poetry comics group meeting in London with established comics illustrator Tom Humberstone.

'[The London group] was formed of poets Chrissy knew who were interested in the intersection of poetry and comics and then illustrators or artists I/Chrissy knew. We met every couple of weeks or so for a few months and I would share old sketchbooks that poets could repurpose. It was also a place for us to discuss ideas.'

(interview with Russell Evans, 2020)

Like the journal *'Ink Brick'* in the USA, the results would be published on Williams' new journal *'Poetry & Comics'* and its Tumblr site. Both *Ink Brick* and *Poetry & Comics* provided a more functional and pragmatic definition of what constitutes poetry comics and one which could be applied equally to visual poetry. Geared toward artists and poets the submission guidelines for the journals indicate how editors differentiate between poetry comics and visual poetry in general. *Ink Brick* suggests that work should be original and not, as Dave Morice's early contributions to the form were, an adaptation. It actively promotes collaborations between poets and artists, noting that they are the norm, and states that works tend to be less than six pages long. But *Poetry & Comics* goes further, determining that economy of line is crucial, and submissions 'should choose whether to prioritise ideas or form' (submission guidelines) (Williams 2015). 'Juxtaposition is an important tool,' and 'comics are generally at their best when the words do not repeat the effects of the art and vice versa.' The final note suggests that the work must have, 'all the right notes not necessarily in the right order' – a seemingly flippant comment that instead suggests that segmentivity (in meaning) rather than sequentiality is preferred.

1.4.6 Defining poetry comics

Addressing the need for definitions of poetry comics beyond submission guides, *Ink Brick's* editor Alexander Rothman puts it squarely as 'a form built from visual language, with juxtaposition as its foundational strategy' (Rothman 2020). This visual language is formed from iconicity, of which cartooning is the most 'readable' given its clarity of line and use of an established syntax such as the comics frame/panel, speech bubble, and onomatopoeic effects drawn as word art. Rothman gives an example of iconicity in a visual poem by Joe Brainard. Brainard took words by Barbara Guest, 'Zing sings a star...' and placed them inside a thought balloon, all inside a series of panels. Rothman suggests here that combining text and visual icons creates a third state of meaning which is itself grouped by the use of the panel or frame. As a feature of comics syntax, the panel/frame is a packager of meaning, operating as a segmenting device to group meaning in packets. It also acts to move the poem forward in time, as words in a sentence do, and '...by separating the various pictures into frames, the illusion of time and space immediately arises and meaning begins to emerge.' Eisner suggests too that these segmented panels hold the key to sequentiality: 'to convey timing...panels become a critical element. A comic becomes 'real' when time is factored into the equation' (Eisner 1985)

However, it is the panel/frame that also creates the clearest gap between comics in general and poetry comics in particular -- and by extension much visual poetry. It is singled out by McCloud (McCloud 1996) in his theory of comics that, when grouped together, the panel/frame offers 'closure', 'a deliberate sequence, intended to convey information and/or to produce an aesthetic response in the viewer.' This theory of frame-equals-closure is reversed in poetry comics, where the frame does not so much

close down meaning as open it up, adding another signifying device among the many already on the page. Bennett (2012) describes this reversal process in poetry comics as one where, 'visual and verbal components can be repeated, layered, removed from panels or presented as a simultaneous series of moments not bound by linear grid lines or narrative.' In other words, an opening out rather than closure.



Above: Excerpt from '1984 Comics,' by Joe Brainard and Barbara Guest. (1983)

1.5 Visual poetry in visual arts

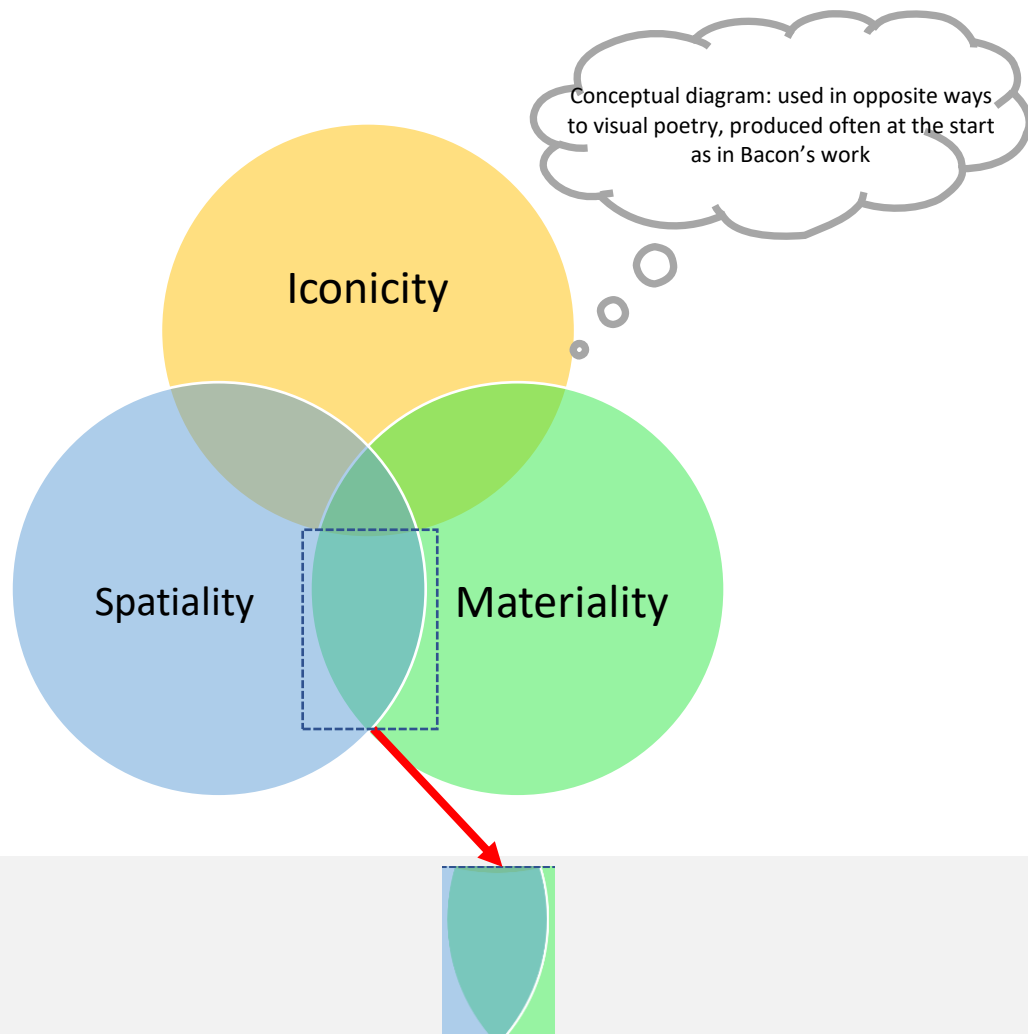


Figure 6: In the visual arts (in particular painting), text has been included since the birth of modernism, with almost no major movement excluding it as a tool. It is used primarily as an object, subsumed into the overall set of devices used in the painting but more often its losing value as language, instead used tautologically, in self-referential ways. **Iconicity** is rarely sought, since the dominant mode is purely visual semiotics, supported by or created by materials used. **Spatiality** is also weak, since it too is subsumed into the overall vocabulary of spatial devices used in the painting, rendered in material terms (composition and forms) rather than aimed at the internal spatial relations that the collision of word and image may create. **Quantification**, on the other hand, is more straightforward, as research into Entropy in visual arts by Sigakia (2018) shows.

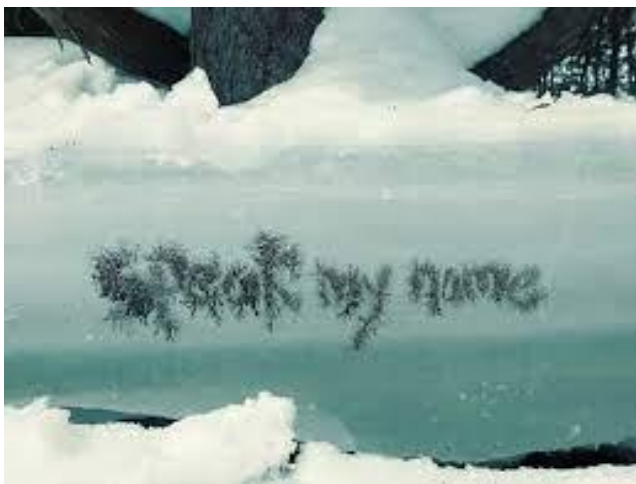
To complete this survey of the most prominent areas in visual poetry I will now explore works that originate from artists, where they collaborate with poets or where text becomes a crucial tool in their work. Artists' use of language sheds light on visual poetry for several reasons: first it acts as a kind of forward party for visual poets, as artists explore the more experimental uses of text in visual work, pushing it often to the limit of visual poetry's definitions; second, it focuses far more on the material used to create the works, as artists are engaged with the medium to a greater extent than those who work primarily with text; third, it offers points to bring debates into visual poetry that were previously discussed only in visual arts and which ask questions about the nature of visual poetry. However, much scholarly activity focuses narrowly on ekphrasis and on painting in particular, which places it out of step with contemporary art and its ongoing preoccupation outside the borders of painting and the gallery. Memes, installation, artificial intelligence, video and social media are among the current sites for visual poetry, whereas ekphrasis as in Kennedy (Kennedy 2012), for example, stays within the confines of gallery-bound painting.

1.5.1 A hybrid medium

Essentially, visual poetry is moving into a 'post-medium' period (Bernstein 2010) just as visual art did in the 1970s as conceptualism took hold. In art, the move away from the strict reverence for the medium – for paint, canvas, metal, ink and others – shifts attention onto the work of art as an object rather than the material that makes the object. This opens the field to allow works to be made from any material at all (such as Martin Creed's Work 227, in which a room's lights were turned on and off, or Tracey

Emin's Tent, which embroidered names of former lovers inside a small tent), making use also of time and digital production. Correspondingly, visual poetry has also broken down further boundaries and includes social media, informatics, hypertext, algorithms and more. It can, in short, be seen in both fields as a move away from modernism. Rosalind Krauss -- 'the most influential opponent of the modernist art theories,' (Chierico 2016) - - sums up this move as one towards *object* specificity rather than *medium* specificity (Krauss 2004). In other words, when it comes to materials anything goes; the medium used simply serves the object, and the artist has no loyalty to one of other medium.

This may be liberating for visual poets but also inevitable in the digital age, where transference of the object across the digital domain strips it of materiality and exposes it purely as the object. The meme is a clear manifestation of this, a raw collision of image and text that does not exist in any physical material form, as is for example Richard Biddle's animated GIFs. Works which rely solely on photographic evidence also benefit from the digital domain, such as Canadian poet Sophie Ann Edwards' ice poems.



Above: Speak My Name, by Sophie Ann Edwards (2019)

Since Solt in 1968, visual artists who incorporate text in their work have left a mark on visual poetry through collaborations with poets or through creating styles that lend themselves equally to visual poetry, just as poetry comics has done. These include Cy Twombly, Philip Guston, Ed Ruscha, and Raymond Pettibon, as well as artists more closely defined by text work including Barbara Kruger and Jenny Holzer.

This debate helps us understand more about visual poetry; its inclusion in this debate acts as a way out of circular discussions about whether visual poetry is a hybrid genre (Huth 2008). Hybridisation is, by its nature, a term which retains medium specificity – of two separates uncomfortably coming together in an ‘unholy alliance’ (Wilson 2018) – and there seems no exit from this circular discussion while one speaks from one or other of the two separates, viewing each as a medium. However, to sidestep this debate one can instead return to Krauss’s ‘object specificity,’ which Dencker (2008) helpfully elucidates as objects of: the environment, cultural fragments, electronic reproduction and hypertext.

1.5.2 Ed Ruscha

The work of artist Ed Ruscha is an example where art and text and the debate over medium specificity meet since ‘he so often invokes the concept of the medium,’ Krauss (2004). But does the fact that his overriding device is the painted word make his work visual poetry? The artist is unabashed about entering the debate about whether the words on his paintings make them poetry. ‘Sure they are,’ the artist replies in an interview (Ruscha 2002, p58), and he later describes his relationship to language: ‘[I] love the language. Words have temperatures to me. When they reach a certain point and become hot words, then they appeal to me. “Synthetic” is a very hot word.

Sometimes I have a dream that if a word gets too hot and too appealing, it will boil apart, and I won't be able to read or think of it. Usually I catch them before they get too hot.' (Ruscha 2002, p76).

How one defines visual poetry becomes crucial in whether such artists' works are visual poems -- definitions fall apart if one tries to label what can be included on purely visual terms, so the modalities described earlier become a more inclusive way of determining the borders of the field of visual poetry. In Ruscha's work, and that of Roy Lichtenstein and German painter Anselm Kiefer, text and image live separate lives, with the artist pushing a wedge further between the two sign types and using the subsequent jarring effect of text as surface disturbance. Ruscha admits as much in interviews, literally objectifying the word in his paintings: 'I was beginning to see the possibility of using non-subjects for subject matter, like words and certain objects.' (Ruscha 2002). Ruscha is using text as synthetic Cubism did with other 'real' objects, subsumed into the overall textural syntax of the painting.



Above: Baby Jet, by Ed Ruscha, 1998

1.5.3 Distinguishing visual poetry from visual art

Philip Guston also retreated from this modernist hegemony after the poor reception of his new work in 1967, largely provoked by Greenberg. Wilson (2018) locates the birth of words in painting at the end of modernism and medium specificity: 'Whereas Greenberg advocated a mode of painting that would define itself and its particular "area of competence"... Guston saw the possibilities for a hybrid art to be located on intersecting planes. It was this condition that allowed writing and drawing to collide and the poem-pictures to emerge.'

However, there are flaws in this argument. Words in painting have been a constant in American art in particular and a significant part of post-war German Expressionism.

Russell Bowman notes:

'One of the key developments in American art of the past thirty years is the frequent use of words in conjunction with visual images. This combination of verbal and visual elements is evident in a broad range of artistic approaches of the period: Pop Art and the related Photo-Realism, Conceptual Art and various documentary or information modes.' (Bowman 1985)

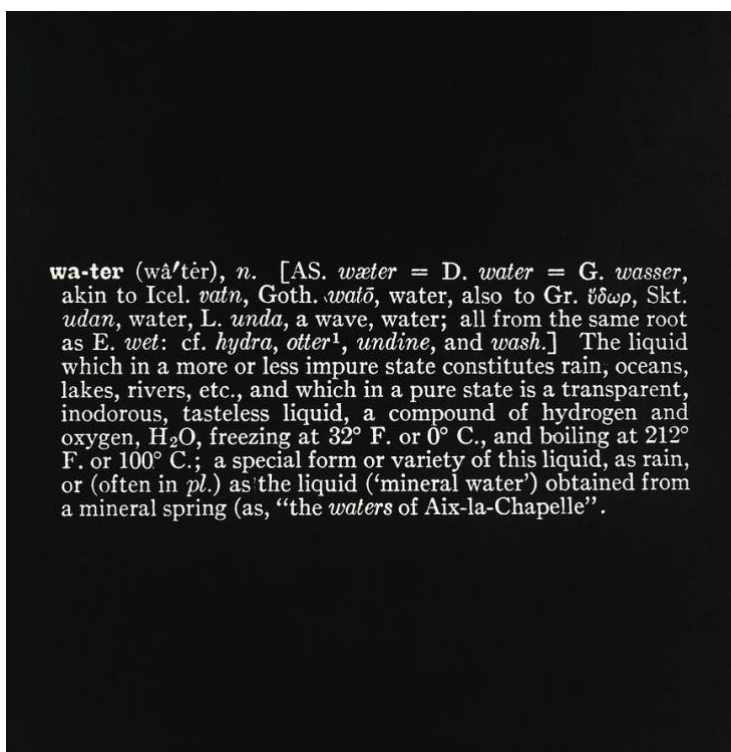
Indeed, it is easier to name art movements in the West which did not make use of text in some way: Picasso's Synthetic Cubism's used newspaper fragments; Abstract Expressionists preferred the flourish of cursive handwriting on canvas, as in Pollock or Frank O'Hara; Rauschenberg pasted torn fragments of words in a quasi-Cubist manner; Lichtenstein used speech bubbles as just one more signifier of the pop cultural throwaway sign; Larry Rivers applied stencilled labels to a face; Oldenberg made plaster price tags and letters; Jasper Johns painted a word LOVE; William T Riley made surrealist use of text and image; Bruce Nauman's neon puns; the dream diaries of Christian Boltanski; the displaced word on David Salle's realist paintings; Bacon's dry transfer lettering; the underscoring of subject matter with Anselm Kiefer's captions – art has

rarely left language alone in the last hundred years. The high point of modernism saw 'a larger interest in language so prevalent among the artists and writers of the 1950s and 1960s' (Penfield 2016) which became a staple of Pop, Conceptual Art and the big 'isms' of the twentieth century, through German Art, Hockney, Bacon, the Young British Artists such as Tracey Emin, Chicago Funk Art and latterly to Basquiat and Banksy.

How, then, to tell the difference between artists who use text and visual poets? The four modalities described earlier offer fields that visual poems sit within are complex when applied to artists, and in particular paintings. *Spatiality* in surface form is analogous to visual composition, but in visual poetry becomes so much more than a simple arrangement of objects on canvas. It instead creates internal relations, dynamism and a tension of the colliding sign types. *Quantification* is, conversely, easier to measure in recent research (Sigakia 2018) through use of pixel analysis but also human participant cognitive analysis. In paintings that use text, it is *materiality* that becomes dominant, and the crossover of spatial composition with materiality. *Iconicity*, however, will often appear only coincidentally in such paintings, since the aim is not to create a merging of images and words to lead to icons, but instead for text to serve the painting, just as Ruscha describes above. The self-referential use of text also undermines meaning in the actual words, just as concrete poetry attempted. Or text-as-caption serves to re-enforce meaning, as in Kiefer. Rarely have artists followed the route of visual poetry where iconicity intersects with internal spatial relations and materiality on equal terms – where word and text develop fully without one serving the other.

The conceptual diagram is, as it were, the shadow cast by the varied ingredients of visual poems, but a shadow that is disproportionately large, hinting at something else that is

created when all is combined. Visual poetry is so self-aware of its place in the no-man's land between text and image that it loses self-identification, which perhaps is what lends it an instability, and a dynamism. However, much of the art of the twentieth century that used words does so with its identity firmly intact as art. Rarely do the artists above use text other than as a medium just any they do any object. Nancy Spector noted that Joseph Kosuth, in his paintings of pure text dictionary definitions, 'employed language itself as his medium' (Spector 2018).



Above: *Water*, by Joseph Kosuth (1970) © MoMa

David Salle says he painted the word 'fromage' on a painting because it just 'popped into [my] head and just felt right' (Bowman 1985), like any other element in his painting. Ed Ruscha, on the other hand, uses the word on the canvas as anti-subject matter: 'I was beginning to see the possibility of using non-subjects for subject matter, like words and certain objects.' (Ruscha 2002). What these and others have in common is that they play

with tautology, sorted by Penfield (Penfield 2016) into two camps – those who use text tautologically and those who use it anti-tautologically, in other words, self-referential or not. The self-referential would include Pop Art, while the flipside would be the more earnest Kiefer, Salle, and those who try to throw off the weightiness of the entire debate by opting for a light touch use of text as in Hockney or a destruction of the word as in Bacon. Both camps use the word as material, as an object to stir the surface plane into dynamism. Text has a purpose and it must serve the painting first and foremost.



Above: Figure in Movement (detail), by Francis Bacon (1972) (showing use of Letraset dry transfer text)



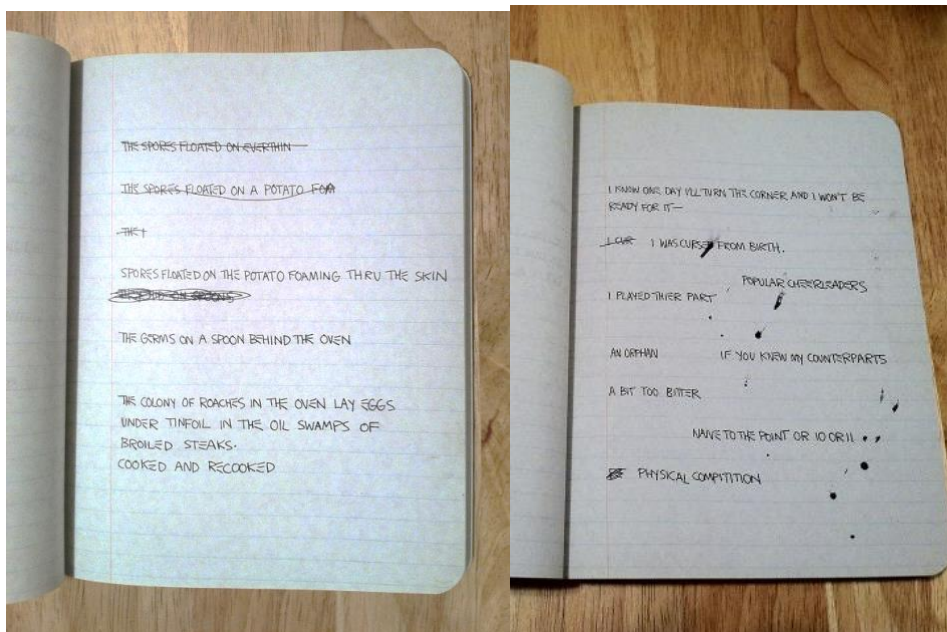
Above: False Start (detail), by Jasper Johns (1962) © MoMa

Cooper (Cooper 2009) suggests that the self-referential imaging of words in, for example, Johns's 'False Start,' ultimately leads to a false unity. Calligrams, he says, are

the fusing of word and image into one form. But in work such as Johns,' 'these fusions declare the divorce rather than the marriage of word and image ... They are anti-calligrams.'

1.5.4 Jean-Michel Basquiat

If words only serve the ultimate purpose of the painting it would take, then, a particular artist to allow words joint presentation on the canvas rather than simply perform a service. Jean-Michel Basquiat may be one who does. His work as a poet¹¹, evident in his extensive and careful notebooks of word collections, phrases and poetry, is less well known than his paintings but an exhibition of his notebooks revealed the extent to which he worked at the textual elements of his paintings. Unlike



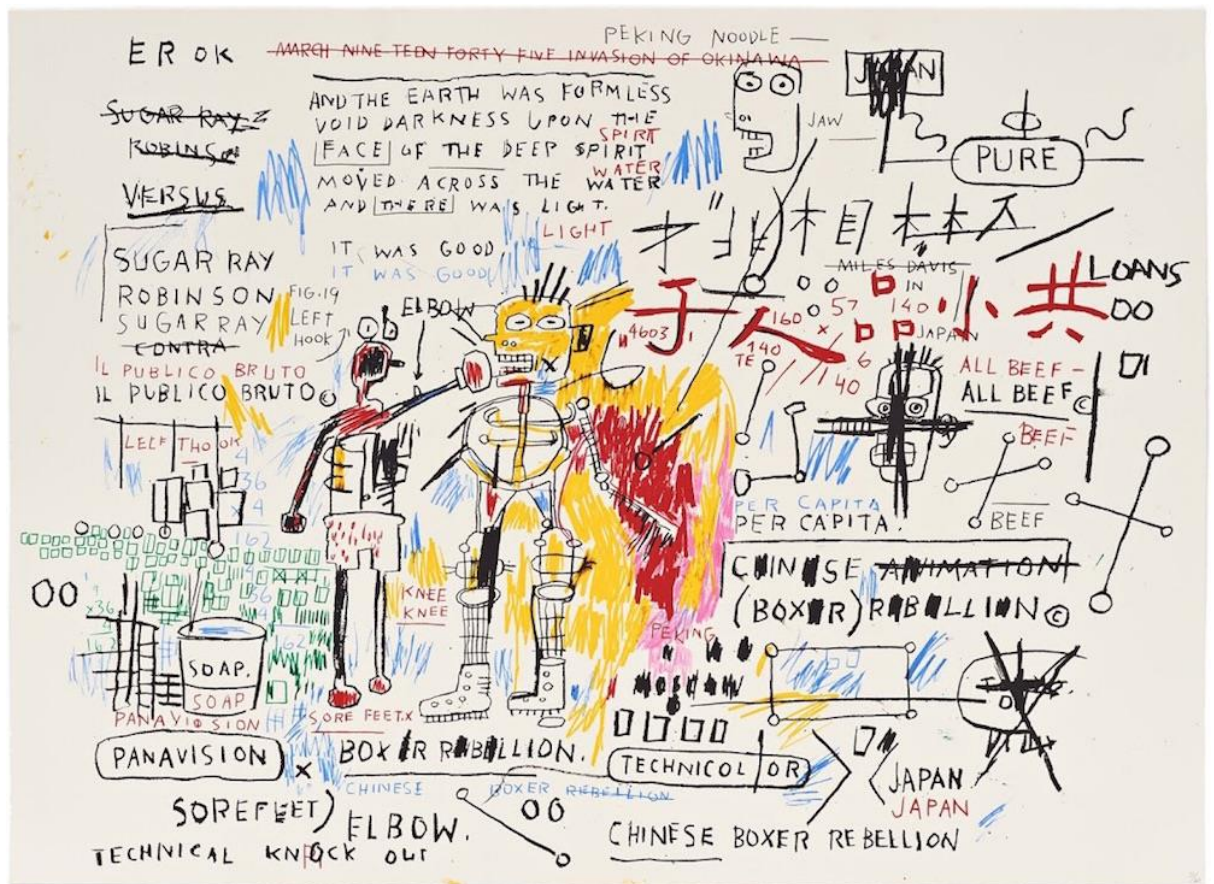
Above: Basquiat, notebook pages, from 'The Unknown Notebooks' exhibition at Brooklyn Museum, 2015. Image from Hyperallergic magazine

11 Liberty, 2015, notes about Basquiat's poems: 'Their status as poetry is noted in Jennifer Clement's 'Widow Basquiat,' the story of Suzanne Mallouk, Basquiat's on-and-off girlfriend: "Jean-Michel comes into the bar every day. He reads Suzanne his poems from his 'Black and White Notebooks.'" Liberty, M. (2015). "An Intimate Reading of Jean-Michel Basquiat's Poetry." Retrieved 11 December, 2021, from <https://hyperallergic.com/217021/an-intimate-reading-of-jean-michel-basquiats-poetry/>.

other artists listed above, Basquiat has most in common with visual poets who engage with words separately and in depth before assembling them with the visual elements. The first exhibition of Basquiat's notebooks charts how the artist does not *use* words but instead includes them on equal footing with imagery.

...the notebooks can be understood as a carefully cultivated set of concerns and strategies that the artist revisits repeatedly over the course of his short career — these include words (like the Spanish word “FALSO,” which surfaces in drawings and paintings as well as the notebooks) and turns of phrase that he edits from notebook to notebook. For instance, from 1980 to 1981, Basquiat wrote three different versions of a scene about a drunken man falling down in a plaza. What endures in all three is the textual fragment, LEAPSICKNESS/THE LAW OF LIQUIDS, an exquisitely concise phrase that captures the arc of public addiction: that is, what goes up must come down. This display of the artist's editorial process is one of the show's strongest features.’ (Knight 2016).

The exhibition's curator Dieter Buchhart proposed that the show, ‘demonstrated the ease with which the artist deployed letters, words, numbers, lists and phrases as integral components of his work.’ (Buchhart 2017) Critic Klaus Kertess suggested that Basquiat ‘used words like brushstrokes. In the beginning of his creation, there was the word. He loved words for their sense, for their sound, and for their look; he gave eyes, ears, mouth – and soul – to words’ (Kertess 2015), while Knight, (Knight 2016) reviewing the show, believes that ‘this exhibition recasts him as a poet, or at the very least a writer.’



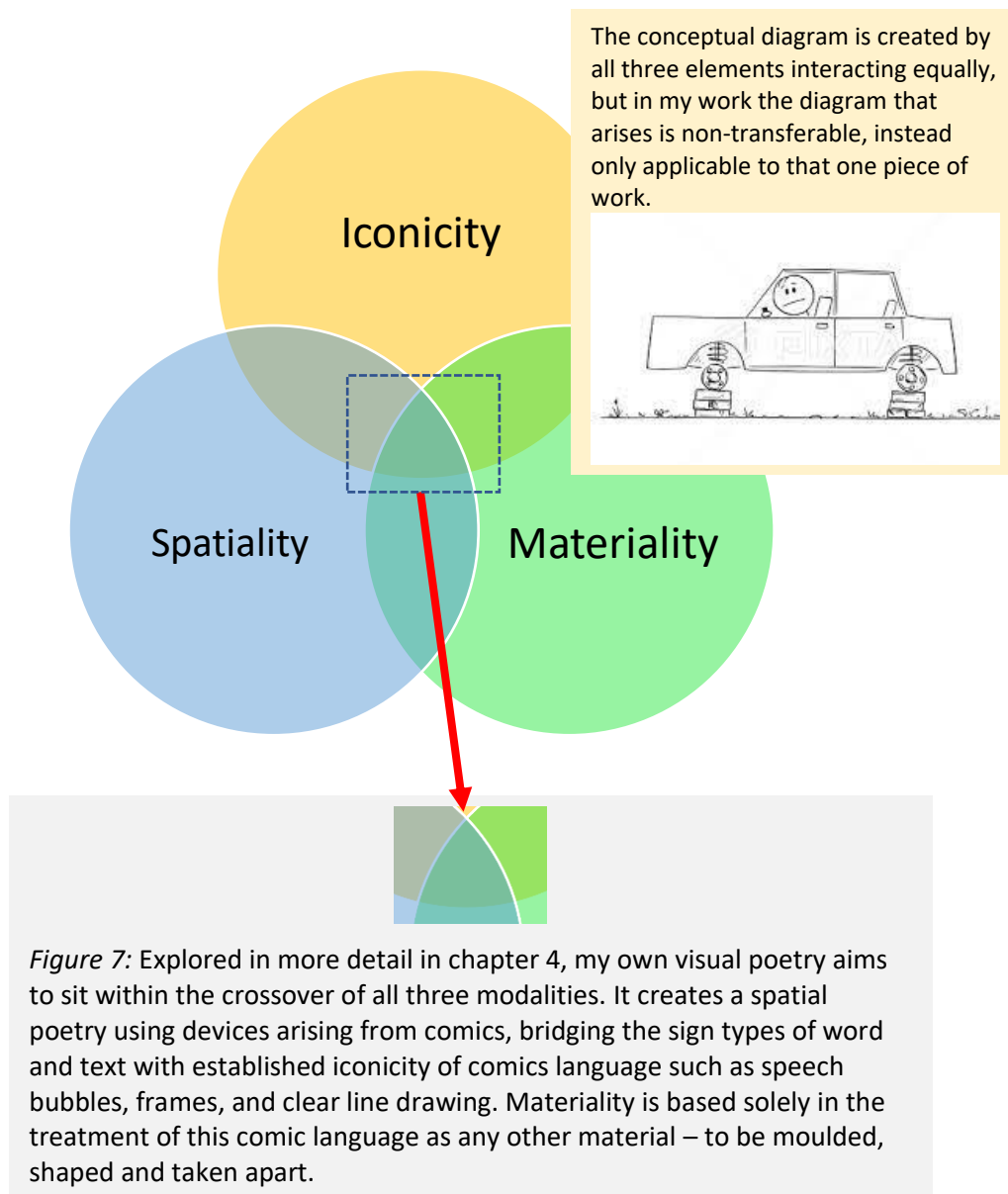
Above: *Boxer Rebellion*, by Jean-Michel Basquiat (1982)

To draw these points together, Basquiat is markedly different to artists who use words as objects for several reasons: drafting and redrafting phrases over time; forming patterns and themes in his text choices, seen chronologically in his notebooks; valuing the interior of words (meaning, shape and sonic property) over and above their tautological self-referentiality; gathering phrases and words from his surroundings in Brooklyn as much as he did images of his environment; took cues not just from crafted phrases he evolved, but also language in its fullest potential using phone numbers, lists, brand slogans, newspaper headlines.

Finding artists who incorporate text in their work is less difficult than finding those who use it in ways that ally with visual poetry. The wide use of words, however, has not

necessarily had a proportionate impact on visual poetry, at least from visual poet's statements, which rarely reference such artists. What has made an influence on visual poetry has been the wealth of text in the real world, in numbers, lists, books, flyers, posters. In this way, the clearest evidence that Basquiat is closer to visual poetry is simply that both he and visual poets appear to draw from the same well, allowing the world of language ephemera to appear on equal footing with visual elements.

1.6 Development of a personal visual poetry



This chapter has so far laid the groundwork for chapters 2 and 3 by presenting concepts and texts that run throughout the dissertation, so it is useful therefore to complete this chapter with regard to my own practice in chapter 4, which explores and justifies the creative component of this research.

Jim Rosenberg described my work as 'spatial poetry' rather than diagram poetry (email to Evans 2020) which although intended as a minor taxonomic point, highlights an issue which I explore further in chapter 4. Running through this dissertation is the idea of the conceptual diagram, a blueprint that hovers above the artefact that gives it presence and the environment that inspired that artefact. That blueprint can break free of the artefact and impose itself elsewhere, becoming a transferable paradigm, and as such possesses its own interiority, dynamism and motivation. Foucault and Deleuze map this concept fully, described in chapter 2.

If this conception of the diagram offers insights into visual poetry it is because it offers a way to draw together both text and image and arrive at something that is more than the sum of their parts. Artists who appropriate words do not allow this diagram to take flight, nor do poets who illustrate their work. It is the collision of both text and image that cause a disruption in cognitive terms, in sign terms, and purely textual terms which releases potential for wider meaning than purely image or text. It is in this wider meaning that the diagram resides.

But my own work truncates this process and constrains the diagram from reaching its potential as transferable. My visual poems are less transferable blueprints than a series of one-off prototypes, possessing the attributes of a diagram – inner dynamism, momentum, working parts that go on operating with the reader – but disallowing them the crucial exit card of being applicable to other situations, moments or experiences. Described as 'headless diagrams' they nevertheless confirm the diagram's anatomy simply by what is missing.

Under the radar of the diagram, the visual poems are more easily discussed and are described as systems that self-operate, rather like DeLanda's 'assemblage' seen in chapter 2. In each visual poem, the centrifugal force of memory to gather around itself the present, the past, objects, times and questions creates a statement that cannot be applied elsewhere, so remains self-contained as a diagram, circulating within itself with an unanswered 'how,' 'why' and 'who.'

The system that is created within the poems is examined to reveal its own constituent parts, with a cell-like structure of 'gestalt episodes' that make up the visual poem. These bundles of meaning are informed by black humour, partly through the irreverent visual vocabulary of the comics form, but also through irony. They use the spatiality of the comics page and the materiality of the way comics unpack words using frames, speech bubbles, onomatopoeia and treat words as a malleable medium. The joint iconicity of text and image is found in this comics form, but also within text itself where a more complex form of emoji language is used to place images at the heart of text. The overall meaning can arise from two places: the content itself, and its references to addiction, overdose, death, child abuse, violence, poverty, class; and the form it takes on the page, with darkly comic reproaches to its content, draining it of tragedy and imbuing it with a sense of hope.

1.1.6 Conclusion

Visual poetry is hard to define if one looks at it squarely, piece by individual piece. But stepping back and allowing a view of the fields it inhabits to come to the fore may be

more fruitful. Whether the modalities outlined at the start fulfil this is down to how they survive when applied, which is seen in chapters 3 and 4. The diagram that emanates from the fusion of text and image is sometimes intended, sometimes not, and in many cases is so explicitly present in the page itself that it cannot break free to apply itself elsewhere at all. My work conforms to this, as does, for example, the work of Jessy Randall, and the comics of Bianca Stone. But where the content of these works might not give rise to some replicable idea that can drift away and apply itself elsewhere, the form they take certainly does; it is the disruption of a word by an image and vice versa that casts ripples into the surface of the separate disciplines of art and poetry and creates its own diagram of disturbance.

Chapter 2: The Conceptual Diagram



2.1 Introduction

Diagrams are not what they seem. Since the 15th century the diagram has taken on many guises, both as a way of giving information in visual terms and also as an invisible model which paraphrases something that happens in the social field and creates a schema of it. The diagram almost always blends image and text in its physical form, so has a direct effect on how to understand the genre of visual poetry.

The diagram was first applied as a magical device to turn iron into gold or to effect changes in the self or body, then became a way to categorise the natural world, reflecting a similar structuralist move in language at the same period in time. If it was a machine it could be described as representing two dimensions, first the production of meaning, as intended by its maker. But it also possessed a dimension of information about the operator and creator that machine. The first was intended, the second perhaps unintentional if one seeks to uncover the social and language structures that created it. It is this second iteration which is explored by philosophers of the diagram.

But outside of its physical version, the philosophical version on the diagram – the *conceptual* diagram – gives a more multi-dimensional view of something that occurs within human relations, societal and personal. This invisible diagram also has something to offer about how we understand the visual poem, but also offers something quite different in how text and image work when placed together. It is not a representation of how diagrams of text and image work internally, but is ontologically a realisation of their workings. Understanding this conceptual version of the diagram gives deeper

insights into the fission that happens when word and image as two sign types converge with each other and also absorb power structures in society, language structures, and social phenomena. The outcome is more than the sum of its parts, since it loosens its ties to that which created it and becomes a self-sustaining conceptual diagram capable of being applied to other phenomena. For visual poetry, little else describes the physical diagram and the virtual diagram that emanates from it with such precision. Taking apart the conceptual diagram gives an inside look at the virtuality at the heart of the visual-textual collision. It also enhances understanding of my own creative work in chapter 4 and offers insights into the case study of Jim Rosenberg in chapter 3.

For clarity, I will use the term ‘conceptual diagram’ when referring to the virtual form that Deleuze, Foucault and others have explored. ‘Information diagram’ will refer to the more commonplace visual kind used to display information or ideas in visual form.

2.2 Defining the conceptual diagram

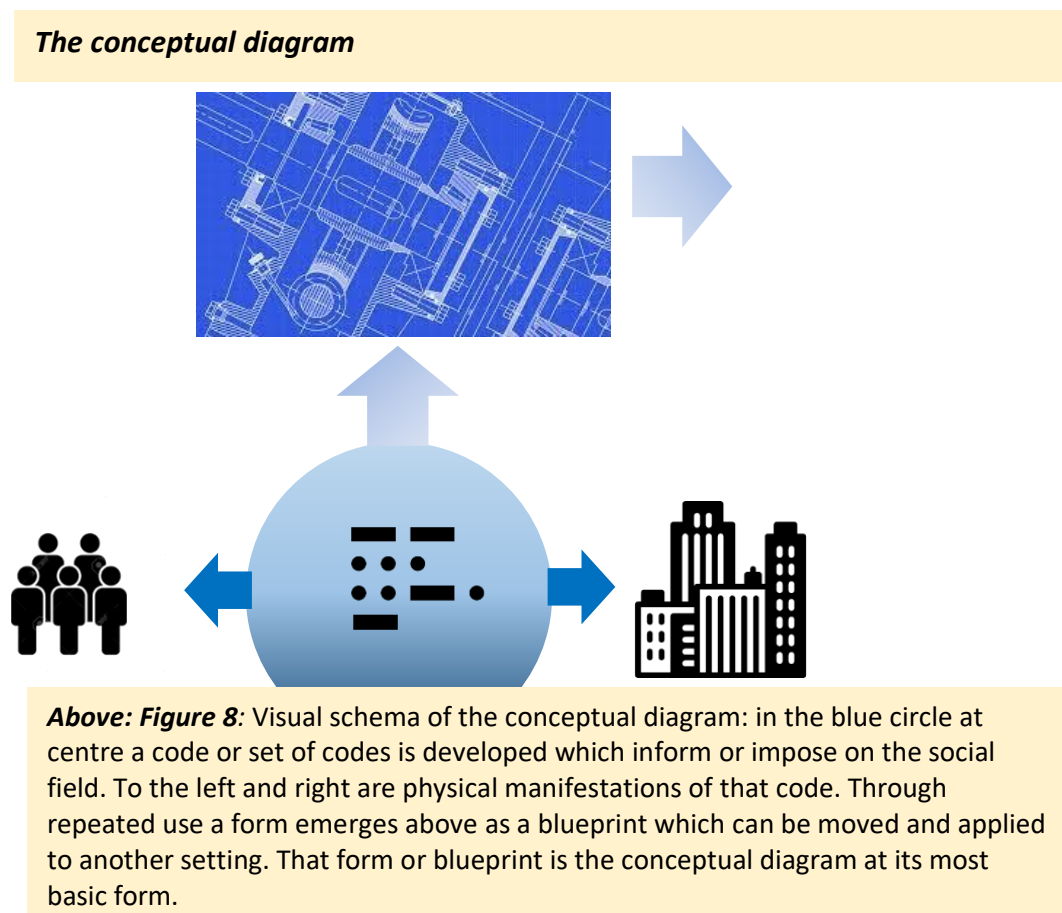
2.2.1 Methodology

The conceptual diagram is a model or paradigm that is an abstraction of a particular phenomenon. The difference between the conceptual diagram and the information diagram is as wide as the difference between a real event and a recording of an event – the information diagram is an epistemological rendering of phenomena, while the conceptual diagram is held by its philosophers to be ontologically here and now, as an acting, dynamic and time-based episode. Another way to view the difference is that the information diagram is a blueprint for a machine, while the conceptual diagram is a machine itself.

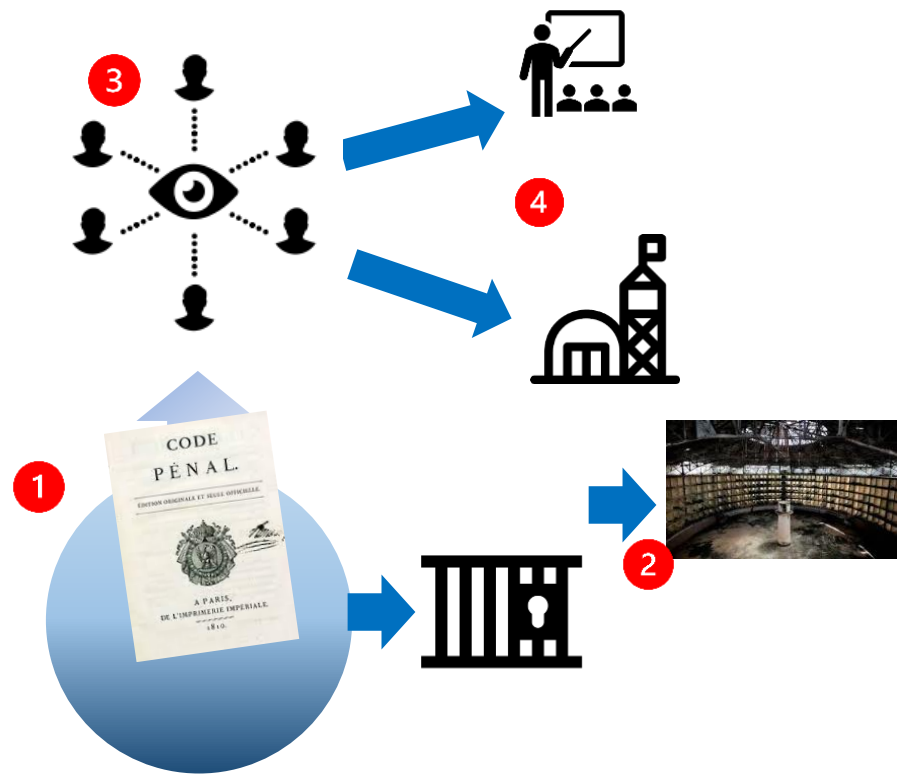
The conceptual diagram is typically made up of two elements – visualised as a **physical** side and a **virtual** side, which together create the diagram above it. The visualising of the diagram in this way is common in all but Foucault's work; he too describes an identical duality of the virtual and the physical on either side of the diagram, but stops short of a specific metaphor of the pure concept, but does offer the most tangible examples of it in society (Deleuze 1988). Each theorist pictures the diagram in the same way but varies concerning which part comes first – the diagram or the two elements below. Foucault names the virtual the 'discursive' or the 'statement' (Deleuze, 1988: 31), for Eisenman it is 'interiority' (Eisenman, 1999: 175), while for Deleuze it is 'social systems' (Colebrook, 2002: 81).

I will trace the structure and properties of what Foucault calls the 'discursive' (Zbedik 2012) element of the conceptual diagram and its potentialities in the social field, both in power structures and its more benign product in architecture as described by Eisenman. This will then lead to the diagram as realised in text and image, and in particular examples of both that co-opt the diagram as a means to greater aesthetic actualisation. I will also outline two antecedents of this form of the diagram, as found in alchemical engravings in the fifteenth century and in the natural sciences in the nineteenth century. The aim is to explore definitions of the structure of the conceptual diagram and its physical potential. The former refers to its interior relations, the latter to its exterior relations. This is not an in-depth analysis of the conceptual diagram but rather a selected approach that looks at what can be derived from it for visual poetry.

In investigating internal conceptual diagram structure, I will focus on key theorists Deleuze and Guattari who explore the units that compose the diagram and the forces that are created by it; the architect Peter Eisenman looks at examples of diagrams arising from a client's 'discursive' instructions; and Foucault and Barthes look at the mechanics of it arising from the encyclopaedic plate. To apply a method for this enquiry, this chapter will look again at the sciences and – taking a lead from Deleuze (Deleuze 1998) -- use models from post-classical physics to explore the abstract machine of the diagram. To explore the exterior relations of the conceptual diagram, Eisenman will point to the power of it to effect [*sic*] its surroundings, Foucault to the power structures held by the diagram in the social field, Deleuze to the 'social machines' (Colebrook 2002) that echo Foucault's structures; and Barthes to the structures of language that may be seen as similar to the diagram.



The conceptual diagram: Foucault's prison panopticon



Above: Figure 9: In Foucault's *Discipline and Punishment* the French prison system is described as a conceptual diagram. The French penal code ① gives rise to an approach to prisoners which is all-seeing, removing liberty through constant surveillance. Once applied to a prison the panopticon ② emerges as the physical manifestation of this approach to discipline and punishment. Once this form emerges it can be detached ③ and float free elsewhere, applied as Foucault suggested to a barracks, schools or other social environments. ④

Beginning with the code which is seen in the diagram above as a blue sphere, this is described as a set of practices or prescribed norms, as emergent models that are abstracted from existent social phenomena such as disease, war, or employer/employee relations. There are, for Foucault, in every transaction of power impressed on the social, the same two elements of virtual and physical and through their application to the world around them they give rise to the conceptual diagram above. As an example, Foucault suggests the prison system (see *Figure 9*). He begins with the penal system as a code

which has emerged as a way to treat prisoners in society but arises out of other social codes such as the feudal system, empire, slavery and other power relations. Building an actual prison, for containing prisoners, these codes inform the design. These codes are, for Eisenman, informed by common shapes and physical forms we encounter such as Russian dolls, veins and arteries, layers of an onion, ploughed fields and so on. Codes merge with forms to create a physical manifestation.

Once enacted, a diagram is formed which can be applied elsewhere. The diagram lent to the prison building by the penal system, is that of seeing-without-being-seen, the panopticon, of surveillance and the withholding of power, embodied by the physical architecture of the prison. These physical manifestations of the diagram are the 'non-discursive' (Foucault 1991), or the 'exteriority' (Eisenman 1999), or 'unformalized matter' (Deleuze 1988). For Vilder (Vilder 2000) the diagram is 'operating between form and word', imposing its effect on real physical places and interior spaces. Whether the diagram itself causes the physical and the virtual or whether it is the reverse depends on whether the diagram is seen as benign or as a determinant of power. In Foucault, external phenomena give rise to the diagram which is then enacted as both social code (the virtual) and physical operation (buildings, spaces, places, actions).

In terms of the visual poem, conceptual diagrams could be described as the energy that is released when text and image combine. When visual signs and word signs combine a new dimension is formed: 'Foucault says that the visible figures and the signs of writing combine, but in a different dimension to that of their respective forms' (Deleuze 1988). This grappling or collision of signs is not without consequences, as Deleuze suggests in this oblique quotation, referring to what he calls a 'battle' unleashed when the adversaries of text and word as opposing sign types, meet:

'...Foucault said that the grappling implies a distance across which the adversaries "exchange their threats and words," and that the place of confrontation implies a "non-place" which bears witness to the fact that the opponents do not belong to the same space or rely on the same form.' (Deleuze 1988)

The bridge between these two 'adversaries' which are so opposed and take different forms is the conceptual diagram, which speaks the language of both and in so doing becomes detachable from both, able to float elsewhere and apply itself to another setting. Text and image are two similarly divergent sign states, and a persistent theme in my own creative work is the development of a conceptual diagram to assign to each piece of work. In other visual poets, too, the invisible conceptual diagram appears as a device capable of speaking the language of text and image.

2.2.2 What is a diagram?

For Vilder (Vidler 2000: p6) the conceptual diagram "...is performative rather than representational," and so does not represent anything outside itself. In this respect this definition is closest to my own creative work, as described in chapter 4. Because of this property the conceptual diagram also cannot be defined through what it is *not* – i.e., through difference -- or described through comparison. Instead, its properties are better mapped by defining its internal relations. Consider the word 'dialogue,' which is understood as an exchange of words, the root 'dia' meaning 'through' (OED), suggesting a field that operates within and around the two participants. If one applies this prefix definition to 'diagram' the word is referred back to its operational meaning, of an activity. This etymology helps inform the conceptual diagram as it evolved from the roots of the information diagram from alchemy, natural history and the encyclopaedic plate, and on to contemporary uses in social philosophy. In this definition, it is a dimension of interactive forces. More recently, the diagram reveals 'latent social

structures' (Eisenman, 2007) in a definition that arose in the second half of the twentieth century in social philosophy where it gained impetus and political edge in works by Foucault, Lyotard, Barthes and Deleuze.

Overall, the theorists here converge on several key diagram properties. First, the diagram is 'motivated' (Eisenman, 1999: 172) in the sense that it possesses momentum and is self-sustaining (Zbedik 2012).

Second, it is transposable as it can be planted elsewhere in a new physical setting. Thus the diagram of the panopticon (seeing without being seen) is a cause or effect (Deleuze might say both) of the French penal code and is manifested in a prison building and its prisoners (Foucault, 1991). The same diagram can be applied to a barracks, a school or a street, where its functions will remain intact.

Third, the diagram has no end or beginning but is rhizomatic in form. As with the botanical rhizome, it is constructed of lines (Deleuze 1998) that striate the form. Much emphasis is placed on 'the line' (as in a drawing) in Foucault, Deleuze, and the architect Eisenman, where the diagram is embodied in the sketch, used in a similar way to that described by Francis Bacon in his initial painting outlines (Sylvester 1980).

Fourth, each definition of the diagram suggests that it is an 'abstract machine' (Deleuze 2014), a 'map of relations between forces,' (Deleuze 2014). It has functions, as Foucault says, and continues operating after inception (Deleuze 1988). This leads to the fifth property, that the diagram, like a self-learning AI algorithm, does that which leads to its expansion or entrenchment. "Deleuze ... tells us that two diagrams communicate by

reciprocally exchanging elements” (Zbedik 2012), that its impetus is to seek other diagrams, to transpose to new settings and link with other neighbouring (social) structures (Deleuze 1994).

Finally, the diagram is composed of forces, lending it momentum, impulse and motivation. In Eisenman these are benign models to lend resonance to a design for a building but in Foucault they are pernicious, evident in *Discipline and Punishment*. Deleuze, however, sits between the two but often defers to Foucault’s terms (Deleuze, 1988).

Returning to the overall outline of the diagram as described in Figures 1 and 2, above, Foucault’s determining of it is one that *precedes* the virtual and the physical and is persuasive in giving particular models, going so far as naming them and attaching them to periods in history. Eisenman’s depiction is the more visually empirical since it centres on the tangible built environment, so in practical terms the origin of a diagram starts in the client’s wishes for their building, which the architect can assemble in a physical form, finding the right diagram to embody them.

2.2.3 *Space in the diagram*

Lyotard, on the other hand, breaks down the concept semiotically (Bogue, 2003), and this offers a useful insight when applied to visual poetry. He too refers to a space ‘in between’ two elements, but rather than identify these as the virtual and the physical (for example the penal code and the prison, respectively) he sees the space as sitting between signifier and the signified, which takes a more causal approach where the virtual leads to the physical. It is a kind of ‘chicken and egg’ argument, however, as to whether code precedes prison, virtual precedes physical, and so on, but can be

sidestepped by again looking at the in-between state that separates both. It is this that gets closer to visual poetry, as it excludes dominance of one sign type. Neither word nor text, signifier nor signified, can dominate, and in turn any attempt at trying to determine whether word begat image or vice versa is pointless, especially since more recent cognitive linguists suggest both originate from a similar embodiment of primal meaning-making from our physical environment (Lakoff 1989).

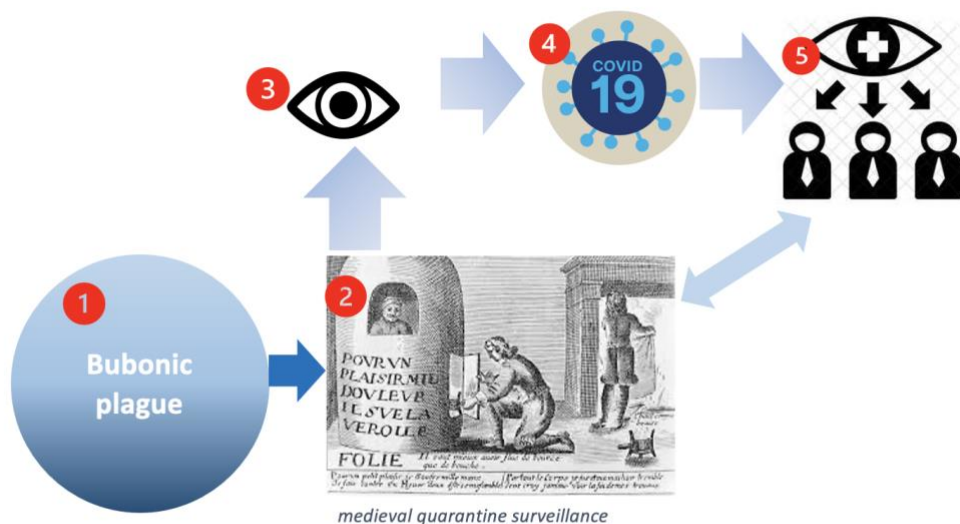
In this space in between image and text, the visual is manifested as icons where 'it constitutes a domain unassimilable within codes...' (Bogue 2003), or at least not wholly translatable into text. But then, words too would not be translatable into image, particularly if maintaining the spatiality of separate signs or the syntax of a sentence of words. Instead, both word and image are defined not by their sign properties but by being performative, by doing things. Deleuze shared this view, that the diagram is 'a productive machine that does not represent anything (Zepke 2005).' Deleuze here brings in another layer to the conceptual diagram to reinforce its performativity, adding the dimension of time with the term *assemblage*, a self-clustering of all the events that make up the diagram: 'Content is not a signified nor expression a signifier; rather, both are variables of the assemblage.' (Deleuze 1998).

2.2.4 Models

But it is with Foucault that more tangible models are provided which enable closer scrutiny. He offers a loop in which the diagram condenses a phenomenon into a paradigm, which is effected on the social field, and which entrenches that paradigm. The diagram in this case would be pre-existing, found in some previous historical event and which now provides a model for a new historical event. In *Foucault*, (Deleuze, 1988)

Deleuze selects two such Foucaultian models or diagrams in which the event was a disease. For the modern disciplinarian society, “...if there is a model it is that of the ‘plague,’ which cordons off the stricken town and regulates the smallest detail.” (Deleuze 1988). A second is from ancient societies where, “we can see that they also possess a diagram... to divide the masses rather than to isolate the detail, to exile rather than to seal it off (its model is leprosy).” (Deleuze 1988) Elsewhere, Deleuze describes the ‘Greek diagram,’ the ‘feudal diagram’ -- as many as ‘there are categories of power.’ (Deleuze 1988).

The conceptual diagram: Example – surveillance and plague



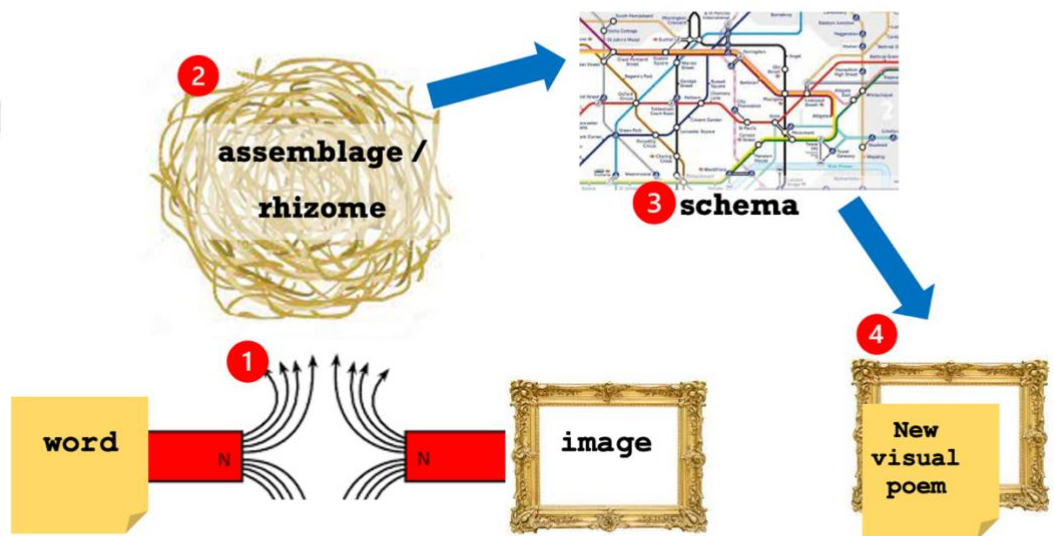
Above: Figure 10: In Foucault’s *Discipline and Punishment* (1991) a crisis emerges out of the bubonic plague **1**. Towns and villages are cordoned off and scrutinised **2**. A paradigm, or conceptual diagram, emerges of surveillance **3**. When the plague has receded, the diagram remains ready to be applied in other scenarios. When Covid-19 struck in 2020 **4** this conceptual diagram was ready and was applied **5** more evident in authoritarian societies such as China which operated a zero tolerance approach to the virus. Other societies may adapt the diagram and base it on a consent model.

Eisenman takes the diagram elsewhere, neutralising it of its authoritarian power relations in diagrams which function in an identical way to Foucault -- with the same forces, patterns and self-sustaining operations -- but which arise from nature (the DNA

double helix); mathematics (the Mobius strip); the body (neural functioning); technology (liquid crystal); and culture (Russian dolls) (Eisenman, 1999). These could be termed 'prime number' phenomena in that they are irreducible. Eisenman is able to pare down his definition of the diagram to essentials – it 'forms matter and formalises functions,' (Eisenman 2007) neatly linking the two sides of physical and virtual. Hovering above 'forms' and 'functions' there is the diagram.

In this description of the conceptual diagram, visual poetry sits as a product of collisions of sign types, leading to an in-between state that acts as a common denominator for both, but goes further by representing the performativity resulting from the collision. The resulting assemblage of action can be schematised, which in turn can then be applied elsewhere. A very different operation exists in artefacts where a single mode of signification dominates, as in visual arts and in particular painting, where at its most potent uses the conceptual diagram comes first, which is then schematised.

The conceptual diagram: visual poetry



Above: Figure 11: In visual poetry the word and image are used but both use incompatible modes of signification. As both repel the other **1** in the collision of sign types the resulting state is the assemblage, **2**. Now, there is no signifier or signified, both become subsumed in the assemblage (Deleuze 1998). From this, a schematised version can be derived, represented here **3** as a train station map, which itself schematises a physical place. This schema is now shorn of connection to its original instigator of word + image, and is ready to be applied to another visual poem. **4**

2.3 Beginnings of the conceptual diagram

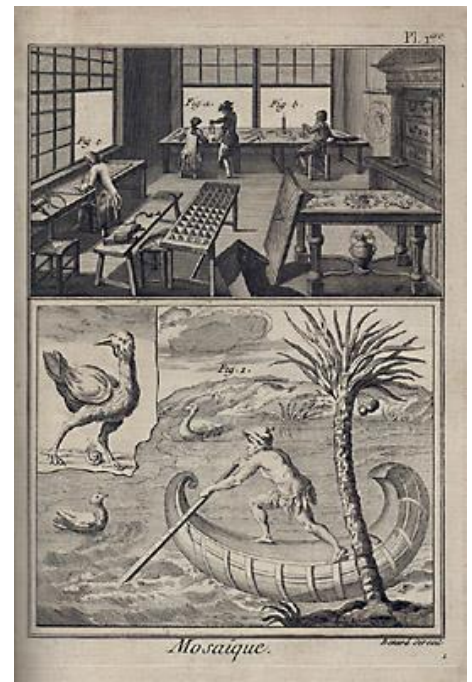
2.3.1 Antecedents of the diagram

Antecedents to the diagram begin at two points, both of which are rooted in the classification of knowledge. The first unwittingly opened itself up to deeper analysis as it reached a vacuum of knowledge, while the second laid claim to a knowledge vacuum with similar visual devices. The first arose in alchemical sciences in the medieval age, and the second from the natural sciences into the encyclopaedic plate. Visual similarities between the two, centuries apart, are clear.

Rather than produce a timeline of the development of the diagram, I instead focus solely on these two points because of their close correspondence to my own creative work in chapter 4, and to the examples of visual poetry in chapter 1. My visual poetry is defined less as text to be read and more as 'systems' that perform, that can be operated by the reader in the way their gaze falls. These systems, contained within the images and text that make up the visual poem, have something in common with the diagram as a working object that was developed in alchemical drawings and in the encyclopaedic plate.

2.3.2 Alchemical diagrams

Alchemy was a branch of natural philosophy that was part of the long-running crossover of science and magic, that was aimed at 'investigating the universe and giving oneself the power to alter the universe', including creating gold out of iron. In their long and ultimately fruitless search for such transmutation, the diagram became a central tool for the late-medieval alchemists. In the fifteenth century, detailed engravings described processes, events and hierarchies, with complex symbology. They were not intended to be aesthetic objects, and were instead to be seen as ornate machines, designed to make something happen in the physical world. But what they ultimately reveal, to us six hundred years later, is the minds that created them. As Law suggests, "[i]f diagrams are a mode of representation, then what is represented is the thought process itself" (Law 2019).



Above right: Denis Diderot (1713-1784) and Jean Le Rond d'Alembert Mosaïque [Mosaicist] from *Encyclopédie, ou Dictionnaire raisonné des sciences, des métiers et des arts*.

Above left: An alchemical engraving from the 17th century.

However, this thought process is not what the alchemists would recognise. Johannes Fabricius (Fabricius 1976) plots a path from the alchemist's diagram towards psychology. Unable to turn iron into gold, the alchemists eventually floundered in their quest for transmutation and in the vacuum of their research as they pondered their failed experiments in their laboratories they eventually unwittingly called forth psychological, subconscious moments. The result is, "... that the *opys alchymicum* is concerned with imaginary contents and thus represents an essentially psychological phenomenon... the alchemical workshop must have served as a stimulus for free association" (Fabricius 1976). This thought process is equally the reader's as it is the author's, which relieves the diagram of an obligation to be read as a singularly truthful or simplified expression

of a concept and allows it to take on a multiplicity of relationships. The diagram does not recede into a vanishing point of single reception but instead shifts depending on the viewer.

So, as a mode of thought alchemical enquiry in diagram form is as revealing of its creator as it is its subject. In chapter 4, I describe how the American comics poet Bianca Stone, refers to the themes and operation of my work as trying to understand or ‘figure something out.’ (Stone, email to Russell Evans, 2021) This attempt to process past experience adopts a backward-looking view, while the alchemist would take a forward-looking view as effecting change in the future. But both the alchemical engraving and many examples of visual poetry are engaged with creating an artefact which *does* things. In this regard it then moves closer to the idea of the conceptual diagram with its self-sustaining, machine-like dynamic interior, perhaps flawed in its ultimate pursuit of effecting change (for the alchemists to affect matter, while for the poet to affect the self), but always as revealing of the author as much as its subject.

However much the alchemist may have desired a hermetic diagram that reveals only to the initiated, and even then reveals only that which is within the ‘science,’ it is very much skewed by its creator. In essence, the alchemical engraving is a conceptual diagram, not an information diagram. It is one that depicts thought, is a machine of pure function, and performs in ways not intended by the alchemist. Once created, the multiplicity of readings of it ensure it carries on operating after inception.

Moving from the psychological reading of the diagram to its structure, there are, it can be shown, telling similarities between the medieval engraved diagrams and the

concepts put forward by the twentieth century theorists of the diagram. The concept to be focused upon here is the generative property of the in-between – the location of the diagram in between matter and concept, between Foucault’s ‘discursive and non-discursive.’

Another point where alchemical engravings coincide with the properties of the conceptual diagram is in the idea of *prima materia*. The process of transmutation of gold, the body or the soul, the alchemist believed, could only be achieved with *prima materia*, the prime matter that ‘which they believed could be extracted from any substance’ (Hauck 2010).

For the alchemist the diagram had a function and an operation, designed to be released from the grip of its maker and engage the imagination of the viewer to cause changes. It embodied certain key truths and would carry on affecting its surroundings after it had been made. But ultimately the engravings provided a portal into thoughts of the author, something that can applied to current visual poetry.

2.3.3 *The encyclopaedic plate*

Foucault suggests that as the natural sciences progressed into the nineteenth century, categorisation of the natural world became dominant (Pratt 1977). The encyclopaedic plate, an engraving for illustrating reference books and almanacs, embodied this move toward taxonomy in its attempts to physically arrange on the page the categories of nature that for Foucault were little more than arbitrary (Foucault 2002). In *The Order of Things*, Foucault places the classifying of natural history in the same period as developments in the structure of language, and how structures in both say as much

about the authors of them as they do the subjects they attempt to classify. Still closer to the conceptual diagram, the encyclopaedic plate was operative, imposing a classification on a world it is trying to structure, and doing so based on the same flaws that Foucault would identify that lie at the heart of language.

Nevertheless, the pertinent point here with regard to visual poetry is that these two early examples are evidence of visual-textual artefacts intended to do things, to operate and alter the physical world. Further, the mode of classifying itself – structuring according to thoughts which are themselves the product of a certain ordering of society – is a conceptual diagram. For example, Foucault opens *The Order of Things* with a quote from Borges of a bizarre Chinese classifying of animals according to whether the Emperor owns them, whether they are tame or whether they are embalmed. The mind that classified the animals thus would have been the product of the imperial society, and one where ownership was key, and the thoughts that did the classifying could equally be detached from animals and applied to other social fields, such as land, children, or food – in so doing they become conceptual diagrams.

2.4 The diagram as an assemblage

2.4.1 Defining the assemblage

At some point, any investigation into the conceptual diagram has to begin to involve two further properties, first that it is not stationary in space and second that it is not stationary in time. Further questions concerning these properties can be posed using the models created by quantum physics, later in this chapter, but for now an exploration of these properties needs to begin with the concept of the ‘assemblage.’ As DeLanda

makes plain, the word translates badly from the French. It essentially refers to a set of objects that come together in time, but the English version suggests a collage or fixed assembly.

‘The word in English fails to capture the meaning of the original *agencement*, a term that refers to the action of matching or fitting together a set of components (*agencer*), as well as to the result of such an action: an ensemble of parts that mesh together well.’ (DeLanda 2016)

These components may be linear (lines) or lateral planes (space) but when subject to the ‘force’ of the assemblage (Deleuze, 1998) will behave as quanta because the assemblage ‘brings together disparate elements together in time’ (Thornton, 2018: 11). But this rather suggests a rag-bag of random elements which are swept up in a combined moment. DeLanda dispels this in a neat phrasing that suggests simultaneity of cause and effect: ‘the parts that are fitted together are not uniform either in nature or in origin, and that the assemblage actively links these parts together by establishing relations between them.’ This posits the assemblage over and above its components, as if having some initial impulse which led to a gathering of components, which in turn brings it close to the idea of the conceptual diagram. DeLanda takes Deleuze and Guattari’s loose assemblage theory and builds a more coherent theory from it, summarising it as:

‘Every assemblage is a concrete historical individual, from individual atoms and molecules to individual cities and countries. As such, assemblages are characterised by enduring states defined by properties that are always actual, existing in the here and now.’ (DeLanda 2016)

One might visualise them as a collection of objects or debris held together briefly by a minor whirlwind; they have in common the fact of their relations to each other, and cannot be reduced down to some essence of objects. They are a true multiplicity. However, that metaphor stops short of giving the full picture. Delving deeper the assemblage will have the same effect as a unified whole but is anything but unified in terms of composition, instead it is unified in terms of what it does, how it performs and

how it affects externally what surrounds it, thereby stepping further than the image of the randomly assembled whirlwind. It is an 'abstract machine' (Deleuze 1994), unified in what it *does*, not what *composes* it. In terms of visual poetry and the conceptual diagrams that may arise from them, this telling of the assemblage makes a contribution to understanding how a highly disjointed, juxtaposed set of images and words on a page can perform together, not through some essentialist moment of unified meaning but through the self-motivating impulse of the conceptual diagram. The diagram as a paradigm or model will seek always to break away from that which gave rise to it and establish relations with its surroundings. So its *cause* is what binds it.

Assemblage Theory centres on time, but binds space with time in a distinctly Einsteinian way, where time exists only relative to where in space it is enacted. The assemblage is, 'the rejection of unity in favor of multiplicity, and the rejection of essence in favor of events' (Nail 2017). This rejection of unity also means there is a rejection of the notion of *essences*. The assemblage, it might erroneously be thought, is held together because it contains the essence of something, and by being brought together it must have some essential property common to all its components. This is a particular misconception with assemblage theory which needs to 'eliminated' (DeLanda 2016) in the same way that physics has removed the idea of essences within each atom of a substance. Each atom does not possess the essence of that which it is part of, for instance the hydrogen atom does not hold the essence of water in its boundaries. Instead it is on the same journey of decay, thermodynamically, as other atoms it is conjoined with. In this way, since decay or entropy is a determinant of time, it is moving through time in the same measure as other atoms fixed with it. Deleuze points to what he imagines as the 'atom' of the assemblage, and it turns the question of essences back on itself:

“The minimum real unit is not the word, the idea, the concept or the signifier, but the assemblage... The utterance is the product of the assemblage, which is always collective, which brings into play within us and outside us multiplicities, territories, becoming, affects, events.” (Deleuze 1987).

The assemblage is not composed of mini-assemblages, nor of unified moments or components all performing the same action, instead it is held together by action. It affects its surroundings and thus operates in the same way as the conceptual diagram, but adding a crucial fourth dimension to the diagram, one more difficult to allude to in the fixed illustrations above (Figures 1,2,3). It also allows the conceptual diagram to arise from less stringent beginnings, so it can evolve not only from a strict set of circumstances such as the French penal code, or the authoritarian response to a pandemic, but from a glancing conjoining of moments in a certain place or time. Deleuze gives an example: he imagines a street, with a horse and cart, a café across the street – and a child, Hans, witnessing the horse fall onto the ground.

“It is defined by a list of active and passive affects in the context of the individuated assemblage it is part of...These affects circulate and are transformed within the assemblage: what a horse "can do."... “Hans is also taken up in an assemblage: his mother's bed, the paternal element, the house, the cafe across the street, the nearby warehouse, the street, the right to go out onto the street, the winning of this right, the pride of winning it, but also the dangers of winning it, the fall, shame...” (Deleuze, 1998: 257).

This scene is more analogous to creative work such as poetry and enables a view of the assemblage that is akin to textual components brought together under authorial determining, but also involving a meta-literary approach where the author's scene is part of a line of previous authors, previous writings, and previous reception of those writings and authors, all of which are subject to other conceptual diagrams. It all comes back to Deleuze's belief that the diagram is nothing less than the construction of thought (Zbedik 2012).

2.5 Conceptual diagram and the hard sciences

2.5.1 Deleuze and Guattari and physics

Exploring the internal mechanics of the diagram is perfectly feasible by using abstract terms, which is how Deleuze and Guattari do so in *A Thousand Plateaus*. But such an approach can lead down rabbit holes of abstract terminology that move ever further from attempts to make the conceptual diagram clearer. But such deep abstraction makes finding models from the physical world hard to come by. Eisenmann as an architect must seek physical models because ultimately the resulting building will need to have form, so as seen earlier he uses three-dimensional concepts such as Russian Dolls, DNA structures and so on to enable a physical form to take shape. If one wants to present a model of the conceptual diagram to enable better understanding it needs to be chosen with care so that it can enable a visualising of the shape of the diagram, but also does not curtail the strangeness of the diagram. It does not immediately resemble very much at all in our physical world, but if we adopt models from the hard sciences there appear several that remain capable of being visualised, but also embark on a new type of form that involves forces, movement and the additional dimensionality of time. This becomes crucial as an exploration of the conceptual diagram delves deeper into its structure and workings and engages with time and movement, as highlighted by DeLanda in the notion of the assemblage (DeLanda 2016).

Deleuze uses terms which lend themselves to post-classical physics. He talks of zones of uncertainty, suggesting Heisenberg's uncertainty principle; that the diagram 'maps out possibilities prior to their appearance', matching the wave function; of 'a map of

relations between forces'ⁱⁱ; he describes key principles of matter in terms of it being 'molecularised'ⁱⁱⁱ, and 'it has a relation to forces to be harnessed'^{iv} matching mass and gravity; and with the 'inflection' seeks to identify the smallest units of the diagram, the very definition of the Standard Model. The assemblage itself illustrates interaction closely matched by that of gravity to mass. Finally, Deleuze and Guattari make particular use of physics in '*Capitalism and Schizophrenia*.' In part 1, *Anti-Oedipus*, they adopt the duality which still exists in physics – and is unbridgeable at present – between physics of the very large (cosmology) and of the very small (particle physics):

'To distinguish between the two regimes of desiring-production and social production Deleuze and Guattari borrow the concepts of the molecular and the molar from the physical sciences. The authors call these "the two directions in physics —the molar direction that goes toward the large numbers and the mass phenomena, and the molecular direction that on the contrary penetrates into singularities, their interactions and connections at a distance or between different orders."' (Thornton 2018)

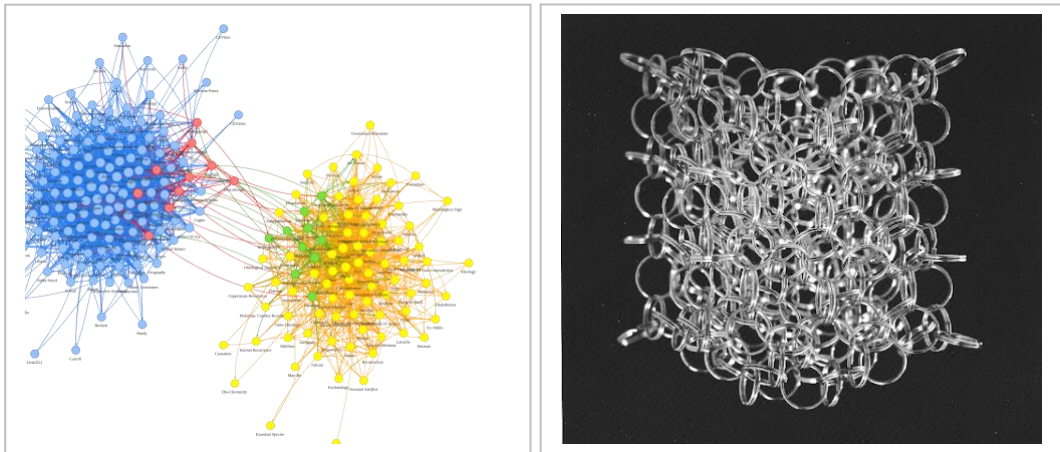
2.5.2 Loop quantum gravity and the diagram

Quantum physics has long had to grapple with how to present new concepts that bear no apparent relation to the physical world. It has also found diagrams essential as the only way to describe and more importantly to calculate certain phenomena in the sub-atomic zone. Roger Penrose's Twistor diagrams and Richard Feynman's eponymous diagrams have become accepted ways to describe highly challenging theories and have 'revolutionized nearly every aspect of theoretical physics.' (Kaiser 2005)

But quite apart from the field's success in creating new kinds of information diagram, the substance of one aspect of quantum theory bears resemblance to the conceptual diagram. This might be of interest as coincidence, but what is less apparent is the extent

to which a field of quantum physics can act not only as a model to explain the conceptual diagram but can go further, helping elucidate further how it works internally. It also allows an escape from the idea of the conceptual diagram as a fixed entity. The Figures above (1,2,3) each show only a stationary state. But writings about the philosophy of the diagram are in agreement that the diagram is anything but fixed, possessing a fluctuating interior and a shifting presence in its surroundings. The theories which reveal something of the conceptual diagram are based around recent ideas of gravity. The advantage of using the model of quantum gravity to explore the conceptual diagram is that it describes both space and matter, it is engaged with forces holding matter together, and it allows for continual flux and as such allows uncertainty of unit positions. It is, in short, as implausible as the conceptual diagram but just as convincing.

The question of what gravity is made of has been the source of much research over the last forty years, seeking to classify the weakest of universal forces in terms of what its smallest units are, how it is composed, what holds it together, and how it interacts with and affects its surroundings. Theories are united that they are seeking 'quanta' of some sort of unit as building blocks of gravity but split as to whether these are strings or loops. Loop Quantum Gravity (LQG) is closer to describing the conceptual diagram because like the diagram it too is engaged with how heterogeneous matter/events (as both space and time) can be held together and how much they 'warp' surrounding matter/events.



Above left: An image produced by Boudourides for a conference *Assemblage Thinking*, 2017, depicting two assemblages.

Above right: A visualisation of Loop Quantum Gravity, showing a network of hoops which form the quanta of gravity as a force. Objects with mass cause such hoops to bunch together in an assembly network, subsequently warping surrounding time and space.

There is a striking similarity of visualisations of loop quantum gravity with those of the diagram as an assemblage in Feller (Feller 2016) and in Boudourides (Boudourides 2017). Deleuze sees the assemblage as smooth space striated by lines (Deleuze 1998) while LQG deals with “...a network. The smooth background of Einstein’s theory of gravity is replaced by nodes and links to which quantum properties are assigned. In this way, space is built up of discrete chunks.” (Hossenfelder, 2016).

While LQG allows a visualisation of the diagram that gives an insight into its abstract interior workings, using such a model goes one step further by asking questions about the conceptual diagram that previous models might not suggest. LQG weaves together space and time in one unit, and this enables a closer glance at the assemblage. Loops of space-time entangle to produce a network (Hossenfelder 2016) which is directly affected by mass, an object which is itself a gathering of objects, all of which produce a

gravitational effect on surrounding space. Space is warped by this assembly of matter and in turn time slows down relatively. The heavier the mass, the more time is affected, and the more surrounding objects are drawn into the assembly of objects or mass. LQG asks a question – when mass comes together it must do so in terms of space and time together – it does not come together as a sagebrush does rolling along a road as a gathering of sticks, but instead as momentary gathering and forgetting of objects as it moves, and furthermore that as it moves it is not moving *through* the landscape, it is the landscape which is knotting together and unknotting as the assemblage ripples through it. LQG dispenses with the idea that there is a background and a foreground in space, or that objects sit on a metric of space, so instead, '[o]ne must step away from the idea that the world inhabits space and evolves in time.' (Lehtinen 2012). So LQG 'is concerned less with the matter that inhabits space-time than with the quantum properties of space-time itself' (Hossenfelder 2016). This is similar to the Deleuzian assemblage, which is defined as a temporal gathering:

'...in all things, there are lines of articulation or segmentarity, strata and territories; but also lines of flight, movements of deterritorialization and destratification. Comparative rates of flow on these lines produce phenomena of relative slowness and viscosity, or, on the contrary, of acceleration and rupture. All this, lines and measurable speeds, constitutes an assemblage.' (Deleuze 1998)

The conceptual diagram is an assemblage in four dimensions, made up of individual parts which act in unison by virtue of the centrifuge of the assemblage. The assemblage may have formed from previous assemblages, and may have boundaries which ebb and flow, but retaining a zone similar to the wave function in physics. Like gravity it affects its surroundings according to the density of that which gathered it together in the first place. A one-off moment like Hans and the horse will also join with previous assemblages of shame, social embarrassment, injustice, family ties and the voyeurism

of seeing such an event from a café, taking part in still further assemblages of further social codes. The critical use for visual poetry is in how the concept of the diagram and its actual form as an assemblage can elucidate the external effects of such conjoined juxtapositions as text and image, and how they can affect the reader.

2.6 The diagram in practice

2.6.1 Eisenman and architecture

Architecture provides a tangible example of the diagram. It also allows a drawing together for the first time the two diagrams described at the start – the conceptual diagram and the sketched line diagram. Dealing as it does with the abstract, the conceptual diagram is more easily grasped in visual, physical outcomes. Architecture, therefore, provides not only a rich source of research (the conceptual diagram was a prominent feature in architecture theory in the 1990s) but also examples of conceptual diagrams applied to actual buildings.

In *Diagram Diaries*, Eisenman, in his description of his plan for House 11a in Palo Alto, talks about aiming to locate the ‘diagram’ of the building from the instructions provided by his client’s ‘psychological terms’ (Eisenman 1999). Eisenman pins the term diagram on a concept or a shape or, as in the above, a series of psychological states. His client for House 11a, a Stanford University professor, said he wanted ‘...a house that when I am inside I feel like I am looking at the world from the outside, and when I am outside the house it is as if I am inside the house’ (Eisenman 1999). Eisenman responded, ‘This

inside/outside theme then suggested another external text as an initiating diagram for the house, that of the Mobius Strip.'

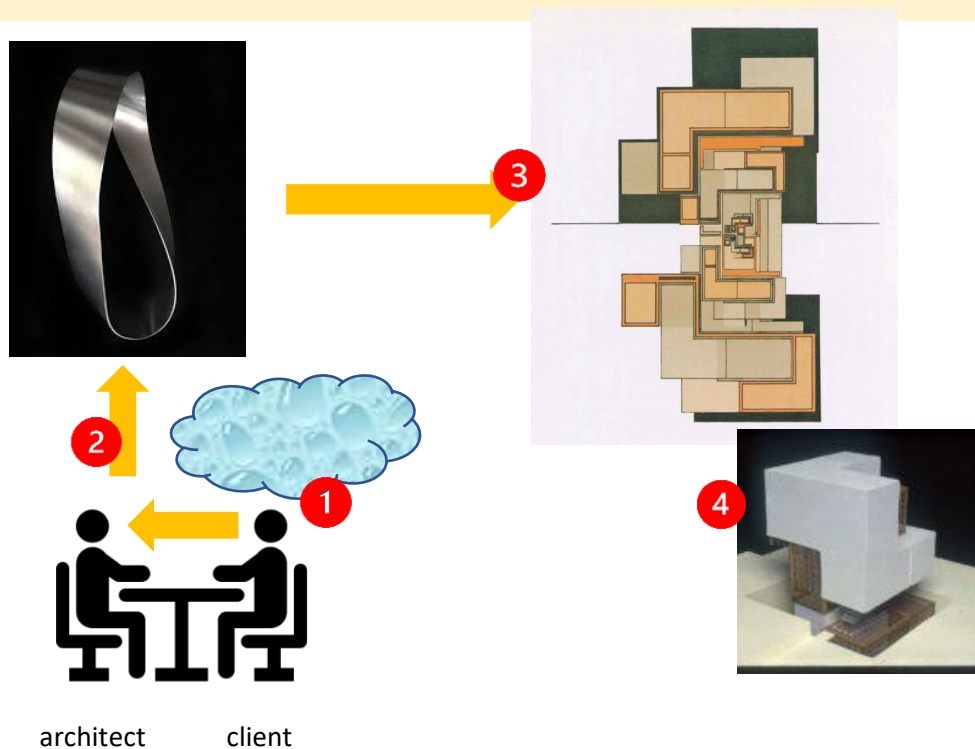
'The Mobius Strip is a topological surface that when twisted through itself is both continuous and denies the notation inside and outside... Diagrammatically, House 11a was conceptualised as a Mobius Strip that would be placed half underground and half above ground.' (Eisenman 1999)

The client put forward, to use Foucault's terms, a 'statement,' which would then be manifested in the physical building. Bridging the two was a diagram which conceptually performed two functions – to enable passage from the client's terms to the building (from the virtual to the real) and to provide a self-sustaining generative concept that could be transposed elsewhere, in other projects. Indeed, the client's engagement with Eisenman arose from his interest in the architect's 'conceptual intentions' of another project (Eisenman 1999), suggesting that he grasped the diagram as much as he grasped the building itself. That diagram, the Mobius Strip, was also present in that previous project and would continue to be used conceptually in future Eisenman projects. A conceptual diagram applied to a building will invite a suggestion of symbolism, since we may be accustomed to thinking of buildings as presenting symbols of power (the medieval castle) or religion (the steeple), but these may be symbols attached after the event, through similarity and association with function. Eisenstein goes back to source, however, delving into what were referred to earlier as prime number shapes to find conceptual diagrams that do not originate from association but instead possess a physical actuality that can carry both the virtuality of the client's wishes and the reality of the final structure. In the Mobius Strip the architect found a form which 'is an apt allegory for losing control. The continuum of crossing a Möbius strip is emblematic of how we experience time in a nonlinear way.' (Alagappan 2021). Eisenstein returns to

the source of diagrams by basing them on function, on how the form behaves and how we as occupants will behave once inside or near it.

The Mobius Strip as an imaginary object and an image of the finished House 11a have similarities, less in the surface shape and more in the function of the house. In Eisenman the diagram is interiority, embodied by the sketch, evolved into form by the building and retained by the effect of the house on its residents.

Diagram in practice: Eisenman's Mobius Strip (House 11a)



Above: Figure 12: The client for House 11a meets with Eisenman and conveys in abstract terms how he envisages his house, ¹ not in physical terms but in how it will affect the client and its surroundings. Eisenman then looks for conceptual diagrams ² that are analogous to the client's wishes, seeking them in physical form such as DNA helix, Russian dolls, the branch and so on. The architect locates the Mobius Strip ³ as appropriate. Designs are made that reflect the Mobius Strip ⁴ and in turn create a house that may affect its occupants and surroundings through the function of the diagram.

In the above diagram, the architect does not distil something from the client's ideas, so the conceptual diagram does not arise out of locating some kind of 'hidden essentials'

within those ideas. Instead, it could be described as what is left over when variables are removed: in this case the variables are the (Foucaultian) 'discursive statement' or client's wishes on one side, and the physical building design on the other. The challenge is to create a conceptual diagram that can be formed in three dimensions. Eisenman used the Mobius Strip in further designs, suggesting that the diagram had broken free from its initial use and was now applicable elsewhere.

In other examples too, a similar process is enacted but often in a different order. The painter Francis Bacon described a moment in initial stages of a painting where a diagram would be formed, from which the painting would emerge. He described his initial sketching out of a figure as a diagram where, '...you see within this graph the possibilities of all types of fact being planted' (Sylvester 1980). In this example, as in Eisenman's work, theory is embodied in the physical world. The diagram might precede the painting, which could be seen as the physical manifestation of the diagram.

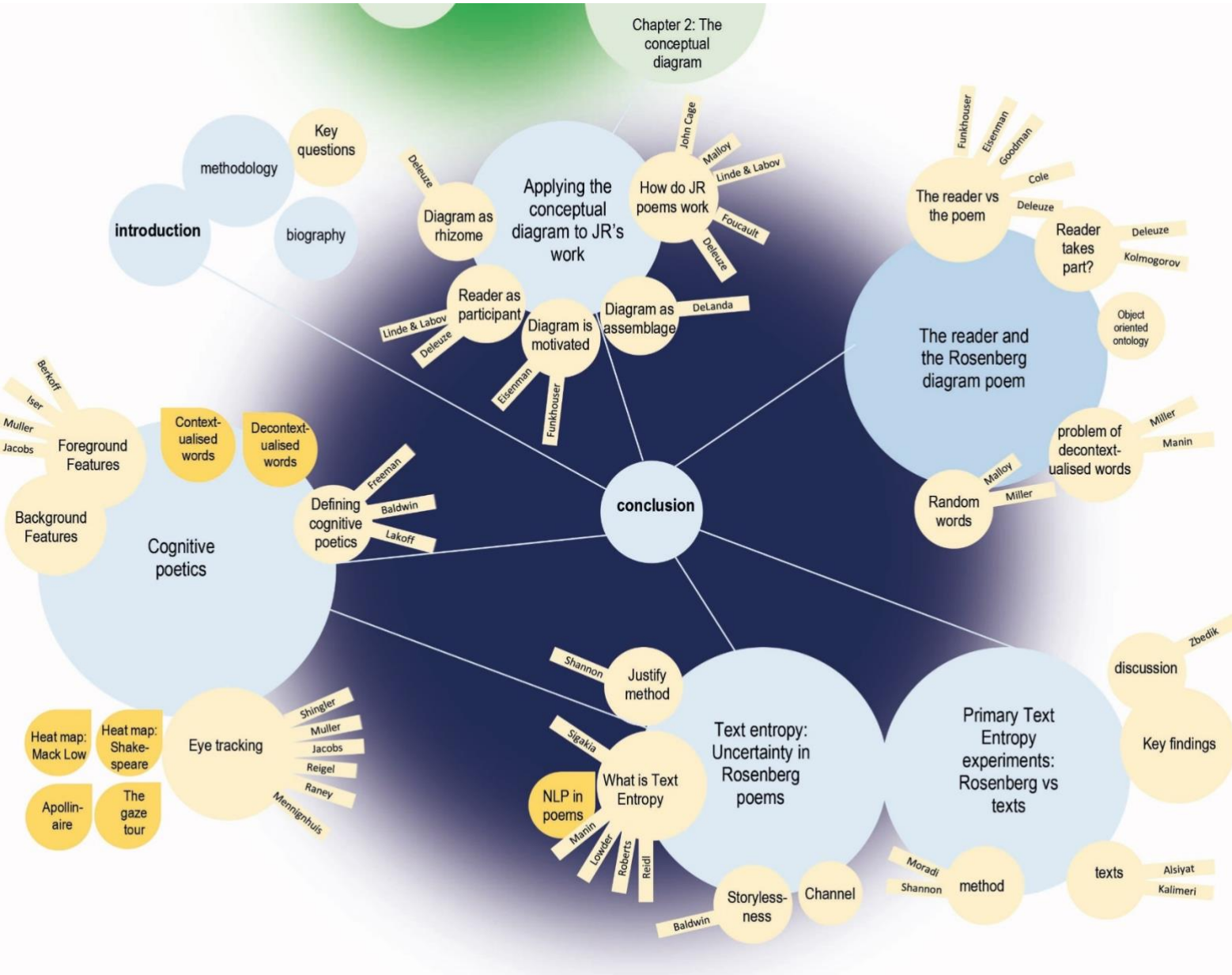
As in Bacon, the moment of sketching – a rough drawing stage – is a key producer of the conceptual diagram. For the architect Eisenman or the artist Klee, the sketch is a supple space that maps out possibilities, making visible the implicit/statement (Howell 2020). From this, the architect or artist can proceed to make explicit what emerged in the diagram sketch. The sketch holds both the real and the virtual together, while the diagram gets steadily more obscured and hidden as the building or painting progress in construction. Once built, the house hides its diagram. In the construction of a building the two sides of the diagram have weight – the physical will *affect* its surroundings, while the implicit/statement will *effect* [sic] its surroundings (Deleuze 1994).

2.7 Conclusion

The conceptual diagram is easily hidden, but like anything hiding in plain sight its effects are clearer than its appearance, according to Foucault. For Deleuze, the conceptual diagram is a gathering which is never still, a blend of time and space drawing centrifugally moments, matter and meaning to its centre. For the visual poet, the conceptual diagram does not necessarily lead to specific power-relations insights, nor an abstract glimpse of a kind of momentary sagebrush of theatre and matter rolling along under the force of social codes. Instead it can offer a method to speak the language of both text and image, bridging both to form one transposable model. Words and images are not read together, but forge a new way for the reader to read both, as described in the next chapter looking at laboratory approaches to visual-text cognition. The crucial outcome for visual poets is that the conceptual diagram is inherently a visible component. It becomes hidden in later stages, and the more the assemblage takes over once the diagram becomes a self-sustaining machine it is caught seemingly only out of the side of one's eye. It lends itself to the next visual poem, creating for the practitioner a sense of themes evolving. But always the conceptual diagram leads. Bacon suggests that it emerges outside of his control. Eisenman locates a diagram from existing forms. Foucault's rendering of the diagram, supported by Deleuze, is that it was there before we looked -- present in social codes, authoritarian power structures and social forces. The visual poet therefore taps into latent social phenomena when allowing text and image to collude in creating a conceptual diagram.

Chapter 3: Case study: Jim Rosenberg and diagram poetry

Diagram of Chapter 3



3.1 Rosenberg as diagram poet

3.1.1. Introduction

Previous chapters have shown how the diagram is invested with agency by practitioners who seek to remove what they see as the constraints of linear text. In this chapter, we will explore the work of American poet Jim Rosenberg as an example of a practitioner who has pioneered diagram poetry within the broader field of what is broadly called digital poetics, diagram poetry, e-poetry or, in Rosenberg's preference, just poetry written native to today's digital present. The aim is not to explore meanings or offer close readings of Rosenberg's work, but instead to use his work to scrutinise the concept of diagram poetry.¹² As a body of work that uncompromisingly puts forward stark questions about such poetry, it can be used as a stress test of the possibilities and limits of diagram poetry.

Rosenberg's work deserves investigation because it manifests so clearly as diagrammatic but also for its long-running development of a new poetics. His work has been rarely explored, despite being 'arguably the most radical and original thinker in digital poetics'¹³, while Funkhouser (Funkhouser 2019) sees his work as 'precious and unique among digital poetry productions,' and remains 'entirely unknown beyond a relatively small literary subculture that follows or participates in developing digital poetics.'

¹² It should be noted that the terms 'visual poetry,' diagram poetry' and 'spatial poetry' are each used loosely and idiosyncratically by practitioners and cross over one another. This dissertation uses the umbrella term visual poetry cover all such terms, in accordance with Solt's definitions of the term in 1968.

¹³ Endorsement by Stuart Moulthrop in 'Word Space Multiplicities,' 2012, by Jim Rosenberg. See Bibliography for details.

His work is among the most challenging and single-minded in visual poetry, the result of unrelenting adherence to his strict aims since the 1970s of:

- Seeking a new diagram poetry
- Creating diagram poetry that is mathematically randomised
- Working deeply with digital poetics, especially Hypercard
- A new way of reading using simultaneity

If one seeks to stress-test visual poetry one might avoid examples that sit within the comfort zone of the field and rather gauge the extremes, just as one tests an engineering concept by seeking an environment that poses most challenge. Some visual poetry more readily enables reader engagement, in terms of familiarity and entry-points, but Rosenberg makes no such offer. Funkhouser (2019) takes the poet's side:

‘Someone looking for new forms of poetry to be presented as something vaguely challenging or as an instantly illuminating ... will not be able to traverse extremely expansive possibilities for expression and experience poetry that embraces and is superiorly rich with sophistication of process and product.’

This case study will need to engage with the works on their own terms, but also acknowledge the rich history of diagram philosophy with which Rosenberg may be at odds.

3.1.2 Methodology

This exploration will draw on my correspondence with Rosenberg and from the two scholars who have interviewed Rosenberg and championed his work – Judy Malloy and Sandy Baldwin. Rosenberg is a keen proselytizer of his field and writes detailed papers predominantly on his process and his opinion of others working in similar ways. He

'expresses his opinions strongly'¹⁴ and has an awareness of his field built up through decades of honing his work. Discussions with Rosenberg have been of use, though he is guarded correspondent and retains a resistance to questions that step outside of process and the mechanics of his work. It is also challenging to locate where Rosenberg sits among his community of diagram poets. As Moulthrop (Rosenberg 2015) says: '...the rest of us are only now, 20 or 30 years on, beginning to catch up to Jim's earliest recognitions.'

Papers by Rosenberg offer one set of insights, but as correspondence with the poet will demonstrate, the author of a body of work does not have the first and last word on what their work means, how it functions and where it sits in the current field of poetry. Indeed, Rosenberg seeks to determine how his work is perceived and takes issue with many of his peers about what constitutes diagram poetry. So while first-hand comments are useful the thrust of this chapter will arise from three approaches:

1. applying the same conceptual understanding of the diagram as laid out in chapter 2
2. using concepts of neuro-cognitive poetics from Lakoff.
3. applying aspects of Information Theory.

These three robust areas of study each offer a view of poetics that is uniquely suited to the visual aspects at the heart of visual poetry in general and Rosenberg in particular.

¹⁴ Email from Judy Malloy to Russell Evans

A key question for this dissertation is to test the apparent claims of diagram poetry that it offers greater breadth of potential or scope for interpretation. The correlation of breadth of potential meaning is uncertainty, in the term described by Shannon in his founding work on Information Theory (Shannon 1964). The gain in such uncertainty in a text is that it enables the reader to engage to a greater degree, allowing wider possible meanings attended by each reader. Later in this chapter, primary research experiments are used to explore this question, applying Shannon's Text Entropy formula to determine quantitatively the extent to which a selection of texts reach their inferred potential. The results may provide insights into Rosenberg's work in particular but also into visual diagram poetry in general.

The key questions to ask with this enquiry and later with quantitative tests are:

- What does diagram poetry offer to the reader that linear text poetry does not in terms of potentiality of meanings?
- How might it fulfil its aims of opening up syntax to greater uncertainty and therefore open-ended meanings?
- How does such work compare to linear text poetry if measured using established methods of uncertainty prediction?

3.1.3 Biography

Jim Rosenberg is an African-American poet, born in 1947 in Colorado. He received two mathematics degrees and has been producing poetry since 1966. Early work was linear in form but after meeting the composer John Cage, Rosenberg questioned his own methods, stating that Cage became the 'single greatest artistic influence on my life,' (Malloy 1996) who provided the model for the poet's word cluster form, emulating

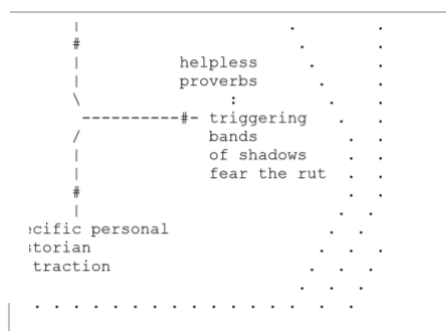
Cage's ideas of tone clusters, but also influenced by his belief that if 'the domain of music is anything which can be heard, the domain of visual art is anything that can be seen,' allowing Rosenberg to expand the possibilities of poetry. While Cage found Rosenberg's early diagram work 'too mathematical,' (Malloy 1996), the poet wrote some of the computer programmes for Cage's mesostic works.

His poetry has appeared in small magazines, including Tyuonyi, Interstate, Open Reading, Toothpick, Vort, and BUTTONS. He has performed his poetry at The San Francisco Poetry Center; Intersection, San Francisco; Cody's, Berkeley; St. Mark's Church in the Bowery, New York; and The Kitchen, New York. Tape works with sound have been performed by radio stations and by the Stanford New Music Ensemble. He lives in rural Pennsylvania with his co-experimenter Mary Jean Kenton, a painter, and until retirement worked in coding. He is also an active anti-fracking campaigner.

3.1.4 How do Rosenberg's poems work?

Rosenberg developed his process in 1968, working on paper at first in diagram notation while working on linear text poems. By 1974, his method was set, but it was not until the first Mackintosh computer in 1986 with Hypercard that Rosenberg saw the potential for his diagrams to move into time-based work, as well as enabling a clearer production

Right: excerpt from
Diagram 4.1, Jim
Rosenberg



of his two-dimensional work. He developed a unique notation using hash, slash and plus/minus characters, clustering words together and grouping them under symbols that determined how they should be read – for example, three words clustered together within a dotted line are to be read as a clause, subject to another word or words which acts as a verb, shown by use of the hash sign. Despite advances in technology, Rosenberg still uses notation from this early period, and for interactive work uses Squeak, a multi-platform low-resolution graphical interface. This dissertation focuses on Rosenberg's diagram work, particularly Diagrams series 3 and 4 which were produced during the 1980s and are the last 2-dimensional pieces he produced before moving into computer Hypertext poetry, which is outside the remit of this dissertation. Rosenberg himself divides his work into two phases: 'interactive and pre-interactive,' with the departure into digitally interactive work in the late 1980s (email with Russell Evans, May 2021).

For Rosenberg, meaning in a text arises from a simultaneous co-action of word clusters spaced across the page, where each cluster of three, four or five words are paced within a diagram. In the non-linear layout of the diagram the reader scans the page accruing words and, just as in linear reading, 'caches' them as the eye moves on (Rosenberg 2015: The Interactive Diagram Sentence). The eye returns to previous words, picks up new ones, returns again, subjects them to others, in a process known in neuro-linguistics as 'savouring' or the 'gaze tour,' (Linde 1975), as detailed in chapter 2. But for the poet, this reader process is incidental. It is not the caching of meaning that gives momentum to the diagram, but taking part in it as a machine as if the reader is asked to operate the poem under Rosenberg's strict instructions.

3.2 The conceptual diagram applied to Rosenberg

3.2.1 Challenges

In theory it may seem that in encountering a Jim Rosenberg Diagram poem agency rests with an active reader gathering meaning from word clusters. In practice it is quite different if one applies the ideas of the conceptual diagram as described by Deleuze, Foucault, DeLanda and others (see chapter 2).

But before we subject Rosenberg's work to scrutiny under these terms, let us explore his own understanding of his work. Rosenberg identifies and seeks to disrupt what he sees as an underlying fault line in serial, linear writing¹⁵. He suggests that only a diagram can allow a way around the in-built problem with linear language that 'a word stream itself has no storage,' in other words that when one listens or reads one unravels the text in single file; the reader or receiver's attempt to accumulate meaning is stunted in linear text by being dependent on the teller/author for cues as to overall meaning. Without these cues, words are read or heard, comprehended and then passed by. Syntax is a tool that seeks to overcome the problem and is 'nature's way of allowing us to fit very complicated structure relationships into a word stream,' (email to author, 2021) which the poet seeks to enhance in the use of the diagram.

Looking around him in diagram poetics, Rosenberg engages with forms and poetics that others attach to his work with reluctance. He disputes much that is attributed to his

¹⁵ Rosenberg email to Russell Evans, 2021: "With a "drawn" diagram you can do things that are not present in ordinary syntax, like internal relationships (relationship between a part and a larger part in which it is contained), feedback loops and even somewhat paradoxical relationships."

work, disengages with forms that are similarly diagrammatic and refutes concepts that would seem to adhere to his work such as post-structuralist approaches to readership. For Charles Bernstein and the Language poets, he has 'violent objection' to their approach to poetics; rejects the rigidity of uses of hypertext poetry; he opposes seeing his diagram work as visual in any sense; does not see the reader as a co-maker in interactive work, opposing the concept of participation in generative work; resists collaboration; takes a utilitarian view of reading poetry as a 'fuel;' rejects calls for statements on his poetics (Malloy 1996); and prefers 'far reading' (email to author, 2020) to close reading. Indeed, the reader is rarely referred to as a 'reader', instead they are the 'receiver.' This goes against the grain of post-structuralist thought, which has produced the most convincing interrogation of textual structure, and Rosenberg pushes in an opposing direction by declaring that his diagrams compel the reader to engage with language in 'an unprecedented way' (Funkhouser 2019). Going further still, Rosenberg, defining his diagrammatics as networks, asks of the reader that 'to understand the network one becomes the network,' surrendering the notion of reader agency central to post-structuralism.

Rosenberg does, however, ally himself with composers, particularly of the Cage school; he sees his route as a long haul to create a new syntax, a new way of reading and eventually to 'write native' in the domain of hypertext as we shift to non-linear ways of reading, as the information we take in becomes less linear and more dispersed. In doing so he creates machines of diagram works and steps back so fully from the reader that he expects the reader to do no more than 'operate' his work with strict sets of tools, rather than build them in entirely new ways dependent on the readers' own associations (Rosenberg 2000).

In short, Rosenberg is a challenge and a challenger. A challenge to research and a challenger to research and practice around him.

Applying concepts of the diagram to Rosenberg's work, there is much philosophy about the conceptual diagram, as outlined in chapter 2. The diagram, as seen, has multiple dimensions: it is the virtual diagram that seeks to replicate itself (Foucault 1991); it is the rhizomatic diagram that contains all it needs and which operates its own inner machine to effect (sic) its surroundings as a map of forces (Deleuze 1998); and it is the unbridled diagram that when once read, 'further information is added when the message is interpreted...' (Goodman 1969).

Rosenberg avoids these properties in his statements and refers to diagrams as schema, as in aspects of Foucault. In the Conceptual Diagram, there are sub-sets that explore different aspects of it: a **plan** is prior to the event, **map** is during the event, a **graph** is after the event, while a **schema** is a statement of the event. While this definition of the schema might appear to suggest it is static, for Deleuze the schema is active: a 'negotiation between different levels of representation,' (Zbedik 2012) (p23) and between the forces of interacting systems. The schema doesn't stop, in other words, it operates.

3.2.3 Rosenberg vs the properties of diagrams – 1

If one applies the philosophy of the diagram to Rosenberg's work, it is here that a schism opens up, centring on the reader. As Deleuze and others suggest the *reader as participant* brings an energising momentum to a diagram, in a sense 'creating' it by

assembling his or her own chain of meanings. Deleuze suggests that 'It is not only that words lie; they are so burdened with calculations and significations, with intentions and personal memories, with old habits that cement them together...' (Deleuze 1997) (p173). As Goodman, too, suggests above, the reader plays a part in the diagram. However, in Rosenberg the reader is not a player but a tool. The reader operates pre-set machinations. Asked specifically whether the reader 'selects their own path through the work,' the poet responds,

'I'd step back a bit from the word 'path', since that implies a choice among alternatives. I think of the interactivity this way: I've presented the reader with word objects, where intelligibility can only be recovered by *doing things*, by "operating" the objects.' (Malloy, 1996)

He also rejects the idea of his word clusters as building blocks for the reader/participant.

He explains:

'[I] am pleased to see experimenters pushing the envelope by making works where the reader is a participant in every sense of the word. From time to time I think that I should be working this way too, but when I ask myself, "OK, *what*?" -- what would I like to do -- I don't come up with anything.' (Malloy 1996)

Rosenberg's mention of his professional background in coding suggests a pattern of production where a pre-set code is operated by a user, and where the user altering that code is anathema to a coder. Machine learning algorithms will occur only much later and not at all in Rosenberg's work.

Nevertheless, as diagrams they loosen themselves from their progenitor and conform to type, in other words once a schematising occurs any phenomenon can be transposed into pure conceptual understanding – the conceptual diagram that dislocates itself from its origin. In practice, the diagram allows interaction: Linde and Labov's Gaze Tour takes place, saccadic reading occurs in the reader, who leaves the role of reader and becomes

participant. While Rosenberg would tether the diagram to his own operating instructions this would not necessarily lessen the effect of his diagram poems, but it does pose questions about how far the poet is willing to accompany his own work.

3.2.4 Rosenberg vs the properties of diagrams - 2

A second property of the conceptual diagram, from architect Peter Eisenman, is that it is also dynamic, and 'motivated.' (Eisenman 1999). As seen in chapter 2, it is replicable elsewhere in the social space, and despite changing its shape it retains its effects. The Mobius strip of inside-outside continuum, for example, could be used in designs for houses, offices, health centres or leisure complexes, holding throughout these iterations the same virtual properties. The ubiquitous diagram used in Rosenberg's Diagrams Series 3 and 4, two-dimensional and guarded by discrete notation, is seen by Rosenberg – in statements at least – as being possessed by external mechanics, the notation he serves on it, and instigated by himself as author. It does not rest on a virtuality which can break away from the poem. Unlike in Eisenman, the diagram is hermetic. But again, the virtual diagram interacts with whoever encounters it, regardless of author intention, just as all signs are dependent on reception. This does not assume that Rosenberg has set out to oppose this diagram philosophy, but is nevertheless subject to debates that include the form his work takes, of which this notion of the replicable and motivated diagram is one element.

Rosenberg deflects any cohesive replicable shape that may cut itself loose from its origins in his text diagram. Eisenman expects such diagram forms as he uses in buildings to escape their owner and readily apply themselves elsewhere, and even have effects on their environments. But Rosenberg would seek to avoid any such coalescing of his

diagram language into forms by aiming for the textual equivalent of Kolmogorov randomness in his text (email with Russell Evans 8.12.19). Randomness makes text fugitive, unable to be pinned down to forms or meanings.

Rosenberg would withhold the central forces of the diagram, it seems, in pursuit of a desire to opt out of the 'narration channel,' and to achieve 'storylessness' -- a recurring theme in Rosenberg's discussions, of hollowing out the poems in favour of storylessness, the 'null position' (email to Russell Evans, 2020). Random texts are the purest form of storylessness, but in Information Theory terms these paradoxically contain no uncertainty since all possibilities are equal¹⁶. Once story – in its broadest sense as place, theme or subject – is removed, the reader cannot 'read' the text and is only left to 'operate' it, machine-like. As Funkhouser (2019) suggests, in Rosenberg's poems, '[t]he overall impact of the expanse of language becomes more important than systematic reading.' But to other philosophers of the diagram nature abhors a vacuum – any and all text has meaning that becomes filled by the reader.

3.2.5 Properties of the diagram vs Rosenberg -- 3

Deleuze describes the diagram as a rhizome -- a self-sustaining form that contains all it needs to propagate, just as in the botanical instance. In this sense, Rosenberg's diagram poems conform to diagram philosophy. To Deleuze, the rhizome is a non-hierarchical structure that repels organisation and homogeneity, in contrast to the dominant tree schema in Western thought (Gartler 2021). Rosenberg's earlier Diagram series (3, 4) use cell-like clusters of words enveloped by borders of notation marks, resembling

¹⁶ This is explored in more detail later in this chapter. In Information Theory terms absolute randomness has no probability of any sign more than another, so no uncertainty exists.

compartments of multiple rhizomes. The storyless, apparent randomness of the words selected suggests that within each discrete cluster each word behaves rhizomatically too, failing to interact with other words in the cluster.

When scrutinised against diagram properties, the rhizome is present in Rosenberg's work but its central self-propagating purpose is cut short. It is less a blueprint for moveable schema and more a one-off, single use shape. Rather like a grounded aircraft its central dynamic operation is withheld by its author. Again, however, readers will seek to become more than 'receivers' and lend the diagram greater agency. Holding it back, on the other hand, and returning it to the landing strip, is the absence of a concept which has been identified in linguistics as lending an invisible structure to a text, known as 'Background Features,' described in more detail on page 129.

These flightless diagrams are nonetheless powered by 'episodes' (Malloy 1996) – an expression used by the poet to describe the process where a group of 'activities' in his text cohere in the reader's/receiver's mind. These interactions are not open-ended and nor can this be interpreted as a call for readers to read. Rosenberg has something else in mind instead: he describes a process of neither reading nor detaching but rather an overview of the poetic surface.

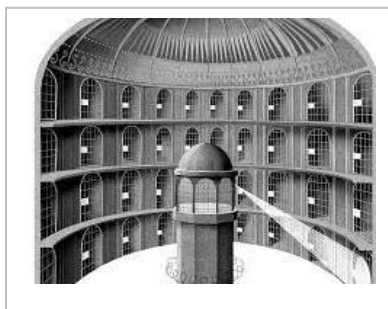
'Michael Joyce very importantly wrote a great deal about what he called "contours". He talked about "reading" the contours of a hypertext as a way of gaining "altitude" above the hypertext in the sense of reading a contour map to gain altitude above terrain. Is not what Joyce was talking about here exactly a sense of not close reading but its exact opposite, Far Reading? (email to author 8.12.19)

So there are two possibilities at play – in the first the reader is engaging with the diagram in episodes; in the second the reader escapes the text and acknowledges only the

topography of it, which in the absence of the linguistic Background Features discussed later (p129) cannot be hidden structural elements and must instead be the mechanics of the diagram itself.

3.2.6 Properties of the diagram 4 – the assemblage

The fourth property of a diagram to apply to Rosenberg’s diagram poems is the assemblage, a central concept in Deleuze and Guattari’s work. Manuel DeLanda’s

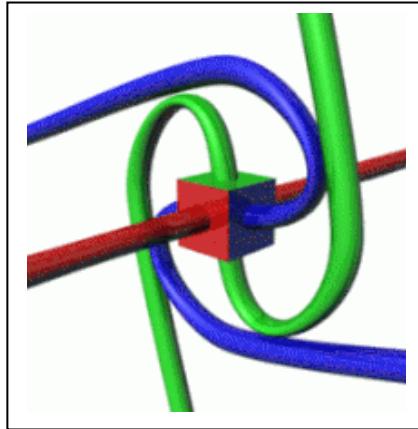


Above: An illustration of a prison layout based on the panopticon.

concept of the assemblage takes it further by enhancing the space-time element hinted at in Deleuze’s notion of the performativity of *agencement* – a definition that includes movement. Rosenberg’s conception of the diagram is more akin to Deleuze’s use of the word ‘thisness,’ (or haecceity) (Deleuze, 1998, p262) with its connotations of arrival at one place, of finishing and of being in one moment. Its stillness is at odds with the flux of the assemblage. The two are mutually exclusive, just as the Heisenberg Uncertainty Principle shows us that measurements of a particle cannot give us both position and momentum – in order to know the former we must still the latter, and in order to know the latter we must lose the former. So we can never know ‘thisness’ and assemblage simultaneously.

DeLanda puts forward three elements to describe the assemblage. First, the **virtual** element is the diagram; next, the **real** is the concept that ties the assemblage together (such as, for example, the penal code in the prison panopticon diagram – see Foucault 1991); and third, the **actual** is the present manifestation of both in, perhaps, a building, place or zone (DeLanda 2016). In Rosenberg’s Diagram series 3 and 4 the virtual would correspond to the diagram format, while the real and actual would be withheld in pursuit of absence, of storylessness.

At the heart of this schism between philosophy of the diagram and Rosenberg’s own determination of the diagram is the difference between ontology and epistemology. The assemblage and the diagram are, for DeLanda, two parts of the same state. The assemblage is the actualisation of the virtuality of the diagram. The diagram can be detached from the real and move elsewhere to effect other surroundings; but assemblage always brings with it a diagram. In DeLanda, the assemblage is the real, is ontologically present, a ‘product of’ virtuality, while ‘the diagram captures the structure of the space of possibilities associated with an assemblage’s variable components, as well as the structure of the space of possible parameter values’ (DeLanda 2016). The diagram is therefore an epistemological take on the assemblage.



Left: particle 'spin' as a concept similar to the assemblage.

In Rosenberg's Diagram Poems 3 and 4 we see work that would, if unconstrained, exert its own assemblage forces. But in statements and interviews, the poet addresses only the diagram rather than the assemblage. The assemblage is the product of the diagram, the product of enaction by the reader and continues after inception. It is time-based, but not linear in direction, more akin to the concept of momentum in physics known as 'spin'. The split in Rosenberg's formulation of the diagram is between viewing it as real versus a schema, between the diagram as an arena for enaction by reader or as a mere representation of diagram dynamics. The assemblage brings us to the 'actual world, the world of properties, currently exercised capacities, and currently manifested tendencies...' (DeLanda).

Rosenberg still, however, describes his work as 'virtual diagrams,' as opposed to a simple visual representation of information. The latter is stationary, a carousel of information from which the reader can pick, while the virtual in diagram philosophy is a blueprint that exists separate to how it manifests. In DeLanda and Deleuze, though arriving from differing viewpoints, a diagram is always something more, and beyond the scope of the author to constrain.

3.3. The reader and the diagram poem

3.3.1 Introduction

So far I have explored how applying diagram philosophy to Rosenberg's work offers insights both to the diagram in general and Rosenberg's Diagrams in particular. Neither come out unscathed, since the poet's work presents a challenge to diagram poetry, questioning participation and the entire level of reader agency, sublimating it to what appears to be a vacuum of storylessness. In Rosenberg's shortening of the horizon of the diagram, questions are answered only if they refer to process, the machine, the operation of the poems, how they function.

I next focus more on the reader, addressing whether Rosenberg sees the reader as the 'plus-one' to his diagram invitation, or whether they are instead one half of the entire product of the diagram.

To begin with the most prominent of Rosenberg's concerns, there is a restless grappling with process. Process dominates his writings and interviews. Among his papers, 'The Logosphere' describes his 'semantic method;' 'The Second Move' explores algorithms and a method for using notebooks to create poetry; 'The Interactive Diagram Sentence,' 'Conjunctive Hypertext and Hypertext Activity' all describe the mechanics of hypertext as a 'medium of thought' (Rosenberg, 2015). Elsewhere he explores syllables, non-linear metrics, spatial structures, notation, clusters. To understand Rosenberg's focus on process it is necessary to question the binary distinction between process on the one hand – the mechanics of how one writes – and subject matter on the other. But taking a view somewhere in between process and subject matter offers us a chance to see his

poetry less mechanistically than his interviews might suggest. As Deleuze points out in his work on difference (Deleuze 2014), analogy, resemblance and opposition are all contested factors in what becomes a binary view of the 'other.' So, 'meaning' may lose its footing as the key indicator of what could be termed the poem's momentum or impulse. Can process take precedence instead?

Just as with Rosenberg, diagram poets may feel compelled to explain the work first through how it looks, how it is made, how it works. But the extent to which Rosenberg focuses on it leads us elsewhere. He appears to talk about poetry being less about close-up meaning and more about unselected, decontextualised clippings of existence, taking his cue from his late friend John Cage:

'...Cage taught us, the domain of music is the TOTALITY of what can be heard. NOTHING should be excluded.' (email with Russell Evans, 8.12.19)

Equally, he seeks what could be called the event horizon of textuality where meaning is occluded by the sheer plausibility of possible interpretations in a singularity of pure randomness. Every possible meaning is subsumed into a totality of meaning that allows none to escape, just as with a black hole in astrophysics.

The will of most poets, he contends, is against this:

'in the world of poetry, narrative has such a strong pull that there are lots of people in this world who deny that there even exists such a thing as storylessness, and if they will admit that such a thing exists, in their heart of hearts want to believe that it has no place in art.' (email with Russell Evans, 8.12.19)

As a mathematician, Rosenberg may see the purity of absolutes in equations where other poets may see the same in nature. For him, the nature of process is his subject matter. Indeed, basing his ideas on a mathematical concept of randomness led him to explore textual parallels:

‘There is some mathematics to the study of randomness. In particular, I believe it was Kolmogorov who asked: what does it mean for a finite sequence of numbers to be "random"? His answer was: the sequence is random if there is no algorithm for generating the sequence that is shorter than the sequence itself. What does this mean for literature? I would argue that the literary equivalence of a Kolmogorov-random sequence is a text which has no story.’ (email with Russell Evans 8.12.19)

In terms of poetry this equals a quantitative balance between the amount of signs and their signification, where it is impossible to say what the poem is saying by any shorter means.

Rosenberg may focus on process not as process at all -- in his work process becomes subject matter. His choices are positive turns taken to create a Pompidou Centre of poetry, where the inner workings of stairs and air ducts are matched by a foregrounding of ‘how’ rather than ‘why’. A problem lurking, as it does for all poets, of reception in the reader is the only spanner in the works. With no meaning from word signs, the reader presses on regardless and assembles their own. Rosenberg skirts around the ‘problem’ of the reader in comments about how and to what extent they should ‘operate’ his diagram poems. For example, discussing his process of ‘saccadic reading’ when he reads (the process of the eye jumping or flickering back and forth between words in a text), he states that he wishes the reader to refrain from reading it in this way: ‘if the reader is doing this then of course I can’t “prohibit” this, but with the diagram poems I’m hoping people will follow along with the diagrammatic structure...’ and ‘throw them out of the narration channel’ (Malloy 1996).

3.3.2 The reader vs the poem

Before leaving the subject of the reader, we can link the ideas of ‘process’ and of ‘reader’ in terms of how they oppose one another. Does the process used by visual poetry

enhance the object for its own sake (ontologically) or for the reader (receptively) or for the author (expressively)? Cognitive approaches address the reception of the poem. Ontology can be explored using Shannon Text Entropy, using textual baselines to in effect 'weigh' the text in terms of potentiality.

Rosenberg expects his work to be viewed or read (not a given as some artists may exclude the reader/viewer, thereby making another kind of statement) and that doing so completes its 'operation' mechanistically. But he places the machine before the reader – the latter is at the service of the former, not the reverse.

'It simply isn't true that the work "wasn't there" until the viewer "called it into being". Maybe it's my programming background -- the fact that I know what's really happening in the system -- but I simply can't think of it that way. All those menu choices that the reader hasn't made *are* there: they are files in the system. The reader's choice doesn't call them into being...' (Malloy 1006)

This hermetic conception of the poems suggests an Object-Oriented Ontology (OOO), where the complete work exists and is not altered or 'called into being' by reading. In visual arts this concept is hotly debated, as seen in Chapter 2, as anti-realist. In the hard sciences too, it is a concept that is not born out by experiment, where quantum physics shows us that any state of uncertainty collapses upon observation. Object-Oriented Ontology stands on uneven ground as a position to take in the face of reception theory, physics and cognitive poetics. For Cole (Cole 2015), OOO is 'commodity fetish in academic form.' So if Rosenberg's Diagrams cannot stand as islands alone from the reader it returns us to the problem of whether agency is given to the reader or retained by the author. It is academic – the reader reads and hacks as they do so regardless of invitation. The diagram is the middleman that allows this to occur since it has its own blind volition as a machine.

Furthermore, Deleuze does not suggest the diagram can live without a 'receiver/interpreter.' The diagram, he says, is one where 'further information is added when the message is interpreted,' (Goodman 1969). Blackwell and Anderson (Harvey 1991), also theorising the diagram, suggest that the diagram once encountered or 'read' 'produces its own third arena which is created from the interplay of relations, syntax and reader. Eisenman rejects the hermetic diagram concept more than most in his architecture writings, where the environment around a building acts as a reader does to a text, bringing new meanings to the building and in turn being affected by it, creating a feedback loop of affect and effect.

All this is to shed light on differences between the shared conceptual understanding of the diagram over the last fifty years and the authorial sealed space of Rosenberg's diagram poems. Philosophy suggests that the reader takes part in diagrams. But in Rosenberg are they invited only as passengers? Funkhouser (2019) sees the reader subsumed by the machine: 'Thus, Rosenberg writes, "To understand the network one becomes the network"'. An alternative and fascinating corollary to this idea, paraphrasing Rosenberg, is that to understand the poem the reader must become the poem.' (Funkhouser 2019)

Deleuze has had most to say about the 'abstract machine' (Deleuze 1998), to him, the diagram as machine is perfectly capable of operating itself. Rosenberg's statements prefer the diagram as overseen in strict accordance to his notation, and he expressly rejects the idea that the reader operates the diagram.

'There are those in the hypertext community who really push for constructive work, where what the reader does actually changes the work that others will see. There is a lot of hypertext rhetoric about reader-as-writer, to the extreme that

in some cases one gets the idea that works that are only readable without the reader being able to change them are somehow "inferior". This sentiment causes me a lot of anguish.' (Malloy 1996)

What exactly is the reader *constructing* in this process? Subject matter is a topic never discussed by Rosenberg in print or correspondence; it would be at odds with his pursuit to opt out of the 'narration channel.' So one must look elsewhere, to treat the works as innovations that require a different approach. Manin (Manin 2019) offers a starting point, that words need not provide individuated signage, but instead allow a hovering above the text by the reader similar to Joyce's contours Rosenberg referred to earlier.

'[a message] can be treated as a program that runs in the brain of the receiver and whose purpose is to create a certain mind state in it. This interpretation is particularly interesting for literary texts, especially poetry, because their purpose is not conveying information, but rather imparting an emotional state to the reader.' (Manin 2019)

There is also support for Rosenberg's approach in Miller's (Miller 1950) research on how far we engage with and recall apparently random short strings of five or six words – very much like Rosenberg's word clusters dotted around the diagram. Miller concluded from laboratory experiment, 'that when short-range contextual dependencies are preserved in nonsense material, the nonsense is as readily recalled as is meaningful material.' And that, 'contextual dependencies extending over five or six words permit positive transfer, and that it is these familiar dependencies, rather than the meaning per se, that facilitate learning.'¹⁷ The caveat here is these contextual dependencies, which essentially means the extent to which elements in the word string steer the meaning of other words. The clusters of words used by Rosenberg resist any attempt to find context, and he imposes no requirement that they should.

¹⁷ *Contextual Dependencies*: Reinterpretation of terms, due to words occurring elsewhere in a sentence. (Bianchi, 1999)

They appear random as in this extract from Diagram 3.1:

wing containing

blot the wish

effectively

version

of the moving stream

is pitted

number of years

specific personal

historian

of traction

migration

of the face knife

**excerpt from Diagram 3.1, Jim Rosenberg (copyright Jim Rosenberg)*

Miller (1950) suggested that there are degrees of de-contextualised text, that some level of randomness still allowed the participants to recall them. This refers back to Manin's approach above, that we are looking in the wrong place if we seek only word signs, and instead should look at the overall effect of the words at syntactic level. Applied to Rosenberg, this offers his word cluster a way forward: they do not *need* to make sense, they merely need to provoke a state of mind. Furthermore, with a diagram poem we already have the cumulative effect of saccadic reading, and the momentum of the diagram as a whole, whether or not permitted by the author. Added up, these provide a different way to read: one is to absorb the words and allow short-range associations to emerge. Rosenberg merely needs to supply enough short context to allow the reader to absorb the words. Note that the threshold of five words is crucial -- below this and context is too little to provide engagement with the text (Miller 1950). But Rosenberg goes to great lengths to repel even hints of context – we do not know to who, what or where the words refer, or how they 'bind' together as a phrase.

So between Miller and Manin, options are available to support Rosenberg's Diagram series but these are limited and can be further undermined by Rosenberg's statements. Another option is reading aloud or hearing the diagram poem 'performed. Judy Malloy experienced a Rosenberg diagram poem as a reading:

'It was not until I heard Jim actually read from his work (at HT2004 in Santa Cruz) that in the classic sense of reader reception, I was completely overwhelmed by the meaning of the words themselves. I've since urged Jim to read or record his reading more frequently, but Jim has his own ideas on this subject... he says that "Intergrams are not performable.'" (email to the author, 2021)

'Meanings' in this case is not what other poets might expect – meaning is not the affective or experiential tranches contained in poems; rather, meaning is contained in

process, just as journey is a part of arrival. The operation of the syntax as laid out in Rosenberg's notation is the point of the poem; to 'work' it is to experience its meaning – travel rather than destination.

Reading and cognition, then, are complex in Rosenberg. With the dynamism of the virtual diagram unable to take flight under the terms of reading determined by the poet, we are left with looking still more closely at how the reader engages with such texts. Specifically, what is the process of the gaze tour, and how does saccadic reading enhance the poem?

3.4 Cognitive poetics

3.4.1 *Why cognitive poetics?*

To address this question in quantitative terms we may first look at neuro-poetics, at how the eye encounters text and at how it encounters diagram text. Linear text is clearly visually different to diagram text, and it is worth reiterating that to Rosenberg the diagram form is non-negotiable in his work.

“The way that the work looks matters.... I started using visual means because it was the only way I knew how to achieve the result of putting words on top of one another and having something readable.”
(Baldwin 2003)

So we cannot look at his work without exploring the reading process in two areas: the uncontextualized words he chooses, as referred to above, and the challenge to reading that the diagram offers in cognitive terms.

Cognitive poetics developed quickly in the 1990s as a crossover between psychology, neuroscience, linguistics and latterly, Information Theory. Cognitive linguist George Lakoff's *A Field Guide to Poetic Metaphor* (1989) led to others which focused on the so-called 'cognitive turn' (Freeman 2009). A branch of research within this field looks into how we read in a physical sense, at where the eye moves and where it lingers when reading. Cognitive poetics has become more sophisticated as theories within it have been unpacked in more detail -- such as the simple form-content distinction which is seen as too binary, and also in the 'broadening of the term *meaning* beyond the referential.' (Freeman 2009).

There are two main ideas underpinning this approach. First, as we have seen above, Rosenberg stakes diagram poetry above and beyond linear text for his purposes so what is the gain with diagram poetry ontologically – that is, neither for reader nor author? Second, is it possible to provide evidence of uncertainty in both linear and diagram poetry? This has the potential to scrutinise the position held by diagram poetry of possessing open meaning and a new syntax. By extension it casts a question mark over innovative forms of poetry which seek to increase uncertainty as a means of broadening meaning. Ultimately, this scrutiny is necessary to test the 'special claims¹⁸' made by diagram poetry with the potential to strengthen the form.

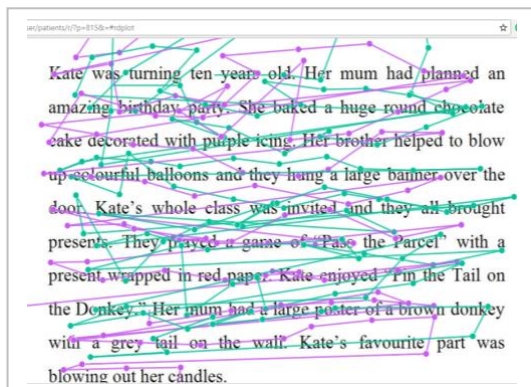
3.4.2 Eye tracking

Further evidence that poetic language is cognated in a unique way comes from the use of eye-tracking technology. For Riegel (RIEGEL 2017) eye tracking can 'provide insight

¹⁸ 'Special claims' – Gomringer (1954): 'common verbal practice denies the word's absolute character.' Walter de Campos: 'the degenerating influences of established language' (cited in Vos, 1987)

into cognitive processes relating to the reading of literary texts'. It also joins a growing use of multimodal analysis, stretching from sciences to humanities.

An experiment carried out by Raney (Raney 2014) explored the way the eye reads text



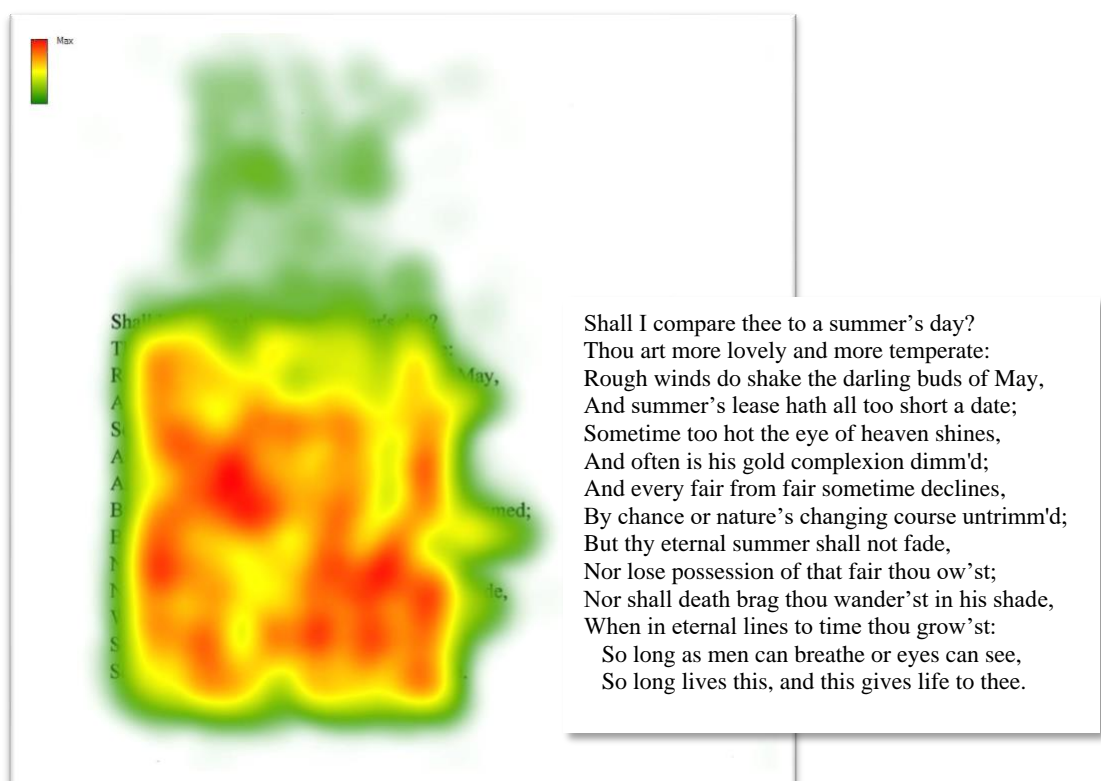
Left: research using eye tracking technology gathers data about the direction of eye movements when reading a text, including how the reader returns and re-reads certain words (Raney 2014).

that was described as having 'aesthetic measure.' Just as with the 'gaze tour' described earlier, participants in this experiment performed eye movements that matched this same shifting, back-and-forth eye movement. Readers, it was found, respond differently when encountering instructional text compared with metaphor-rich or poetic text. Menninghuis (Menninghaus 2021) describes this action as 'processing strategy,' differing according to what is being processed.

In an experiment, participants were asked to read sentences containing metaphors, and were observed to perform eye 'fixations' and 'regressions,' moving backwards to seek out and re-read key words in the metaphor, 'savouring' words, and unpicked what phrases meant. It was found that phrases with hidden meaning (for example: 'education is a springboard') led to greater regressions (returning to previous words to read again) and fixations (lingering on certain words again) and these were rated by participants as having greater aesthetic value. Metaphor, it seems, catches the eye and provides value.

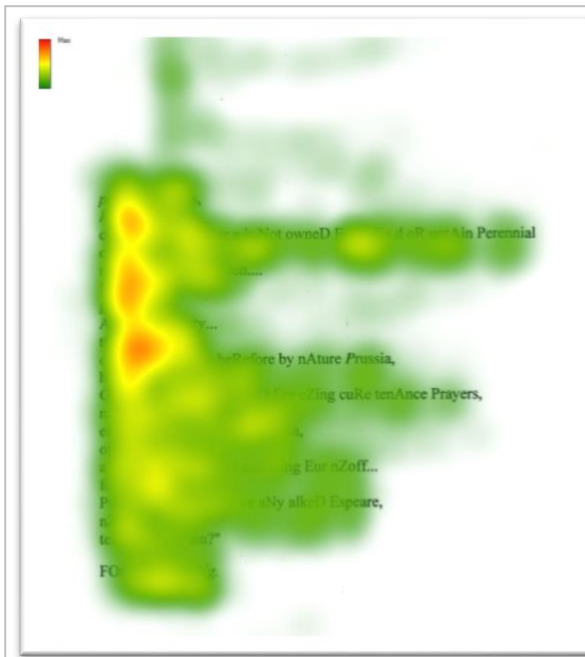
Taking poetic text further, however, there is a fine line to tread in how far a text can go before the reader gives up on this gaze tour. If meaning is not supported by fluidity of reading, evidence is that the reader switches off their processing strategy. This has implications for the decontextualised (random) word clusters used by Rosenberg. Experiments (Riegel 2017) looked at two texts: a Shakespeare sonnet (Sonnet 18) and a challenging ‘avante-garde’ poem by John Mack Low. Using eye tracking technology a heat map was built up to visualise the extent to which the reader engaged with the text and re-visited words, with warmer colours showing more engagement. The Mack Low poem possesses a similar pattern of Foreground Features and absence of contextualising Background Features as in Rosenberg.

As seen below, readers encountered the two very differently (diagrams from Riegel, 2017).



In the above (Riegel, 2017) image eye tracking technology was used as participants read Shakespeare's Sonnet 18. The warmer colours indicated how participants' eyes lingered, returned and savoured text. Note how reading was sustained until the end of the sonnet.

In the John Mack Low poem the result was a trailing off of engagement:



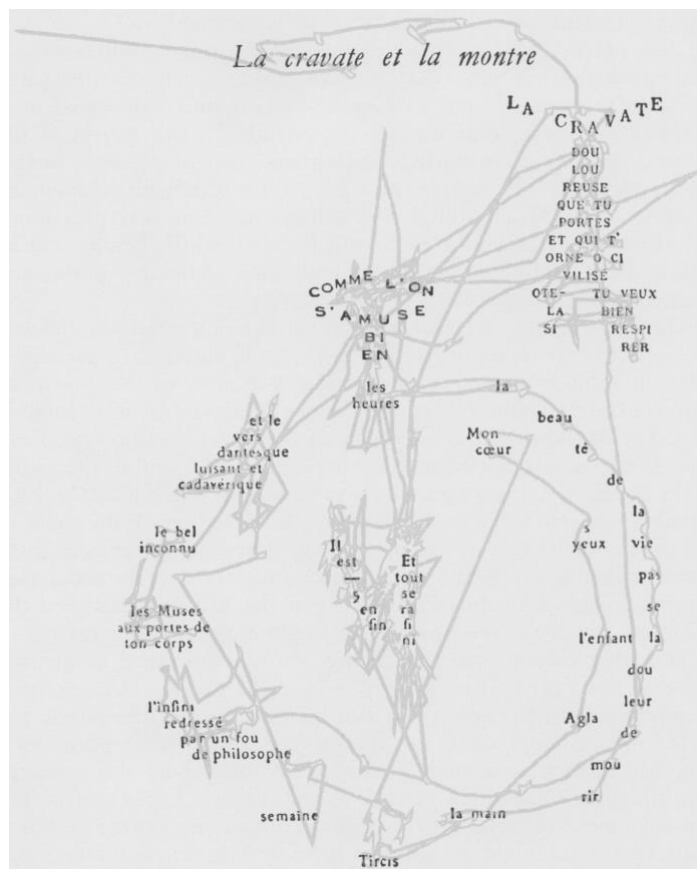
Both diagrams copyright Riegel, 2017

paRts om PAris,
 Potomac...
 cOmmerce n fUrther e is Not owneD Ead yZia d oR untAin
 Perennial
 cOry... moUs turNip f SweDen...
 E iZing s,
 gReat the
 Ancient Property...
 tO mpUte itiNg,
 o read Esop's nZa heRefore by nAture Prussia,
 hOg d,
 GUstavus ou kNow rge 3D Ere eZing cuRe tenAnce Prayers,
 mOns...
 eqUal as iN ur olD E TZin ntRa,
 out A \pable
 rOle f d'Une tion ccorDing Eur nZoff...
 foR depArture,
 Purchase e Only iqUe ve aNy alkeD Espeare,
 nZoff:
 teR e peAce Pain?"
 FOre mUst goiNg.

Riegel used these heat maps in ten poems – five from Shakespeare to Robert Frost and five from experimental poetry after the mid-1960s. The challenging poem (above) by John Mack Low presented readers with apparently large uncertainty due to the erratic and experimental syntax, use of lower and upper case and spelling. Readers engaged at first, but soon disconnected as the balance between fluidity of reading and challenge of finding meaning tipped in favour of the latter. Menninghuis (2021) too found that in syntactically challenging texts, rather than retain attention, 'readers tended to focus very little on specific spots in the poems, especially in poems – or places in the poems – where the departures from convention are the greatest.'

Results also showed that readers start reading slowly in linear text poems and then increase speed, regressing now and then. This is matched by text entropy analysis of poems where entropy did not rise continually but plateaued after several lines, at the same point as readers engaged more quickly with text. The conclusion may be that as uncertainty stops increasing, reading speed picks up.

The experiments above focused on challenging linear text poetry. The only experiment to use tracking specifically at diagram poetry was conducted by Shingler (Shingler 2011), examining how readers encountered Apollinaire's calligrams. Participants were shown Apollinaire's 'La cravate et la montre' (1914) for 60 seconds while their eye movements were tracked.



Above: eye tracking results for one participant of Apollinaire's 'La cravate et la montre' for 60 seconds (Shingler 2011)

Without the application of heat maps, it was uncertain how readers engaged in terms of time. One participant, for example, did not read the words as such but scanned them repeatedly looking for a logical sequence, showing that it was impossible to constrain the reader – they will encounter it in their own way. (Shingler 2011)

Research into eye tracking falls within the field of the 'neuro-cognitive poetics model' (NCPM) (Jacobs 2015) and has grown since Jacobs' research, which was an attempt 'to make explicit ... a number of hypotheses about mental processes theoretically involved in (written) literature reception' (Müller 2017). Müller's team devised an experiment which comes closest to scrutinising Rosenberg's work, using haiku instead of lyric poetry. Rosenberg's word clusters, with their micro-semantic values (for example, 'willing to adjudicate,' 'everywhere in sheen' – Diagram 3.1) bear *surface* cognitive resemblances to haiku.

Müller's experiment takes up where Riegel (2017) left off, looking more closely at the cognitive processing strategies underway in syntactically challenging short word-strings. Images were found to affect cognition when placed alongside words. Müller juxtaposed images next to one another, 'often in surprising ways... [and invited] the reader to construct, or contribute to the construction of, the haiku's meaning. (Müller 2017).' Images encouraged the reader to participate in micro meaning-making, since the surrounding text offered little to go on otherwise.

3.4.3 Linguistic features

Underpinning the neuro-cognitive poetics model is the concept that every word or cluster or complete text carries and imparts **Foreground Features** and **Background Features** referred to briefly earlier.

Background Features are those which are familiar to the reader but are implicit, such as grammar codes, sentence structures, knowledge structures which, 'facilitate immersive processing ... through the automatic (implicit) activation of familiar cognitive schemata, situation models, and affective responses' (Jacobs 2015). Tense, viewpoint, time, place all contribute to Background Features. An example is: 'I was once...' which presents the viewpoint and tense.

Foreground Features are the explicit meanings that affect or provoke sign responses, the schema and gestalt-making that involve responses – essentially, the actual content being communicated in the sentence. However, Background Features also feed into meaning-making and are not purely mechanistic; they inform an overall structure of a story or sections of it, such as suspense, or denouement. Taken together, Background Features act as a vessel to carry the reader while Foreground Features act as the main meaning-making occupying that vessel. To take the first example further of 'I was once...' the addition of '...happy,' would be a foreground feature word, containing the key content of the sentence.

Muller (2017) notes the importance of Background Features in neuro-cognitive poetics for providing immersive networks to enable a fluent reading process. Joined with Foreground Features providing recognisable word signs, this gives rise to a feeling of immersion: "the reader is absorbed by and transported into the text world, being in a

'flow' ... (Iser, 1976)" (Jacobs, 2015, p. 16). In this context, flow refers to immersion in the reading experience.

But Rosenberg's poetry operates in a different way, negating immersion because of three factors: an absence of previous words to build a structure of either meaning or interpretation; an entire absence of syntax unless accidental; and a disconnect between words in the same cluster, as much as with words in other clusters. Background Features are unable to take hold; when reading the diagram word clusters we can neither add them to previous knowledge of what they mean nor build them into meanings arising from that particular cluster.

Contextualised word clusters

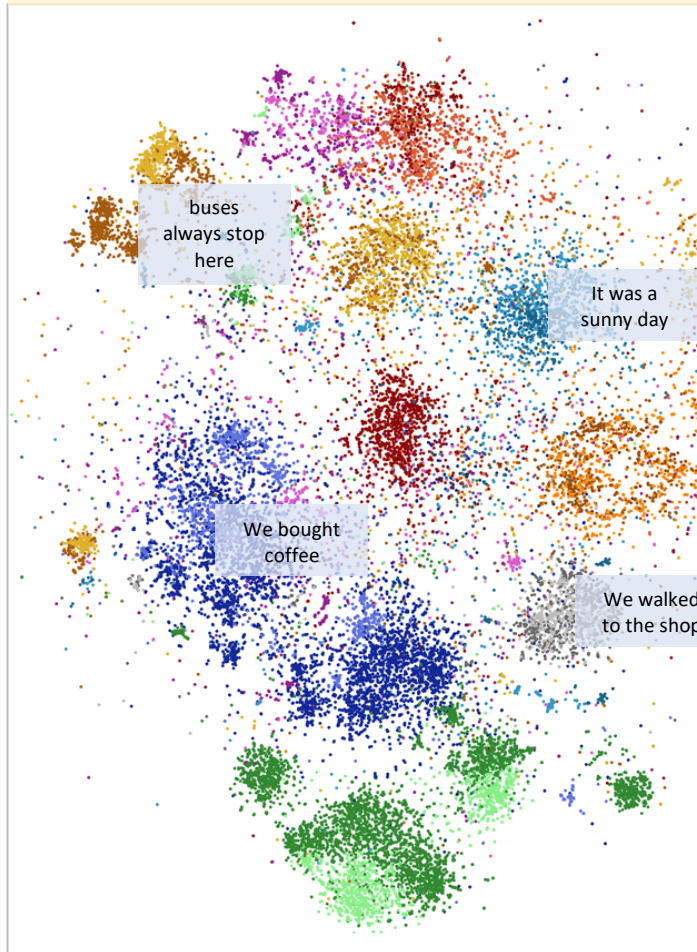


Figure 13: In this diagram, a collection of non-linear word clusters are arranged. Each cluster has implicit Background Features showing which tense the subject is in, point of view, and what is the subject and object. Foreground features include specific nouns or actions such as 'coffee,' or shop,' or 'walked.'

The coloured dots represent coherences of meaning brought together by this information.

However, in decontextualised, random words, this diagram would not have coherent colour patches but would instead show visual 'noise, as in the image below left.

Decontextualised word clusters



Figure 14: Decontextualised (random) would have no Background Features and could be visualised as signal noise. This visualisation also indicates the lack of uncertainty in such texts. All possibilities for all words are equally feasible – anything could occur. Therefore, there is zero uncertainty in terms of text entropy. Since any section of the image is equal to all other sections, so one piece of 'information' about it will suffice to describe all of it.

So, in Rosenberg, Background Features appear to be turned off in favour of Foreground Features alone, and specifically of *affective* words, in terms of Jacobs' Berlin Affective Word List (measured according to valence or arousal) (Vö 2009). To a certain extent, even decontextualised word clusters may indeed create affect in the reader, as outlined in post-structuralism. But as eye tracking experiments show and as Information Text Entropy indicates, the reader is left isolated in these clusters, jumping from one to another unable to accumulate meaning and ultimately the reader disengages. Background features appear to draw in the reader to a known structure they are comfortable submitting to, while foreground provides reward or 'savour.' The implication for Rosenberg's work is that the rejection of Background Features presents problems for the reader.

But there are subtleties with the concept of Background and Foreground Features. Muller (2017) and Jacobs (2015) both note that this model is too binary and benefits from more recent research that explores the space in between. This may provide a way in to Rosenberg's work. First, Jacobs notes the Speer (Speer 2007) (2007) proposition of 'event gestalts,' essentially the organisation of story or poem into sections, packages of meaning. Rosenberg too refers to his aim of creating 'episodes' in the diagram. 'Event gestalts' rely on the concept that the left hemisphere of the brain (a concept itself not at all accepted uniformly in neurology¹⁹) seeks to assemble meaning even in random text. This does, however, disconnect author from reader finally, and would go against Rosenberg's statements about how much agency he would allow the reader.

¹⁹ See research such as *An Evaluation of the Left-Brain vs. Right-Brain Hypothesis with Resting State Functional Connectivity Magnetic Resonance Imaging*. Nielsen et al, 2013

Second, and more encouraging for Rosenberg, Jacobs notes work by Ludtke (Lüdtke 2014) which experimentally concluded that meaning can be adduced from just three lines of text, suggesting, ‘readers’ resonance with mood or atmosphere *of a scene...* could be an indicator of immersive processes specific for poetry reception...’ (Jacobs 2015, p17) (my italics). Mood and atmosphere can be generated in short segments of text, but as the italics suggest, Background Features will need to perform to enable this to take place. Haiku seeks to create a single cohesive ‘event’ or scene, and rarely rejects in its classical form all sense of place or meaning.

Finally, a third possibility suggests ways that Rosenberg’s work may proceed. In Muller (2017) the very difficulties described above offer a way forward. Muller suggests how ‘unusual form elements’ and ‘semantic ambiguities’ do indeed interrupt the forward momentum of reading and subsequently of immersion in the text because they halt a creation of underlying structures, but that this in itself captures the reader and grabs attention, thereby:

‘...defamiliaris[ing] what the reader thought s/he recognized, leading to a distrust of the expectations aroused and a reconsideration of seemingly straightforward discrepancies that are unwilling to accommodate themselves to these patterns.’ (Iser, 1976 as cited in Jacobs, 2015, p. 7)

Like a puzzle, it grabs attention. As a result, eye movements slow down (Muller 2017), as a disfluency takes over, requiring a more ‘self-reflective reading mode’ which leads to the reward of seeking ‘new meanings from the multitude of meaning potentials’ (Muller 2017). But, as a crucial caveat, this rests on integrating ‘existing schemata,’ in other words using syntactic convention in new ways rather than a complete disconnect from them. Nevertheless, this circuitous route brings reward:

‘...“after initial moments of familiar recognition, followed by surprise, ambiguity, and tension, the closure of meaning gestalts [releases the tension and is] ...

occasionally supplemented by an 'aha' experience ... or feeling of good fit, 'rightness', or harmony ..." (Jacobs, 2015, p. 16).

However, this is the neurocognitive scientist looking at poetics and a question must be raised at the criterion of 'harmony' at the end of the last statement. This recalls Berkhoff's 1933 formula for informational aesthetics which attempted an aesthetic measure with every artefact based on his now famous equation. Aside from the difficulty of the term 'harmony' itself being an arbiter of aesthetic value, the main objection to Berkoff's work came from psychologists, overlapping co-incidentally with similar concerns of post-modernist art critics who claimed that the central problem lay in the placing of aesthetic value in the *object* rather than in the *observer*. Reception was what mattered, not the ontology of the object. Psychology, meanwhile, also takes issue as in McWhinnie (McWhinnie 1968).

So Jacobs' and Muller's way forward for poetry such as Rosenberg's which reject Background Features, is that it achieves 'harmony' through completing the difficult work of assembling meaning from it. Next, rather than place the reader under scrutiny we can delve into the diagram poem itself on its own terms, as a workable machine made up of signs. A way to draw together reader and the textual plane is to home in on the potential within the poem, at the uncertainty that it can carry and how this stands up to measurement.

3.5 Text entropy

3.5.1 Analysis of Rosenberg diagram poems

If the reader takes part in the operating of a Rosenberg diagram poem, rather than working out its meanings, then on what scale is the reader performing as machine? What space does it occupy? In Shannon Text Entropy, a sub-field of Information Theory referred to in chapter 2, the virtual network of spatial possibility can be quantitatively measured. If diagram are lines and space, this method ‘weighs’ the spaces as degrees of uncertainty or possibility. It is then possible to compare such measurements to other texts.

In this section texts are tested using Shannon Text Entropy formula to determine potentiality. The results will shed some light on the degrees of uncertainty arising from Rosenberg’s word clusters and diagrams as a whole. This formula has not previously been applied to poetry in this way.²⁰

Text Entropy analysis is seen in Burton and Licklider (1955), Paisley (1966), Kolmogorov (1968), Cover and King (1978), Kontoyiannis (1996/1997), Pereira et al. (1996), Teahan and Cleary (1996), Moradi et al. (1998), the earliest being Paisley (1966) (cited in Manin 2019). These approaches ‘have been successfully applied to a wide range of disciplines, including ... social systems ... as well as literature’ (Sigakia 2018). Manin (2019,) too, says that, ‘Thinking about poetry and literature in general in terms of Information Theory turns out to be surprisingly productive.’ As analysis for literature it can be a flawed

²⁰ Conversation with Dr Marco Palomino, Natural Language Processing specialist, University of Plymouth, 2021

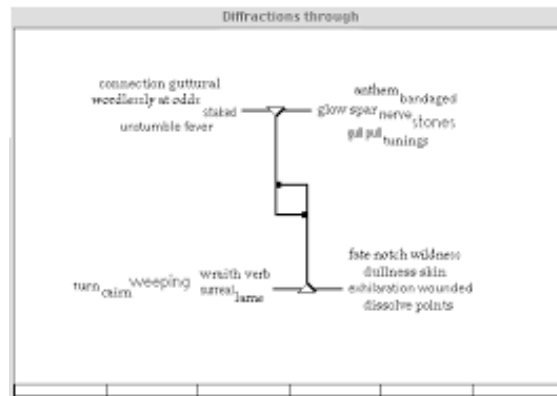
indicator since it is only as reliable as its training corpus²¹, but the tests used in this chapter apply Shannon Text Entropy (STE) formula in a raw state without a training corpus.

3.5.2 Understanding Shannon Text Entropy (STE)

There are several elements to define before moving to experiment. Text Entropy units are known as ‘Shannon bits’, which are based on how many yes-no questions would be needed to ascertain the next step in a word string (ie, probability is 1 in 2). One can apply STE formula to letters or words. The former is used in predicting what letter comes after another (for example, very high certainty that ‘u’ follows ‘q’) The latter is used widely across mobile phone keyboards and elsewhere to predict the most likely word which follows another. A word with high predictability will need less information (fewer Shannon bits) to carry it than one which is more obscure. The degree to which words or letters can be lost is known as textual ‘redundancy.’ The redundancy of the English language is calculated at 69% (Roberts 1999), ‘meaning that more than two-thirds of a word string can be removed while still retaining meaning.’

²¹ Training corpus: a selection of millions of words used to train the algorithm to suggest possible next words.

A key property of word block text entropy is 'surprise' or perplexity which refers to the relative unexpectedness of the next word in a sequence (Lowder 2018), '[making] it simple to estimate surprisal values for any input sentence, thus making it possible to



Above: extract from Diagram 4.1, Jim Rosenberg

investigate word-by-word predictability. Lowder suggests that high surprisal words contain self-information and add to the sum total of uncertainty. Further complicating this is the use by Rosenberg of non-linear layout in his word clusters which should -- in theory -- substantially add to entropy by having every word potentially in any position in a sequence. Since uncertainty is highest when all potential signs are equal, in other words when it is impossible to predict the next sign, then entropy is reduced (Genzel 2002), known as the 'nonsense paradox.'

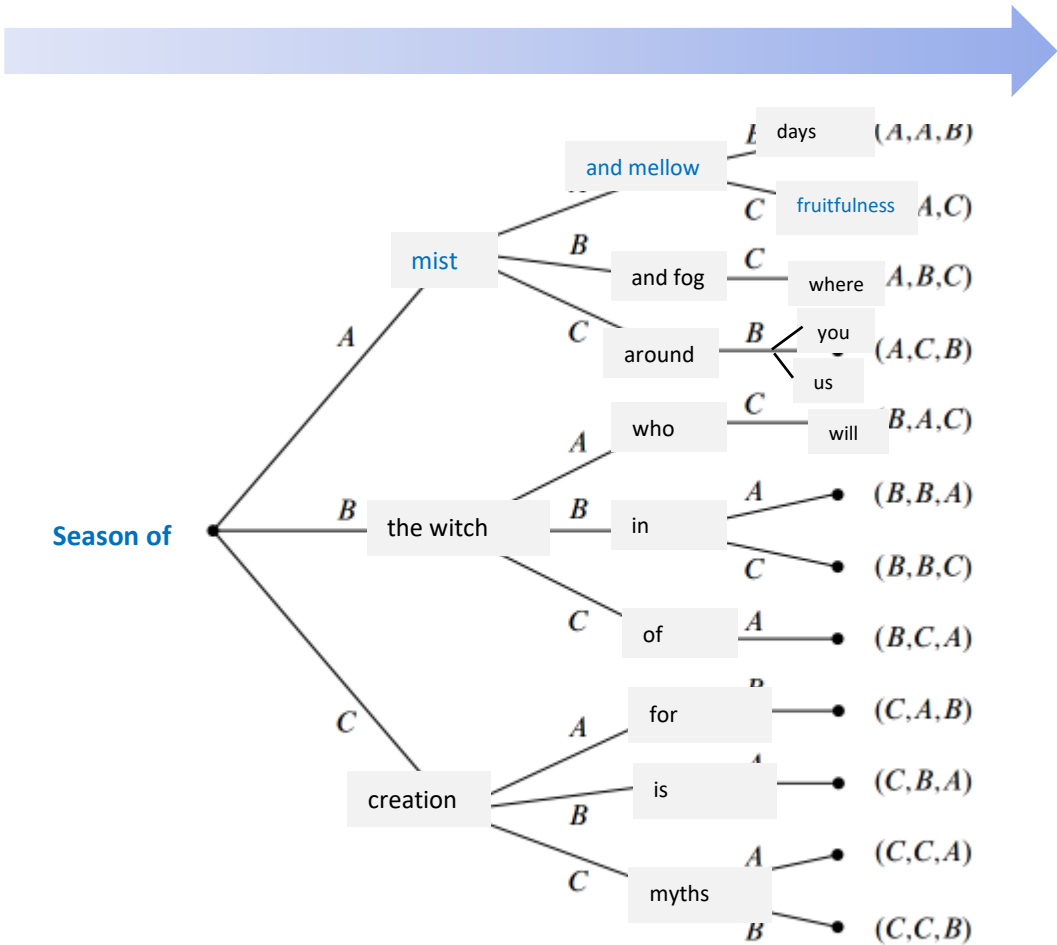


Figure 15: in Shannon Text Entropy, every word has a number of possible following words, determined by a machine-learned corpus of texts. In keyboards on smartphones the user trains the algorithm with their own corpus of most-used words. In this example, a line from Keats begins with ‘Season of’ (the blue text shows the correct words from the poem). Likely choices are then presented after each word; the greater the number of possibilities, the higher the potential for uncertainty. Too high a number and the state collapses into zero uncertainty.

Before applying STE formula, we establish the length of the word string to be tested, the optimal parameters for which is 3 to 4 words (Riedl 2013). Rosenberg’s breakthrough in his diagram work was in using word blocks of between 3 – 6 words, so these lend themselves to testing as given parameters.

If, as we have seen, the brain is able to compensate for missing data in word strings to the extent of 69% of missing text, does this then suggest that Rosenberg's word clusters succeed because the brain fills in gaps to assemble meaning? In other words, do readers construct Background Features to support Foreground Features? To look at this in reverse, can we measure how many gaps there are in meaning and how many questions it would take to fill those gaps, as in the diagram above? The resulting number would be in Shannon bits, and it would indicate how much space of uncertainty there is. But one must not forget the reader.

As an example we may use a simple phrase: *'the cat sat on the___'* which for many English speakers leads to an expected word: *'mat.'* However, the phrase, *'blooms the phase___'* used in a Rosenberg diagram poem does not immediately lead to the following word which was *'lashed'* (Rosenberg: Diagram 3.1). This highly unexpected next word would intuitively suggest that uncertainty is therefore high. But this is not the case in Text Entropy terms. The absence of Background Features which allow the reader to narrow the range of millions of words to possible choices of perhaps a dozen causes a problem and stops our choices proceeding. So as described earlier and seen in the diagram on page 131, all possible choices become equal because there is no context, thus there is null information because there are zero possibilities to report. The property we call 'uncertainty' arises from an *unstable* certainty, whereas a vacuum of possibility leads to no uncertainty. Added to this hurdle the problem that the reader has been shown to switch off attention with decontextualised text and the receiver (the reader) disconnects. Without reception there can be no signal -- only noise.

3.5.3 Rosenberg and text entropy

Next, let us turn the question around and ask whether in fact Rosenberg seeks what one could call 'un-meaning,' a structural zero of no information as a positive value? Certainly his statements on storylessness and randomness suggest he neither wants nor needs us to comprehend his texts as anything possessing meanings. He sees the zero position 'as the most elemental manoeuvre at the heart of abstraction' (email with author 2019). There is in one sense a purity at the heart of his aesthetic, in his citing of the Kolmogorov Complexity as a description of absolute randomness. This reveals a simplicity in what could be termed the underlying mathematics of his poetry – the irreducibility of the text is achieved. In this way, zero information (bits) becomes an indicator of success in Rosenberg's elementary aims.

In fact, Rosenberg himself reverses Shannon uncertainty when he describes the process of making his work. In 'BIOS: The Logosphere' (Rosenberg 2015) he asserts, 'The text is not the code, it is the channel. We turn Shannon inside out.' Every code is made to be decoded so one reads here that the poet does not expect the words to be read as signs at all. Instead, the thing to be decoded is the channel, the process, the machine. This lends strong support to the exploration and testing of the channel as a quantum of information bits, as we will do later in this chapter. It also offers a strong underpinning of support for Rosenberg's aesthetic.

The main property of Rosenberg's channel is juxtaposition and unpredictability. In 'Openings' (Rosenberg 2015), Rosenberg talks about the use of juxtaposition as a tool for poets. To achieve the truest juxtaposition one needs to abandon syntax that makes sense, he says. Elsewhere, he again refers to hypertext as the channel which rejects

syntax, and which he seeks to engage to the extent that it will be, 'as a medium in which one "thinks native" thoughts that are hypertext all the way through: hypertext extended into the fine structure of language.' (Malloy 1996). We have seen how the poet rejects story, would like to 'throw the reader out of the narration channel' and is equally resistant to close reading, seeing it as incompatible with cybertext (email with author, 8.12.19). Group meaning too is rejected because '[t]he [word] clusters are juxtapositions where the individual layers are just "there together" and have no other relationship than that of being in the same point in space. I call this the null structure.' (email with author 2021). The aim is of a channel of juxtapositions.

3.6 Experiment and result

3.6.1 Hypothesis

In the following, Shannon Text Entropy is calculated for selected texts. The aim is to provide context for the discussion of Information Theory text entropy applied to Rosenberg's work but also to use the quantitative method outlined in chapter 2, one of the four modalities used as criteria for the diagram. This test provides relative complexity and surprise in these texts.

If measuring the unpredictability of a text it is useful to have a baseline to start with, used as a gauge for the least surprising, most predictable use of language. A baseline for comparison is here taken from Moradi (Moradi 1998) who identified the lowest example of English language entropy rate in a textbook, Digital Signal Processing (Smith 2013) , calculated at 1.65 – 2.27 Shannon bits. This essentially means that every word sign in

the selected text needed this number of binary questions to ascertain the next sign. This was very low and shows that a high redundancy rate is present, in other words, the ability of the reader to understand the text with certain words missing. The reader can fill in the gaps because it is reasonably predictable. To give an indication of the range of results, if the lowest baseline reading is 1.65 bits, a high reading is regarded in the region of 4 to 5 bits. One would expect that STE for poetic text would be in a range above the baseline but below the range of maximum information where the nonsense paradox²² takes over.

Each poem is calculated according to Shannon Entropy (H) formula:

$$H(X) = - \sum_{i=1}^n P(x_i) \log P(x_i)$$

The hypotheses being tested are:

- i. whether there is significant gain in unpredictability or 'surprise' in the selected diagram poems as opposed to linear text poems. In other words, does diagram poetry have the upper hand in obtaining greater complexity and range of meaning-possibility?
- ii. Whether unpredictability increases or decreases the greater the window being calculated. In other words, does it get more unpredictable after three lines, ten lines and so on? This would shed light on whether word clusters are more or less open to potential meaning.
- iii. Depending on the outcome of the first two questions, what structural features are at work determining possibilities for the reader?

²² The Nonsense Paradox is a state in which all possibilities are equal so no prediction can be made.

To explore these questions this paper tests three Rosenberg poems, three poems by Emily Dickinson, and one by Rudyard Kipling. A second batch of testing seeking to check results on longer texts above 180-200 words, looked at a further two by Rosenberg and one by Dickinson.

3.6.2 Test Batch 1:

1. Jim Rosenberg: Diagram 4.01 (1984)
2. Jim Rosenberg: Intergram 11 (1988-1992)
3. Jim Rosenberg: The light arranged to feel the mountain (From 'The Winding Interval' 1984-1987)
4. Emily Dickinson: F.372²³ ('after great pain')
5. Emily Dickinson: F.640 ('I cannot live with you')
6. Rudyard Kipling: If (c1895)

As a comparison, the poem 'If' by Kipling is chosen as a text well-known to many European readers. The Dickinson poems are included as examples of text which offer challenge to certainty, since her work is 'elliptically compressed, disjunctive, at times ungrammatical, its reference is unclear...' (Miller 1987) but which uses linear means rather than diagram or visual means. The texts chosen are not intended primarily to be compared to one another, since they vary so widely, though this does provide interesting data. Rather, each is being compared to the baseline of lowest level English

²³ The letter 'F' refers to the number accorded the poem by Franklin in 'The Poems of Emily Dickinson' Harvard University Press, 2005.

text entropy. Results may provide a starting point for discussion, enabling an indication of STE levels that poetry achieves in three distinct authors.

3.6.3 Test Batch 2 (texts between 180-200 words long):

1. Jim Rosenberg: Diagram 4.10 (1984)
2. Jim Rosenberg: Diagram 4.15 (1984)
3. Emily Dickinson: F479 ('because I could not stop for death')

The online test used Shannon Text Entropy formula in its raw state²⁴ (www.dcode.fr) for word unit calculation. Word unit is the most suitable use of STE for poetry (Kalimeri 2012) rather than letter-unit entropy which asks simply how recognisable is a single word from just a few letters. Other calculators not used here include sign frequency looking at how many times a certain letter occurs, Permutation Entropy which looks at patterns in the text in a given time window, and others which pre-process text before testing, such as removal of line breaks and punctuation. In natural language processing (NLP) coding, STE is used widely to create AI text prediction and to determine uncertainty, using syntax, context and metaphor (Alsiyat 2020).

3.6.4 methods of calculation

Different methods of processing the texts for calculation were used:

²⁴ Email to Russell Evans from dcode.fr administrator, 2021

Original text:

1. Separate clusters of words were taken: 5 words, 10, 20, up to 70. It was noted that there is more fluctuation in entropy in the first few words, hence the plotting of 5 words first, before moving to groups of ten. This is used simply to allow for direct comparison between texts where stanzas are different lengths.
2. Next, groups of words were taken as determined by the poem's author. This is either stanza, line or word cluster.
3. Finally, after taking separate groups or clusters, these were added cumulatively to assess how entropy builds over a time window.

Raw text: in further tests, some pre-processing was applied to the text next before calculating:

1. Test 1: All line breaks, punctuation and other notation removed. Testing was then undertaken by word cluster.
2. Test 2: calculated the clusters cumulatively.
3. Test 3: looked at final whole-text entropy in raw text.

3.6.5 Results:

The results are arrived at by the widely-used algorithm on p139 applying Shannon Text Entropy to calculate the number of yes/no answers required to find the next word in a sequence (known as a word 'string'). The greater the number of questions required, the

greater the Shannon 'bits' needed to convey that information in a fixed communication channel. Text prediction becomes essential for making better and better guesses about what word comes next. In general, text responds as a skewed result, in other words that certain words are *more* likely than others to occur, unlike for example in a fair die where all six numbers will occur *equally*. But an algorithm needs training in order to make better predictions, for instance that the word 'change' may frequently follow the word 'climate' in news articles, but that in another arena may be followed by 'forecast.' This training is enabled by a training corpus of thousands or millions of texts from the field the algorithm will be applied in.

It is not necessary that a specific training corpus of, say, poetry is used, since it is assumed that readers of poetry derive their own internal corpus of words from the same wide set of media in a given language and therefore bring to bear their own understanding of certain words and expectation of what comes next. A frequent reader of poetry trains their own corpus to recognise and quickly accept divergent syntax as normal, expanding their expectations, while an infrequent reader of poetry may quickly see all possibilities as equal and therefore lose their stake in the poem. In order to assess results of how different texts perform subjected to this algorithm one needs only to use the same – or none at all – training corpus. The algorithm used here was untrained.

Key findings:

- Across all texts, poetry expected to have greater uncertainty of meaning (contemporary diagram poetry) and therefore potential for greater meaning scored lower than more traditional lyric poetry in the pre-modernist era. Texts which appeared

to direct the reader to certain meanings paradoxically scored higher for potential uncertainty.

- In tests on Emily Dickinson (ED) and Kipling (K), entropy is held back by line breaks and punctuation. Raw text is higher in entropy value.
- In word unit entropy, measuring pre-determined amounts (10 words, 20 words, and so on) all text starts with low STE and rises quickly in a few words.
- In most texts, after 10 words a pattern is set: a flattening occurs in results.
- However, ED poems do not flatten. They continue to rise throughout the text, settling only at the last 10%.
- Overall, Jim Rosenberg (JR) poems score lower in entropy across all tests.
- In raw text testing cumulatively, JR also scored low, while ED scored even higher than in the original text where punctuation and line breaks were included. Suggests that entropy in her work would be higher were it not for the tempering device of the line breaks and em-lines.
- The uncertainty level in ED is much higher than JR. K1 also scores higher than avant-garde poetry.

3.6.6 Discussion

The original aim of this test was to determine the text entropy values for compared texts. This may have indicated the potential meanings available in Rosenberg's diagram poems. However, an unforeseen result arose when observing how different texts performed and in particular how they performed when structural, so called Background Features affect results.

The concept of Background and Foreground Features appears to play a role in text entropy in this experiment. The implications for Rosenberg's work concern the random selections of decontextualised word clusters, which do not carry Background Features and that it is these elements that play a role in reducing potentiality and uncertainty. It was unexpected that the linear text prose poems selected would score higher in uncertainty. Again, looking at Background Features, in Dickinson (in repeated testing) her 'elliptical' phrasing perhaps helped propel her text to higher levels of potential uncertainty and therefore potentiality, and was helped by structuring devices that sat on the very edges of syntactical norms.

In Rosenberg, the absence of recognisable sentences or phrases for the STE to analyse gives the STE formula only Foreground Features to test. Indications are that Background Features have a greater bearing than first thought on poetry cognition, and lay out the 'train track', as it were, of the sentence or cluster. Without this 'track' of structure the text is prevented from assuming full potential. Randomness ultimately appears to prevent the text from taking flight.

A second batch of tests looked at longer texts of over 100 words, in order to determine patterns over a longer window. The Dickinson poem at 127 words retained its level above the non-linear Rosenberg poems, but was far higher over a longer window than the first batch, scoring 4.5 STE bits at the start and levelling off at 4.2 bits at its lowest. Rosenberg's Diagram 4.15 scored throughout lower than the prose poems tested. One cluster of three words in this poem scored 1.95, within the English baseline for lowest Text Entropy shown above from a textbook of between 1.65 – 2.27.

Further tests are needed in order to eliminate quirks and idiosyncrasies in the texts and to focus more specifically on other texts that also reject Background Features.

3.6.7 Conclusion

Diagram poetry challenges the reader— both visually and textually. It challenges the reader to go beyond reading, causing jarring cognition in icon and word, incurring saccadic reading, leading to fluctuations in eye movement and varying degrees of engagement as a result. A key aim of this chapter has been to place Rosenberg's diagram work under scrutiny under the terms laid out in Chapter 2, which sought to define the diagram, and ask the question: how does the diagram live up to its potential in the real world of readers? In its own world a diagram poem can convincingly make a case for its rich properties in a multi-layered topography and has a history of diagram philosophy to draw on but when encountered by readers it also encounters debates and challenges. By examining such an uncompromising example of diagram poetry as Rosenberg's work one may begin to flush out problems which only reveal themselves at the far reaches of the spectrum.

Rosenberg's work succeeds and fails at this point, depending on whether one locates the reader as a participant of the diagram or an operator of it. As a participant one is subsumed into the machine of its workings and alters it as a result. As an operator, however, one is subsumed into the diagram as a cog of the machine and does not affect its workings. But a key proposition of Chapter 2 was that the diagram rejects attempts to steer it -- neither reader nor author can do so. Behind this central propulsion is the assemblage. This active, fluctuating centre determines that the diagram is not a vehicle or a vessel but is its own exponent, sometimes for purposes of power as in Foucault, and

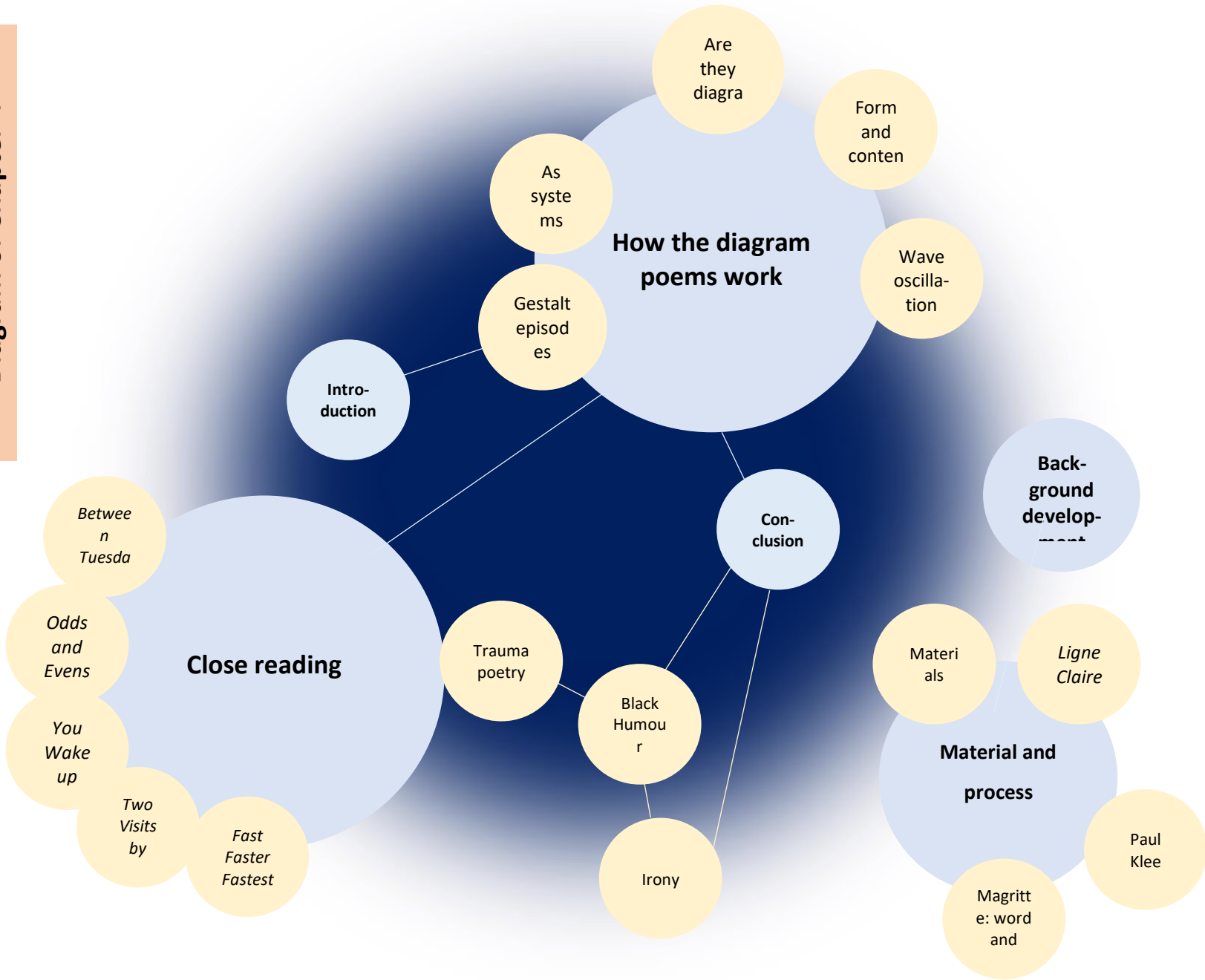
others for no more than the participation of affect. In a moment of agreement, DeLanda and Deleuze stake the assemblage as the driving core of the diagram. This mirrors the division between static and moving in particle measurement in post-classical physics, where momentum vs position, flux vs still, is settled in terms of the former.

"The assemblage is the minimal element of Deleuze's system: 'The minimum real unit is not the word, the idea, the concept or the signifier, but the assemblage .' The assemblage is connective, heterogeneous and multiple. It brings together disparate elements and organizes them. The assemblage connects, links up, creates relations between terms and objects of differing nature." (Zbedik, 2012. p25)

Alternatively, Rosenberg's work taken on its own terms does not take part in the question of meaning brought by the reader. That debate is inverted: the question is not the close reading of text clusters but instead it is the whole interception with the diagram as a working machine. Process and operation is all. To reiterate from earlier, meaning is contained in process just as journey is a part of arrival. The operation of syntax as laid out in Rosenberg's notation is the point of the poem; to 'work' it is to experience its meaning – travel rather than destination.

Finally, scrutinising Rosenberg's work has revealed issues that other diagram poems, visual poems, digital poetry and other manifestations of the new grapple with: the reading experience, and the extent to which meanings in words are not intercepted by the reader because Background Features – the train track on which the text rests – are not present. These Features nudge syntax back to the readable, even in discrete packages. One question that this does ask is whether visual means can provide Background Features, using the visual element of the diagram to bring to the text that which it is missing.

Chapter 4: Critical Reflection



This chapter will analyse and reflect upon my own personal poetics in visual diagram poetry. It will explore the processes contained in the works, the process that leads to them, and the mechanics of how they operate. This may also shed light on the issues discussed in previous chapters of how visual poetry fares in reality, in a portfolio of work that tries to engage with the interdependent and often contradictory factors of reader engagement, philosophical integrity, subject matter and materiality. I will present them as a personal variation which tests the conceptual diagram as a model and pushes it towards the particular rather than the general.

Similar to the study of Rosenberg's work in Chapter 3 I will apply the conceptual diagram to my own work and show a parallel fault line in my own work to that of Rosenberg's, not to expose a deficiency with either works, nor to suggest a problem with diagram theory, but instead to show how the diagram can assume other forms than discussed in earlier chapters.

Where Rosenberg's work has the ingredients of a diagram but none of the author's permission, my work creates single-use diagrams that disrupt the performative aspect of the conceptual diagram. Foucault's presentation of a diagram that can exit its original form and transpose itself to new environments is one of exteriority, but I instead seek to contain the conceptual diagram by making its exit useless since it can apply to one situation or phenomenon only. They sabotage any such exit routes and in so doing create a variation of diagram which fits no other situation, episode or moment. They schematise particularity, creating an inner dynamic of looping interactions between icon

and word where specificity and individuation of moment, names, places and actions remains bound in a one-off assemblage. They are made-to-measure diagrams which dispute the Foucaultian ultimatum that the diagram must become a blueprint or schema. But in rejecting this wandering impulse they instead become active in another way. They are classification systems which reflect on the process of classifying as much as any subject matter they contain, in other words are diagrams of the construction of thought.

In reflecting on my diagram poetry, I apply some concepts from physics, which has successfully identified ways to find the value of a moving uncertain state, and reveal what observation or reading brings to bear on that state. It also presents further questions to apply to the abstract flux that is the conceptual diagram, enabling use of an existing model for similar states. The aim is to show that there is a discernible and clear taxonomy to my work, and that the diagram poems presented have clear links as a body of work.

That accountability is a central purpose of such a critical reflection, so a later section in this chapter will look at a number of diagram poems and offer insights to how they function, and point of threads that recur in terms of processes, devices, words and icons.

4.1. Background development

I have been working with image and text for some years, using photography and installation. Earlier work included text with a more complex surface, using a thick base of unfired ceramic clay rolled to create a surface which could be etched into. Using

stoneware clay provided a reflective surface onto which a slide projector could be used to project photographic slides. Later work reduced the projection to a minimum, before abandoning it in favour of purely etched lines and words.

Drawing used a clear line and was based on cartoon devices such as speech bubbles, emanata²⁵ and speed lines. The use of cartooning also appeared in paintings shown at the University of Exeter gallery earlier in my career in 1997. But the form used in the creative submission cohered only fully in summer 2020, following extensive work on poetry text in a series of weekly workshops with the poet Golda Solomon (via Zoom) at Blue Door Arts Centre, New York. Solomon is writer-in-residence at Blue Door, where I have shown my art work previously. She was joined by Jacqui Reason, a memoirist and poet. Through workshops my text poetry was continually honed and edited, while readings provided an opportunity to observe how readers engage with my work.

This process provoked a sharp reduction of poetic apparatus previously used, much of which had overridden content by focusing on surface form. Feedback from Solomon and Reason, whose work focused on their own working class lives in, respectively, Brooklyn and the Bronx, was encouraging in producing a voice that looked at my own experience and was open to sharing it. Encountering other poets who also deal with experiences of deprivation, addiction and poverty has been crucial in finding this voice but also avoids the tropes that so often play out in such poetry. Connecting to Solomon's Jewish antecedents and Reason's African-American heritage made links with marginalised voices in general. This broadened into forming a personal community of artists and

²⁵ Emanata: a term used in cartoon drawing to refer to symbols that show emotion of a character, such as spin lines, stars, teardrops, sweat.

poets including poetry critic and anthologist Ann von Buren and visual poet Deborah Maier, both of whom teach in universities in New York. This has strengthened by work by allowing me to connect with others in what is still a very disparate community. One branch of this community focuses on poetry comics, which acts as a sub-genre of visual diagram poetry and is close to my own work which I see as a hybrid of diagram and comics. Through this network I was put in touch with the poet Bianca Stone, who is prominent in the US for her work with Ann Carson and for single-handedly reinvigorating visual poetry in the poetry comics genre. Stone has become a strong supporter of my work, and commented:

‘The poetry comics scene is bizarre and all over the place, and no one can really quantify it. I can say for sure, your work is closer to what I believe poetry comics are than most of what I see out there. (email to Russell Evans, Aug 2021)

From there I have continued to produce diagram poems and move closer to poetry comics, using these both to exhibit and to engage in publishing.

4.2 How the diagram poems work

4.2.1. Form and content

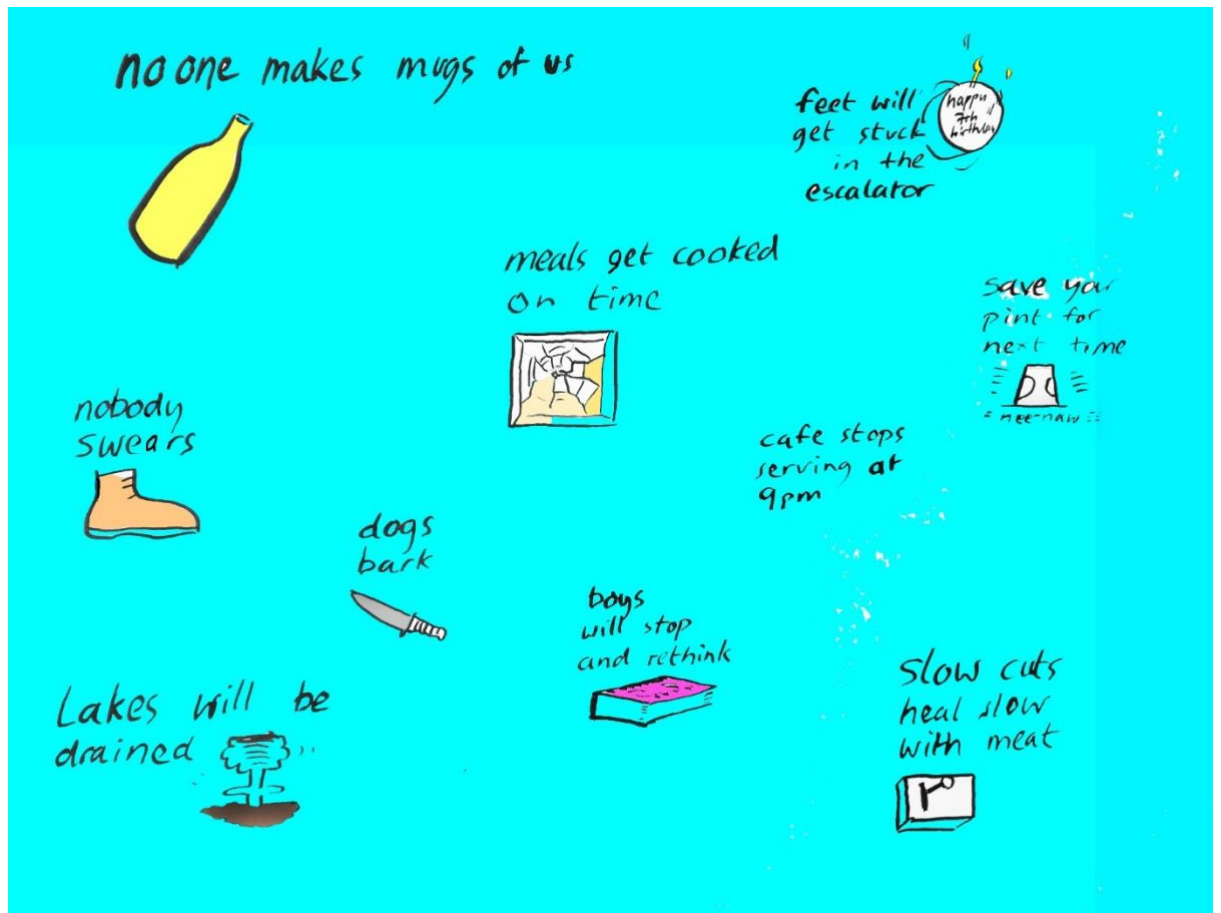
The idea of art work being a balance of content and form is a frequent debate in visual art. Hegel suggests that, ‘the content of art is the Idea, while its form is the configuration of sensuous material’ (Hegel 1993), a view which takes the stance that harmony is the result of such a fusion. The extent to which the form is subservient to the content has varied in modernist art, while the object-oriented ontology of twenty-first century art

has tended towards form for form's sake, with content thoroughly under the thumb of materiality.

In my work, the Hegelian idea of harmony, echoed in Barkoff's aesthetics (Rigau 2008), is sidestepped in favour of another concept: content is lent *disharmony* by making word and icon at odds. Harmony is replaced by a similar ultimatum, that of a dead impasse where icon and word can no further pull or push against one another. This stasis of form and content possesses a more frozen appearance than the warmer harmony suggested in Barkoff. Instead of harmonious accomplishment the image is only completed once no further reduction can be made. Reduction in these works is achieved when the simplest way of achieving image/text is found. Each cluster of image/icon alters the clusters, sometimes enhancing meaning (for example by echoing it in another corner of the page) or by reducing it (by opposing it in another part of the page). So, the process of adding further clusters may enhance reduction, by forcing a dead stop in balance between opposing forces of meaning.

In, for example, the piece 'No-one Makes Mugs of Us' (2021) a reader can categorise each icon and phrase into one of three categories: positive, neutral and negative, according to the emotional content of the sign they convey. These would concur in a more simplistic way with the Berlin Affective Word List (Jacobs 2015) discussed in Chapter 3. They repel or attract on this basis, arriving at a balance of opposing forces. In this visual poem, each cluster holds a phrase and an icon, both of which are signs of either positive, neutral or negative content. One sign cluster shows an icon of a bottle with the words of the title above. Another cluster shows the text 'meals get cooked on time' with the icon of a broken glass. The first cluster is word-negative and icon-neutral.

The second is word-positive and icon-negative. If clusters often repeat the same pattern of word-negative and icon-positive the overall diagram loses potency -- in literal terms the potential for meaning. Each cluster amplifies the others.



Above: *Non-one Makes Mugs of Us* (2021) Russell Evans

A mixture of combinations, however, creates more potential. If icon and text vary between categories and these categories vary in how they oppose one another within a cluster then a sort of impasse is arrived at. Signs are neither amplified nor diminished, so a truce between meanings is arrived at. But equally, the reader hovers between the clusters to varying degrees, arriving at an impasse of their own, rather than the author's. This relation between word, icon and reader is crucial and is set within post-structuralist

terms because as a critical movement it is the peak of interrogation of sign systems of word and image. It therefore provides a model to shed light on the interplay between reader and signs, and how such interplay reaches its own end-game.

4.2.2 *Are they diagrams?*

In Chapter 3 I applied the concept of the diagram to the work of Rosenberg and explored it more briefly in others in Chapter 1, so next I will explore my own work in the same way, using the same terms of reference in those chapters.

First, Eisenman describes the diagram as 'motivated' (Eisenman 1999). This lends it movement, flux or mutation and has a momentum internally. A diagram that possesses momentum is not necessarily one that has constant movement across a space or indeed any movement at all, instead it has an unstable interiority. To be more precise, a state that is in *internal* momentum is one where the parts of it cannot all be measured at the same time – and by 'measured' this means encountered. In my diagram poems it becomes impossible to cognate all clusters of signs simultaneously, so while one cluster is stalled and read, the others are not. Momentum continues in all parts except the one being encountered and since we can assume that anything not being encountered is subject to uncertainty and flux, according to the findings of Heisenberg (Hilgevoord 2016) it therefore has internal movement. To clarify the terms used here of *internal movement* and *momentum*, in post-classical physics both refer to the same thing through the concept of 'spin', which provides a useful model for the diagram as something which is in a state of movement but has no forward travel. In 'spin' this is based on an axis of rotation, which better describes the movement in a particle which moves but 'goes' nowhere. In my diagram poems, the description of them as systems

locked in a loop of interactions matches this sense of particles engaged in inner movement.

Second, as a system it conforms to Deleuze's idea of the abstract machine (Deleuze 1998), and in turn to the assemblage of DeLanda (DeLanda 2016). But the final property is one which removes a component from my diagrams, that of virtuality. As a system it is like a purpose-built factory, able to serve only one product. Built in-situ, this system is a diagram prototype but one designed for no further systems. Unlike Foucault's panopticon (Foucault 1991) -- a diagram shape that can be attached to other environments -- my diagrams are Kolmogorov complexities²⁶ that cannot be expressed in fewer signs. A transposable diagram, on the other hand, is always smaller than its environment, extracted from it and summing it up in an essential shape or form.

This idea of the single-use system is similar to the use of simile descriptions sentences in Marcel Proust's novel 'In Search of Lost Time.' Frequently in the novel the narrator halts on a small moment and examines it closely, presenting the reader with a lengthy simile that resembles it, allowing us to see layer after layer as a system emerges which is so precisely designed to attach to this one single social phenomenon as to be useless in any other. While other similes might zoom out to present a summarising image which may be applied to several situations, Proust goes in reverse, pushing us closer to the

²⁶ 'A string is considered Kolmogorov random if the length of the program encoding it is longer than the string is itself.' Montoly, A. (2020). "Randomness, Information Theory, and Kolmogorov Complexity." Retrieved 22 November, 2021, from <https://medium.com/smith-hcv/randomness-information-theory-and-kolmogorov-complexity-6471e873bcd7>.

episode he describes with a single-use simile that does not shed more light on the original scenario but rather imbues it with layers of other scenarios, as in this example:

‘Her presence in our household was the country air and the social life of a farm of fifty years ago transported into our midst by a kind of inverse journey in which the holiday destination travels towards the traveller. Like the glass cases of a local museum with their exhibits of curious handiwork, still crafted or embroidered by peasant-women in certain parts of the country, our Paris flat was decorated with Françoise’s words, inspired by a traditional local sentiment and governed by very ancient laws.’ (Proust, 2003)

Proust presents a ‘micro-narrative’ (Whittington 2017) in these forays away from the object of his attention. The diverging two-fold narratives – the root narrative of the main story and its current simile – present space between them and the reader of three-fold dimensionality: the root narrative, the simile within which the narrator drifts strays, and the meta-space created by the readers’ stepping back to see both, becoming aware of reading and ‘by bringing together two objects from different realms, exemplifies the very activity of synthesis which is that of perspective’ (Landy 2001). Proust’s choice of simile is complex and precise. He chooses one which exacerbates the gap between root narrative and simile as an ironic moment to add a particular hue – frequently disappointment and regret.

In another example from the novel, the main narrative is as follows:

‘I realized that it is not only the physical world that differs from the particular way we see it; that all reality is perhaps equally dissimilar from what we believe ourselves to be directly perceiving and which we compose with the help of ideas that do not reveal themselves but are functioning all the same...’

And which continues with a simile:

‘...just as trees, the sun and the sky would not be the way we see them if they were perceived by creatures with eyes differently constituted from our own, or with organs other than eyes, which fulfilled the same purpose and conveyed equivalents of trees and sky and sun, but not visual ones.’ (Proust 2003)

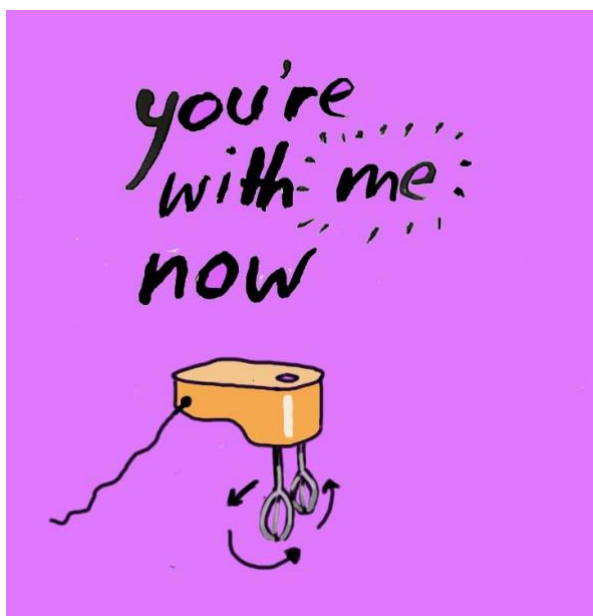
The gap between actual and virtual is widened. Proust creates just one simile, never used again, to describe just this precise phenomenon. In this respect such similes conform to the conceptual diagram of a self-contained map of internal forces. Differing to Foucault's diagram, however, it does not permit re-use. Proust's novel has had a long impact on my visual creative work due to this use of precision similes.

4.2.3 Headless diagrams

Foucault defined the diagram as something that was the product of two factors: the *statement* and the *discursive* (Foucault 1991). The *statement* is the real and actual manifestation of the diagram, such as the building, the poem, the text, artwork, and so on. The *discursive* is the code which gave rise to that physical manifestation, such as the penal code which gave rise to the architectural design of a prison in Foucault's example. From here several theorists derive the diagram as being the 'mysterious' other that arises in between, as Deleuze refers to Kant (Deleuze 1988) or the 'gap' between the visible and the articulable (the image and the text, respectively). This line of thought seeks a unifying presence for the diagram in which the diagram is the summary or the essence of that which is written or drawn or built. It suggests a tendency in diagram theory to err towards homogeneity and harmony, with the rhizome being the most self-contained harmonious form, self-perpetuating and hermetic.

However, in my own work I approach the concept altogether differently, but with an awareness of the topography exposed by these theories. My approach bears more similarity with Lyotard's 'rift' between the textual and the visual (Zbedik 2012) whereby the same dyad of visual and articulable (image and text) is present but where the conceptual diagram that is sought by the above theorists is prevented from escaping

and becoming separate. My diagram poem cannot find stability in any emanating diagram or harmonising essence of it, and instead sits in permanent operation mode, like a system that has erroneous code and repeats a search for its own resolution. In practical terms this is achieved by careful balancing of icon and word, and by avoidance of metaphor. Though any short statement can be read as metaphor I constrain the frame of possibility by scaling back the phrases so they may not assume a larger metaphorical potential. However, it is accepted that many readers see poetry as predominantly metaphor so the icon can further undercut the metaphorical term by destabilising it.



Left: Detail from 'You're With Me Now' Russell Evans

So, Foucault and Deleuze say that the diagram is what emerges in between, a distilled concept that can break free whatever it inhabits and take form elsewhere. I avoid this, seeking to contain the space that the diagram usually takes up by deliberately aiming for signs that are less susceptible to metaphor appropriation and destabilising any two clear signs by undermining one another (or, as I would hope, deepening one another).

Instead of the diagram as a reconciling force, I present my work as a quanta of information, not replicable, nor moveable to other settings.

If Rosenberg's poems are flightless diagrams, constrained of enaction but possessing all the properties to enable flight, then mine are headless diagrams. This means they possess the limbs of a diagram of the real and discursive, but they then constrain a summarising force from growing out of it. Mine are an alternative to the free-floating diagram, instead containing meaning within a looping system dependent on mutual configuration or destruction between word and image. Inner dynamism replaces forward movement. It has no blueprint to offer any other phenomenon and therefore no use for a controlling or summarising 'head' to provide direction. But in itself it remains possessed by the elements of schema and interaction that the conceptual diagram propels.

Further, the information it contains remains unstable enough that any such essentialising blueprint form is continually revised and remade through reading and viewing. In this way, the reader causes ripples of disturbance in the diagram as they engage with it.

4.3 Visual poems as systems

4.3.1 Modes of thought

I offer next a more detailed exploration of how my diagram poems are presented as *systems*. In diagram theory the closest concept is the *rhizome*, a closed and self-perpetuating organism arising from botany. Rhizomes imply contained self-

determination, while a system on the other hand implies a blind machine, but one which is therefore open to further enaction by the reader.

The definition of 'system' in this instance is similar to that seen in an early encyclopaedic plate, which seeks to be a classification of things. In encyclopaedic plates of the 19th century and in earlier alchemic plates, the image was a way of ordering, classifying, sorting, but always with an intention to present something larger than itself as a grand summary (Fabricius 1976). Hidden to their authors at the time but more obvious now, these plates are like small machines operated by the darting eye of the reader, assembling icons and words in pursuit of a larger whole. What is elusive is what that larger whole is meant to be, but what is always clear is that these are pictures of the mind of the author, a glimpse of the system seeking to classify. Law (Law 2019) also suggests that the diagram should be viewed as a window into a mode of thought. In Barthes too, 'the image is a kind of rational synopsis: it illustrates ... the very mind which conceives' (Barthes 1980).

Taking this further, my diagrams can be viewed as systems which are traces of a mode of thought, in other words, not presented as a complete and cohesive thought pattern which one can peer into but rather a type of thinking or pattern of thought which is actively attempting to classify things. However, like a game of pick-up-sticks, the reader encounters each part of the diagram poem but cannot hold them all simultaneously, mirroring the action of the author. Classifying becomes fraught with competing layers of information. Dropping them, the reader encounters and enacts the precise process I encounter – that of forgetting, remembering, processing, and ultimately trying to classify experiences in a permanent loop. This is the subject matter of the diagram

poems, more so than the surface references they present. As an important member of the loose community of visual poets, Bianca Stone has insights in to my work, and says that in each one, ‘... there’s something that the speaker is trying to figure out in this.’ (comments to Russell Evans Aug 2021, see Appendix).

Within this system there are forces, mirrored by Deleuze’s definition of the diagram as ‘map of forces,’ (Deleuze 1998) and are present in two forms: external and internal. Internal forces are indicative of inner momentum, as in physics these include tension, compression, magnetism, shearing or bending. Transposed to a diagram poem these forces can refer to the collision, collusion, repulsion and attraction of signs of words and icons. Together they create forces internally, provoking internal instability and therefore momentum.

4.3.2 Modes of classification

These forces lead to a perpetually moving system within the diagram poem. Delving a little deeper, there are three levels at work in this system: first, the content being classified; second the form of classification; and third, as briefly mentioned above, the mind doing the classifying.

- In the first, the content is the most visible element. It is apparent in readable and visually recognisable props and words, framed with comic iconography and devices. Though the overall meaning of the diagram poem might be elliptical, the contents that make up the separate signs are more clear.
- In the second level, the form of classification refers to the driving apparatus at work, such as linked text passages, frames to group elements, asides presented as lower-level information, speech bubbles, or box-frames with added

information. A dominant device in this apparatus is 'subordinate information', of classifying one cluster of information as subordinate to another. The most explicit use of this is in simple mathematical symbols such as the square root, or in brackets where a group of signs is presented as being subservient to another sign. These system 'cogs' make use of our shared understanding of icons such as arrows, brackets and boundaries to subject one element to another. In this way, a kind of structuring device similar to linguistic Background Features (Jacobs 2015) is used to carry the content in the first level above. Or, to think of it another way, level 1 is a train and this level is a train track.

- Finally, the third level is least visible on the surface and refers to the maker of the classification system. Foucault notes how classifying systems are 'process of filtering observations through a structuring process and organizing them into a system,' (Foucault 2002) so that structuring process is formed through complex cultural values and other diagrams. Other structuring devices inform this one – comics, hand-made signs, and emoji language.

Given this is a critical reflection on my work, I will now look more closely at the nature of level 3, that is, the method used by the 'speaker who is trying to figure out,' as Stone referred.

The method takes two forms, or at least can be read in two ways: ontological and epistemological, which was described in Chapter 2. In other words, the first where the diagram enacts processes 'live' with the reader, and in the second where it instead simply records it analogously. From an ontological view the diagram poem is revealing and enacting the process of seeking to classify in a blind loop. It is to a certain extent

'live' as a process that invites the reader to entangle themselves with the classification system. It would not present a knowledge record of the content of the poem, but is instead an encounter with it, a test drive for the reader to experience some of what is being displayed.

On the other hand, it may be read as an epistemological laying out of information. In this way it would offer a flatter, less embodied diagram which provides clues for the reader to assemble. Reading it in this way, however, would lead to a dead end since there is no final meaning to be had so the reader would be led in circles but with no accumulating gain in final meaning, therefore slowly becoming part of the live embodied diagram as it propels itself mindlessly on.

I suggest that it cannot be both ontological and epistemological at the same time since one cancels out the other: to take it as a reflection of knowledge means stalling the system and taking a snapshot of it. On the other hand, to lend it an ontological present means it is presenting itself and therefore cannot represent anything except itself. Foucaultian Conceptual Diagrams must always be smaller than the thing they are abstracted from, as they exist as an essence or motivating interiority of that outward shape, so the conclusion must be that each of my diagram poems are conceptual diagrams for one purpose only, for one environment and one manifestation. It is no longer representative of anything other than itself, presenting the reader with a struggle to reconcile the many and multiple conflicting pieces of language that resist summary. I am drawing out the properties of a diagram but in mine these cannot be extrapolated into other situations or phenomena.

4.3.3 *Gestalt episodes*

The above looks solely at the diagrams as hermetic machines, locked in a process of attempting to classify something. But as physical artefacts seen by readers they have an exteriority too, which this next section examines in the form of what could be called 'gestalt episodes.'

Within the diagram poems there are clusters of signs. They provoke cognition, and I try to avoid elliptical signage as far as possible, enabling faster reading of individual words and icons. These gestalt episodes are clusters of sensory and cognitive provocations that lead to a moment of meaning-making for the reader. Sensory information is not as one might assume an image or colour, but rather the linguistic embodiment contained in words or icons as discussed by Borkent (Borkent 2010) and Lakoff (Lakoff 2003). They describe word building in childhood as being formed from our understanding of the world through physical bodily encounter – literally bumping into objects, going up, going down, finding an object heavy and so on. The theory holds that we accrue concepts of the world from these physical encounters and from these simple blocks of experience we group words to cognate more complex experiences. Lakoff refers to these building blocks of concrete experience as 'cogs'. Borkent later refers to the 'mind-body syncretism most prevalently found in cognitive linguistic and psycholinguistic research, which shows that our bodily experiences motivate conceptualization and are, therefore, expressed in all of our meaning systems.' Language, they suggest, is formed out of physical sensory experience.

In practical terms, this manifests itself in my diagram poems in the following ways. Icons representing physical forces and onomatopoeia of sound effects of forces present a 'live'

enaction of a force, rather than offering it second-hand as a read-only sign. Images of sharp edges, weights, falling, floating, wet, dry, breaking and so on will all match with embodied concepts that we use to inform words. When clustered with words these cause sign dissonance. As an example, (see image below: *Gifts Arrive At Any Time*, 2021) a cluster of nails alongside the words 'gifts arrive at any time' colours the cognitively read 'gift' with a sensory embodiment at odds with the sign.



Above: *Gifts Arrive At Any Time*, (2021) Russell Evans

A different presentation of the gestalt episode in my work is seen in Foucault (1983), regarding Magritte's drawing *This is Not a Pipe*, (1948). Foucault names it a calligram, where both words and image are blended in a 'double cipher' bringing 'text and image as close together as possible'. One interrogates the other and provokes sensation. Elsewhere, onomatopoeia presents another example in my work of embodiment in language, where words are presented as vocalisations of sounds, discussed later in more

detail in this chapter as a crossover between icon and word rooted in forces such as a collision, crash, fall, punch and so on.

Gestalt episodes can be read as the central building block of the diagram poems, with the internal forces described above operating primarily within each cluster and also between each cluster.

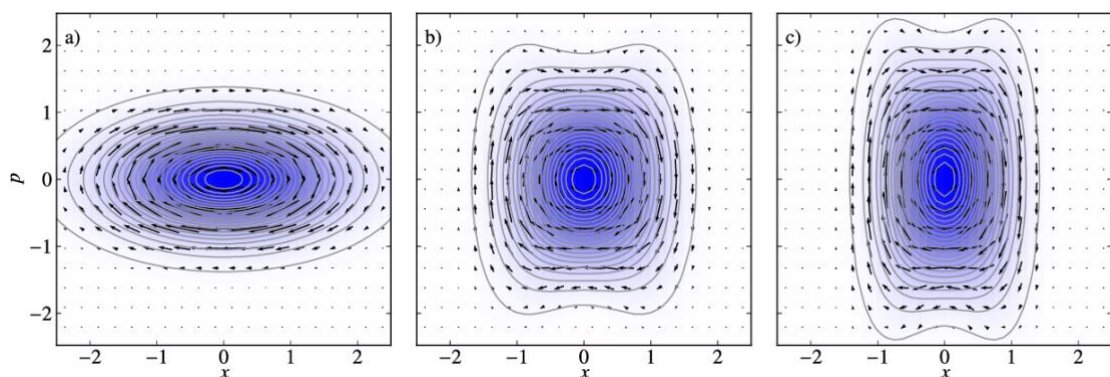
4.3.4 Wave oscillation

Moving away from such a close-up examination I look next at the summation of meaning in the poems. This is where they cross paths with Rosenberg's diagram poems. I showed how meaning in his work was not to be found necessarily in the individual words but in the process of the entire machine he would have us operate. The randomness of it was the meaning of it. My diagram poems can be read in both ways, as signs to be cognated (embodied or not) or as a whole where the reader takes part in the process of the machine or system. So, as with Rosenberg, summation in my poems is less to do with a literary meaning and more to do with a scope of meanings or -- as I describe here -- a wave. Where they differ is that I impose signs which collectively also point to meanings.

This wave includes all possible eventualities in the diagram, or to be precise the various ways of trying and failing to assemble gestalt episodes. The generation of this wave grows from reader interaction and in this sense the author soon becomes just another reader, entering the system as soon as the diagram is completed. Within the wave are meanings, embodied responses and simplified cognitive responses. The edges of this wave must peter out at some point so to determine this frontier is to determine the

breadth of meaning in the diagram. To locate this it is useful to look again at quantum physics.

In post-classical physics it is impossible to know where a particle is. After Heisenberg²⁷ the concept of assembling possibilities of position is known as a *wavefunction* represented by the symbol Ψ . The wavefunction is never static but will possess a central part that is present throughout a time window, while parts further to the edge of the wave are less frequent. In the diagram below three states of wave oscillation are seen but in each the central areas remain broadly in sync; in a diagram poem these would correspond to the sensory provocations most often reported by readers. An icon such as a skull, for example, would have general agreement of references to death. Other icons may be more oblique. Most icons or words in isolation will possess a narrow wave oscillation, but once joined with others, either word+word or icon+icon or combinations of both, the wave oscillation is affected and becomes broader. I hope to create a fluctuating, highly unstable wave, to create signs which stay close to natural understanding in isolation but which push one another to instability.



²⁷ Heisenberg's Uncertainty Principle, 1927, which stated that the more precisely the position of a particle is known the less precisely its movement (momentum) can be known and vice versa. One can never know its movement and position at the same time, hence the need for a wave to indicate possibilities of position.

Above: wavefunctions showing potential positions of particles. This corresponds to meanings applied to text.

This concept of breadth of meaning might suggest that broader waves would hold higher value because they represent a greater potential of meanings. But as seen in chapter 3 this needs careful curating since a broader wave loses the attention of the reader as it recedes into randomness (as did Rosenberg's), while narrower ones risk pinning down meaning too tightly, at the expense of interpretation and co-operation with the reader.

4.4 Material and process

4.4.1 Line and colour

My diagram poems are produced using a sequence of methods. They begin as drawings on paper as whole diagrams sketched out. The whole system is mapped out at once so the components and the way one interacts with another are seen together. These may then be drawn more accurately on larger sheets. The paper I use has a smooth, coated surface which allows the line to be drawn with a minimum of texture. The lines are smooth, with a clear edge and in high contrast as seen in the *ligne claire* style popularised in comic strips in Europe in the mid-twentieth century (Pleban 2006). *Ligne claire* itself arose from the shin-hanga style of clear line woodcuts arriving in Europe on the wave of Japonisme in the early twentieth century.



Examples of *ligne claire*:
 Above: frame from 'The Seven Crystal Balls' (1948), Hergé (1907 – 83)
 Right: *Rainy Night at Shinobazu Pond* (1938), Shiro Kasamatsu (1898-1991)

I use black Indian Ink with a brush for both icons and text in many diagrams. The use of the same material and application for both word and image encourages the reader to see similarities between the production of both and thereby see the icon partly as a written element and the word partly as a drawn element. This may accelerate the cognition process and lower divisions between both icon and word, or provide a crossover point between them as Rinaldo (Rinaldo 2018) sees in Cy Twombly's half-writing marks '...that suggest both text and image without always neatly resolving into either.' Lettering needs to be handled more carefully to allow complete legibility so drawing pens are used rather than brush. Drawing and writing the components together enables them to be read more closely, which paradoxically allows both to be seen as juxtaposed since their signification is more evidently at odds if visual barriers in how they are made are reduced. This allows the gap between word and image to become apparent.

As referred to earlier, in *The Treachery of Images (This is Not a Pipe)*, Magritte was exploring this gap between word and image. He, ‘discovered the innate incompatibility between the word and the image.’ (Baranova 2015). Foucault also refers to this gap, ‘which prevents us from being both the reader and the viewer at the same time...’ (Foucault, 1983, 36) in Magritte. Addressing this gaps mean bringing closer the material that creates both icon and word, and using lines for writing that echo the line of drawing. To see this effect more dynamically one needs to look again at the drawing that of the same name from 1948, where the same mark-making creates word and image.



Above left: *The Treachery of Images (This is Not a Pipe)*, René Magritte, 1929. Above right: *This is Not a Pipe*, René Magritte, 1948.

In my diagram poems the simple clear line is a crucial tool, providing a material link between word and icon. It has antecedents too, again seen in diagrams seen in 19th century encyclopaedic plates. Referring to such plates, Foucault held the black line as being essential for the diagram: ‘The area of visibility ... is thus only what is left after these exclusions: a visibility freed from all other sensory burdens and restricted, moreover, to black and white’ (Foucault 2002). For Zbedik (2012), referring to Deleuze’s

diagram, 'The feature shared by the text and image is the black line on a white surface. We can see how the simple, sober line is instrumental to classifying knowledge.'

Other antecedents can be found in Paul Klee's Notebooks. Klee worked with drawing and writing throughout his career, first considering working exclusively in poetry before veering close to comics but always aware of the schism between text and art. 'Only what was forbidden pleased me. Drawing and writing' (Klee 1953). Exploring the duality of text and image Klee looked further back before the age of encyclopaedic plates when he wrote, 'At the dawn of civilization, when writing and drawing were the same thing, [the line] was the basic element.' Writing about Klee and his use of text, Cernuschi (Cernuschi 2012) echoed this: '...in ancient Greek, Mayan, and Old English, the words for writing and painting are one and the same.'

Moving on from the importance of the black line, the next stage of developing the diagram poems is to use digital means to add colour and correct areas. Using a digital graphics tablet and pen I again use hand drawing to add colour to the black and white images. This allows a more spontaneous use of colour and enables me to use colour to foreground certain clusters, or push others further back. Corrections are almost always to enhance the hand-drawn writing to improve legibility, re-inking them in black or removing ink debris that may impede reading word or image.

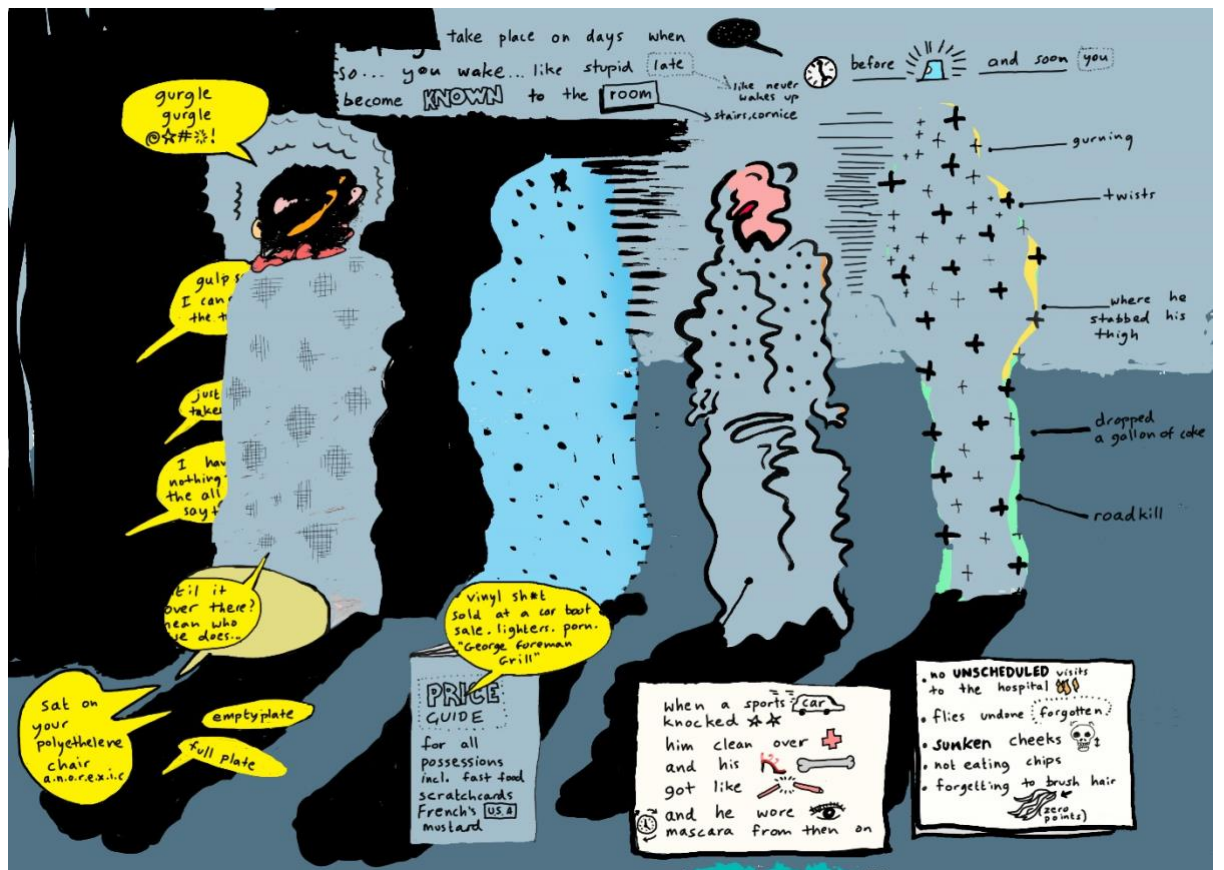
4.5 Close reading

4.5.1 Poetry comics

I will next look closely at examples of work that present different aspects of process, subject matter and signs. All the works were produced in 2021, using the methods described above. They are not examined chronologically in the order they were produced, nor in hierarchy of what I would suggest are the most successful pieces, but instead are explored in terms of themes that link or group them. The aim will be to show themes or processes that run through them as a body of work.

In *To the Former Also* (2021) (see following page) four figure shapes are depicted in metallic blue grey, surrounded with yellow partial speech bubbles on the left, and text frames to the lower right. Each of the four figures are represented with partial outlines or no outline, two depicted using dots or crosses to suggest solid form in a space. Negative space colouring of darker blue or black also outlines the figures. The content is primarily about the process of configuration, of classifying and sorting, but ultimately being unable to reach a stable point where all signs point to one outcome. There is no fixed message that arises from it, instead a range of episodes which pull in the same direction in terms of references and the use of the second person 'you' and 'him.'

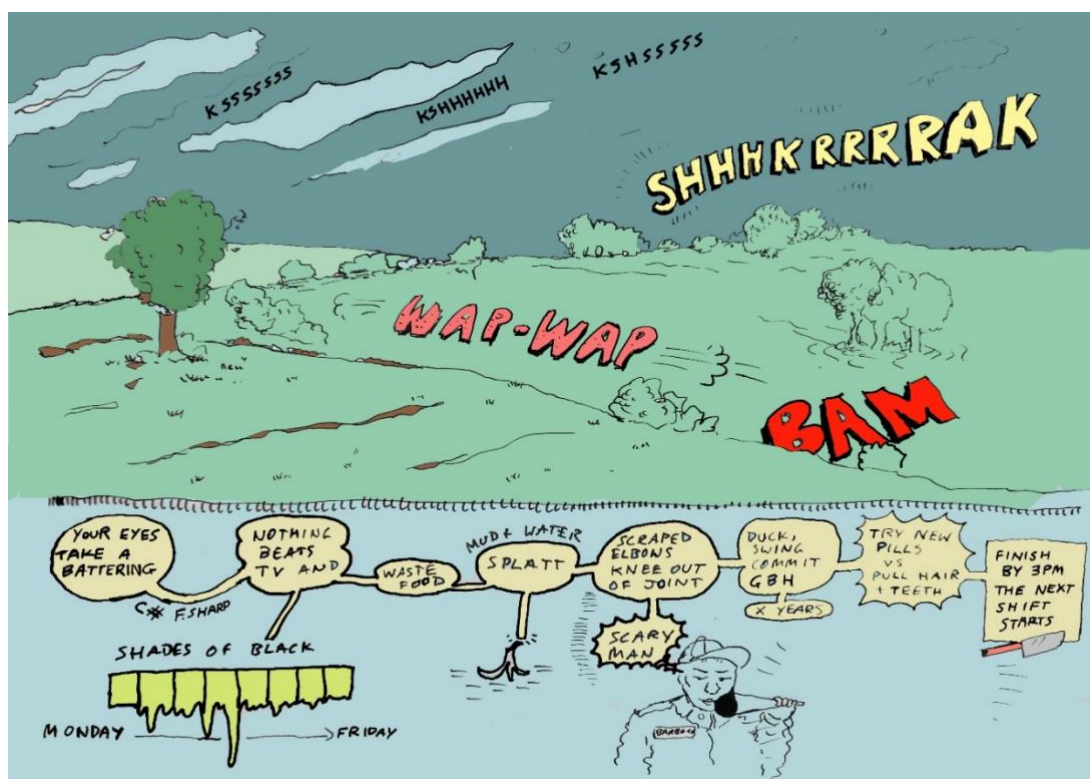
Speech bubbles are obscured with only some words available. Two white text frames offer specific episodes, again relating to the 'him' elsewhere in the image. The first frame describes a car accident, an image and text referring to broken bones, and to gender uncertainty. The second box lists five descriptions relating to the male subject -- alarms of an apparent degenerating condition.



Above: *To the Former Also* (2021) Russell Evans

The text frames, speech bubbles and floating text are arranged around the main four figures. The figures remain insubstantial with the second and fourth from the left suggesting a form composed of air rather than flesh, forms which arise from thoughts of my deceased brothers, who died from the effects of heroin and alcohol. My diagram poem *'Two Visits By Dead Brothers'* depicts a similar outline figure, again with an insubstantial ghost-like interior consisting of numbers. The figures have become represented only by emblem, not body -- by other signs than themselves. If all my diagram poems are systems, I would describe this system as characterised by disbelief, where matter is made to disappear by the effects of death. The system works without resolution to understand and even to reconfigure -- or re-conjure -- the missing.

In other works I use the sonic properties of words in onomatopoeia – a mainstay of comics to describe sound effects which offers a different kind of collusion between word and image. The text used to write the sound effect requires it borrow from visual art to enhance its properties, with tilting, squashed letters, overlapping, and scale to enhance its aural effect. In studies of onomatopoeia, this kind of sound-word is ‘kinaesthetic,’ expressing the internal state of the word and its imitative vocal sound (Kortvelyessy 2020). Such sound words act as a bridge between word and image signs, becoming partly iconographic since they lose what Saussure calls ‘arbitrariness’ (Saussure 1998), instead

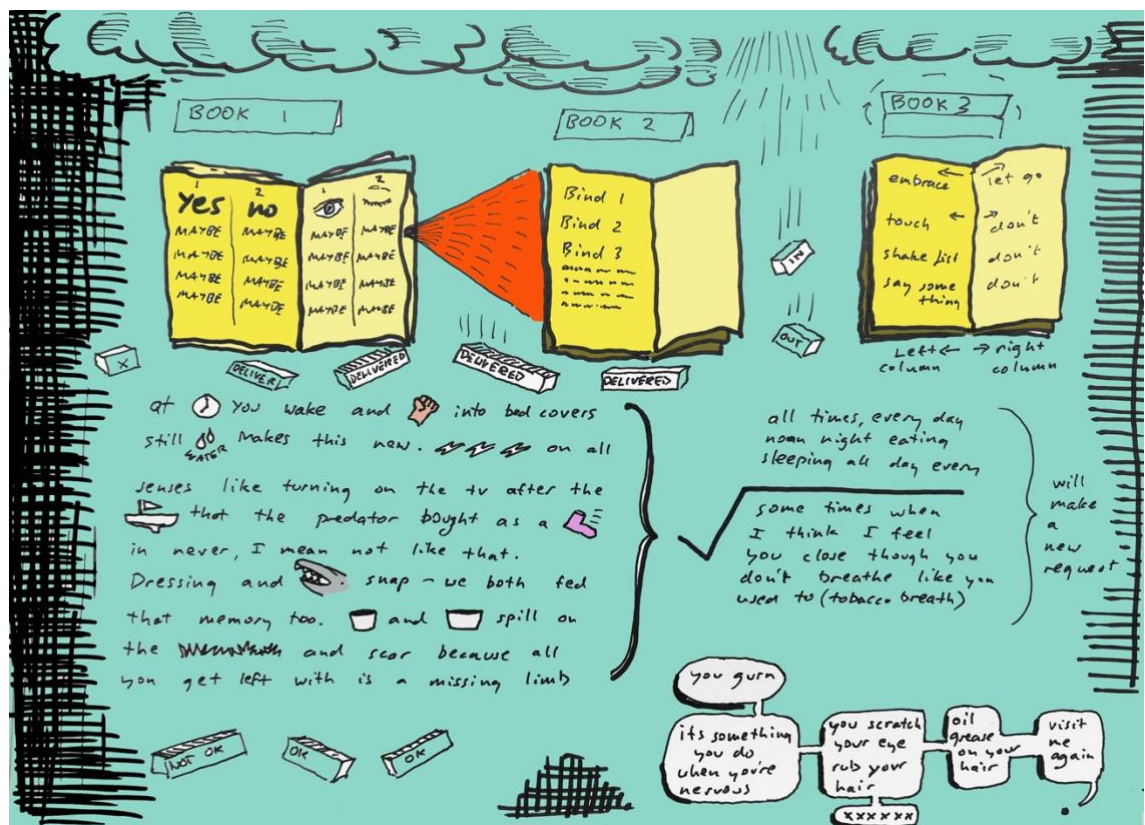


Above: ‘Shraak’ by Russell Evans
 Left: detail from *Wump Wump*, by Russell Evans
 Right: detail from *Fizz TV*, by Russell Evans



forming a connection between form and meaning based on likeness. Thus, ‘...while onomatopoeia is iconic by imitating sounds of extra-linguistic reality, it is not a pure icon. Instead, each onomatopoeic word is a combination of the underlying sound-imitation principle and a symbolic layer’ (Kortvelyessy 2020).

In *Delivered* (below), an icon of an open book appears which recurs elsewhere in other images. In this icon, books are opened to be read but cannot be understood, while their presence as books compels them to be read.



Above: *Delivered* (2021) Russell Evans

The subject again deals with classifying, where the subject being classified is death. The left lower section contains a portion of text interspersed with emoji-like icons, or simple one-meaning signs. Some will offer shared understanding such as the shark, clock or fist.

Others are more opaque such as toy boat and grass so require further unravelling. It may be useful in this example to provide some background to these icons. The boat is one of many icons of objects that record the trauma of childhood sexual exploitation which by its nature presents an ongoing re-traumatising and re-living unless and until it can be classified and categorised. Classifying the unclassifiable is clearly impossible, hence the endless interior system of clusters of gestalt episodes, colliding one against another, extracting another, combining several, all in the knowledge that to do so is to maintain agency in the face of the numbing and somnolent effect of trauma.

4.5.2 Trauma poetry?

Trauma itself has given rise to a poetry sub-genre which crosses over from literature to therapeutic psychology, meeting Instagram poetry in the middle. Often characterised as a way of processing traumatic events it has been applied with the aim that 'creative engagement can facilitate improved wellbeing' (Bullock 2021). Predominantly, such poetry will 'encourage the development of metaphor' (Bullock 2021) as a processing tool; or 'communicate our unprecedented experiences' (Clague 2019); or can be a 'place of safety' (Bracegirdle 2011) from traumatic events, aiding a therapeutic process. But trauma poetry has encountered criticism for creating a wall which allows an opt-out of literary scrutiny, and 'prevent critique of texts', or worse aiding a 'commodification of traumatic events' (Giovanni 2017)). So, given the content in my diagram poems the question of trauma poetry in relation to my work needs to be addressed briefly.

I see my own work as being much more than the self-contained silo that is trauma poetry. I would challenge trauma poetry for its theatricality, for underlining traumatic events with drama and in so doing paradoxically making them less real, more *dramatized*.

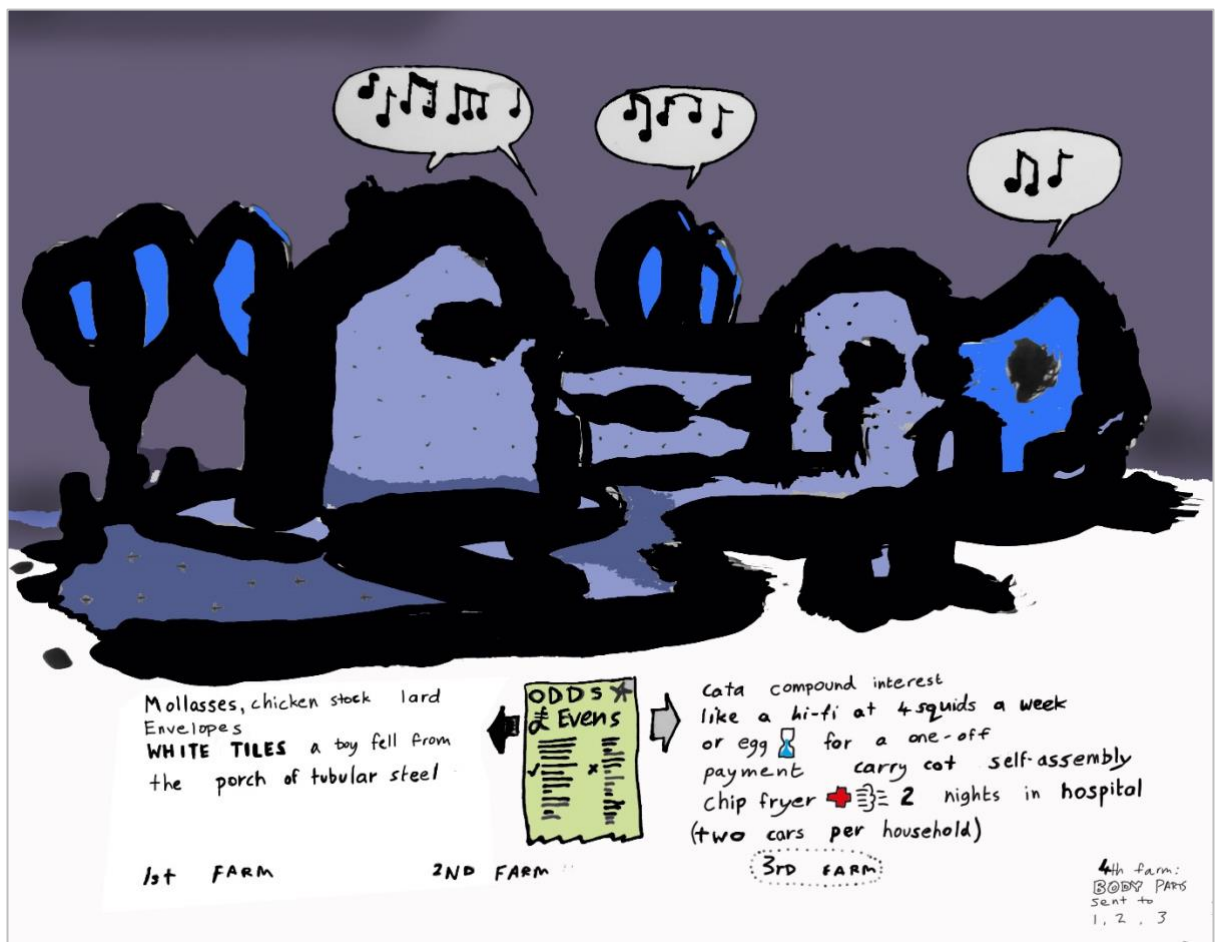
Trauma poetry is insular in that it seeks to communicate between the traumatised, the trauma and the reader. It uses metaphor to translate trauma into acceptable imagery, often with the whitewash of a triumphant declaration of empowerment as its end. In this way it falls into a trope which it extracts from modern medicine in which a cure consisting of an uprooting and excision during therapy removes the traumatic event and cures the subject. One does not live with it, one occludes it. The system at play in my diagram poems, however, has no end point, will not process or change the past, nor will it excise events. It does not mediate between event and reader. It consists of signs that cannot be reduced further, that are in a sense prime number icons, so they resist any attempt to reduce further and extract an inner truth or essential meaning from them. In turn, they stop short of offering metaphor, the device most often used in trauma or self-help poetry (Paquet 2019) to connect one person's experience to another.

The diagram poems here do not rest on trauma for their content, but instead use trauma as a step on which to stand and peer into the condition of living where endurance is normality and where the annihilation of the self (Eigen 2006) has succeeded to an extent that suffering is no longer traumatic. Finally, trauma itself is an anti-literary, flattening experience which eludes capture as a story of hope, triumph or escape. It revolves in its own system unable to process information in any direction and reach a stationary moment of resolution.

4.5.3 Humour and irony

This gives rise to the next element in my diagram poems, which is more prevalent than trauma – humour. Humour inveigles itself into the flat plane of trauma, bringing mockery, wilful amnesia, repetition and irony, all of which drain it of stolidity and

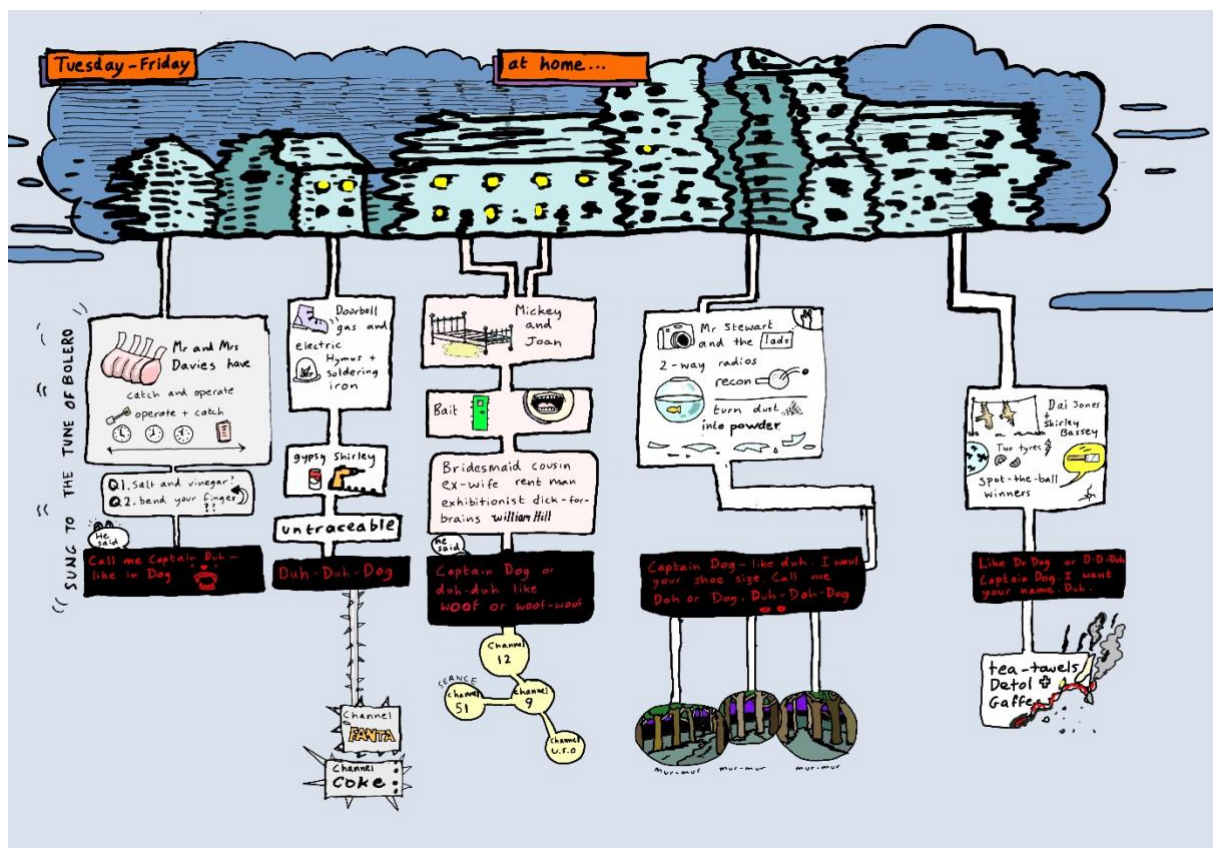
reinvigorate it with contradiction. In my work, the vocabulary of comics is the main practical device to leaven the tragedy, partly by irreverence and rejecting the weightiness of grief, partly by the mocking simplicity of emoji-style icons, reducing objects and signs to *ligne claire*, deposited with colours that further reject the tragic, in modest tones and flat application that lower the emotional temperature and diffuse the grip it has over its subjects. At the moment of trauma, humour takes hold. As the comedian Bill Hicks joked, 'It's always funny until someone gets hurt. Then it's hilarious.' (Hicks 2004). Humour does not take away from tragedy but is a component of it.



Above: *Odds and Evens* (2021), Russell Evans

Trauma and humour are apparent also in *Odds and Evens* (2021), but in this image the process of reading is pushed further away, with the text seeming to present ephemeral domestic information. The main image dominates the text, a thickly-inked representation of houses with musical speech bubbles emanating from them. In smaller text, horrific images are hinted at mixed with banal recounting of domestic details, a reference to the notorious disappearance and later murder of a friend when I was a child, and the death of her brother at the hands of their father. This gap between horror and the banal reveals a space where humour can thrive, simply by posing the latter against the former.

Where *Odds and Evens* is tilted toward image, *Bolero* (2021) is an example of the diagram poem as system.



Above: *Bolero* (2021) Russell Evans

In five frames, connected to a distorted image of a housing estate, details are presented of residents of the estate, each involved or subject to crimes and violations. Reaching further beneath each section are repeated mentions of a dog, as captain or doctor, alluding to other violations. Icons placed next to names affect the reading of the otherwise neutral, unknown names by using an image of a boot, urine under a bed, teeth, a drill, a bone of meat. There is no escape from the turbulence of signs, as none offer any respite or solution. The tune of *Bolero* (Ravel) is suggested to the left, bracketing the frames, as a circling motif of notes that can proceed in a loop without end. The overall system is trying to perform, to classify and operate function rather than dysfunction, in an attempt to assemble or locate causes to the various effects.

Fast Faster Fastest (2021) takes this system further, pursuing a narrower wavefunction that focuses on disclosing something. A series of icons in a line at the top of the image reject informing the persons named, with visual cues of a crucifix, blue lights, lightning, money and fire. A disjointed story is unravelled in the large white speech bubble, with text and icon emojis, with more persons to tell or disclose to: the council, a gypsy visitor who sells lavender and another reference to a scam clairvoyant. A leading speech bubble frame suggests telling still more persons – a ‘simpleton,’ a ‘bird,’ a ‘TV show.’ Options diminish as the mind of the diagram’s classifier rotates around the clues and cues, gaining only intensity rather than clarity. The operation fails to stop, only resting in submerged, watery icons at the foot of the page with the half-hidden sign of ‘undress.’ Muted pastel colours restrain the emotional pitch. The irreverent handling of the icons and text, exaggerated and simplistic, suggest that the classifying machine we are

witnessing is not going to succeed. Humour is present in many of the diagram poems, and requires further unravelling next.

4.5.4 *classifying dark humour*

Dark humour²⁸ as a literary concept has several layers to it which can aid understanding of these works. Andre Breton's *Anthology of Black Humour* (Breton 1997) presented dark humour as a 'superior revolt of the mind,' exemplified in his quote of Freud's condemned man led to the gallows who observes, 'What a way to start the week!' '[I]t is a mode of thought that aims at saving itself the expenditure of feeling required by pain,' (O'Neill 1983)

O'Neill sees it as a:

'subversive ... aggressive weapon.. and in most cases having subject matter normally considered to be taboo.' ...[B]lack humour anthologist Gerd Henniger follows Freud, seeing 'black humour as a defence against horror, or 'das Grauen,' and accounts for its psychological causes and effects in terms of the comic simultaneity of continued repression and playful revelation...'

The Freud which Henniger defers to suggests that this push and pull from forgetting to disclosing and back again leads to guilt and pleasure. O'Neill leads us away from Freud by suggesting that subject matter alone is a less than fulfilling way to understand dark humour. It is instead, or as well as, a process to include other emotions, and arguably has a longer history as such than as its current incarnation in satire and stand-up comedy, as he points out in Twain, Byron and Nietzsche.²⁹ Dark humour today, by basing itself solely on subject matter (Baldick 2001) looks only at tragic, distressing or morbid topics and does so to induce laughter at them.

²⁸ The term 'dark humour' is here used as formerly 'black humour.'

²⁹ Twain: 'The secret source of humour is not joy but sorrow.' *Following The Equator* (1897); Byron: 'And if I laugh at any mortal thing, 'Tis that I may not weep.' *Don Juan* (1819-24)

4.5.5 Situational irony

It is O’Niell’s earlier definition that fits more closely with my work, of black humour as a processing strategy aimed at any subject, using absurdity, surrealism and irony. It is ‘the humour of lost norms, lost confidence, the humour of disorientation, (O’Niell 1983). Simple ‘gallows humour’ is restricted in its subject matter – it laughs only at the ‘gallows’ but dark humour in O’Niell’s terms spreads far wider. In my own work, this triad of devices are used in this way:

- *absurdity* at the process itself, the comic devices resorted to, the ridicule of a subject by comic drawing, and at the misconception that it is at all possible to arrive at understanding.
- *Surrealism* in a classic sense of disembodied objects displaced and appropriated in floating space, such as a set of teeth, a twisting building, or the collision in a Magrittian way of word and icon where one opposes the other
- *Irony* as a bridging device.

Irony reveals the most in my diagram poems. Once viewed through the lens of this device, they start to assume a subject matter that links them across the whole body of work. In a sense, the micro-meanings of each diagram poem are the specific references contained within while the macro-meaning across the entire work is irony. Irony is also seen as a way of viewing life, assembling the world in terms of disappointment. It reveals the gap,

‘between the real and the ideal, between what is and what ought to be. Sometimes we state what ought to be done, and pretend to believe that this is just what is actually being done; then we have IRONY. Humour, thus denned, is the counterpart of irony. Both are forms of satire, but irony is oratorical in its nature...’ (Bergson 1900)

In my visual poems, irony is oratorical and therein opens up a possibility for hope or redemption, since oratory seeks to change, influence or alter the state of something. Simply pointing out the gap between the real and the ideal it leads to questions of both where they came from and why they are unbridgeable in this instance. In an analogy of being short-changed in a transaction, it counts the pounds and pence that were cheated. Rather than be reimbursed, it seeks humour as compensation, a way of re-asserting control over what was and what could have been. It oscillates between knowing the unobtainable ideal and exclaiming the unacceptable real.

4.6 Conclusion

Reflecting on creative work is an incomplete task. Any attempt to encircle a body of creative work with precise definitions of how it works will come unstuck at some point because, contrary to Rosenberg, it will go where the reader wants. But reflecting on a body of work is more successful if one accepts that it is a moving target and is best understood by understanding its momentum, the forces that gave rise to it and the trajectory it takes.

My diagram poems retain their identity as conceptual diagrams by assuming the role of a system, using images and words to create momentum within. The component that most gives them diagram status, however, is the concept of the assemblage, DeLanda's more motivated sense of the diagram which presents it as a virtuality that is not replicated and contains time as well as space as its properties. The diagram poems are

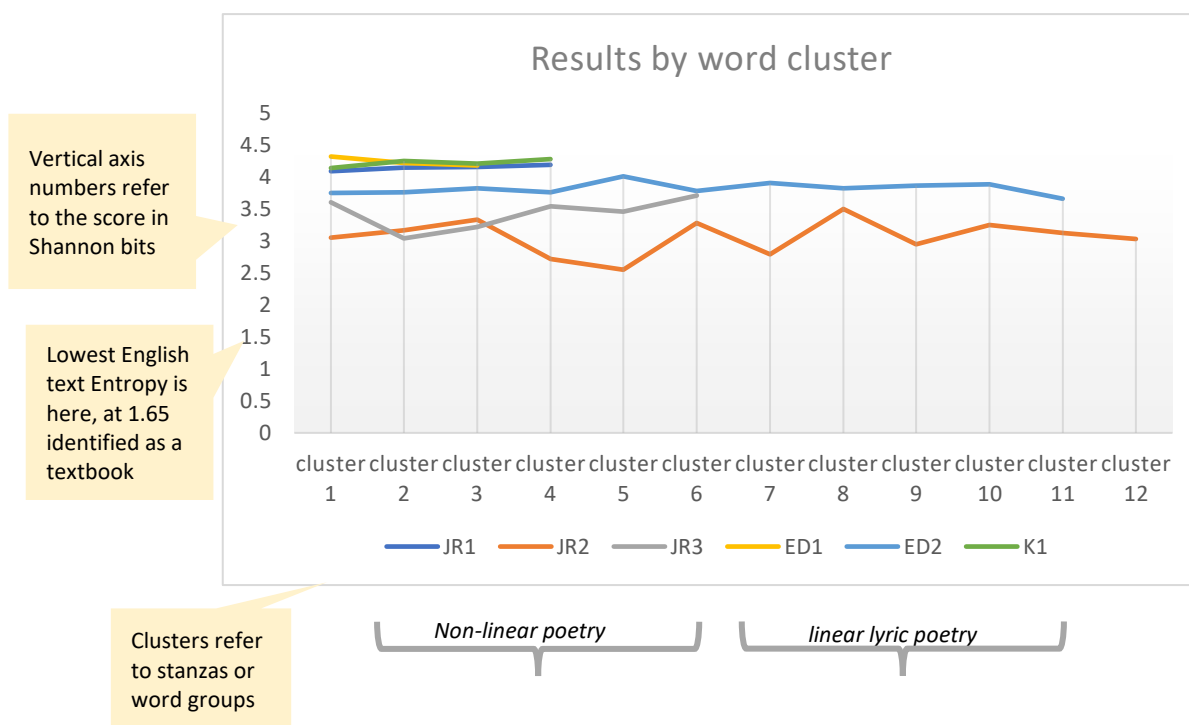
systems that point inward by incompletely processing and classifying, using humour to create a more three-dimensional tragedy. Outwardly they use the vocabulary of poetry comics to create diagrams which seek to disturb by opening up a gap between what is and what could be. In so doing they turn from personal intrusions into external and universally shared experiences – that of the irreconcilability of experience with the self.

Appendix

Appendix 1: test results of text entropy from Chapter 3

The following shows results of Shannon Text Entropy testing on selected texts:

1. Results by cluster



*Results presented cluster by cluster not cumulative

Key:

JR1 = The Winding Interval

JR2 = Diagram 4.1

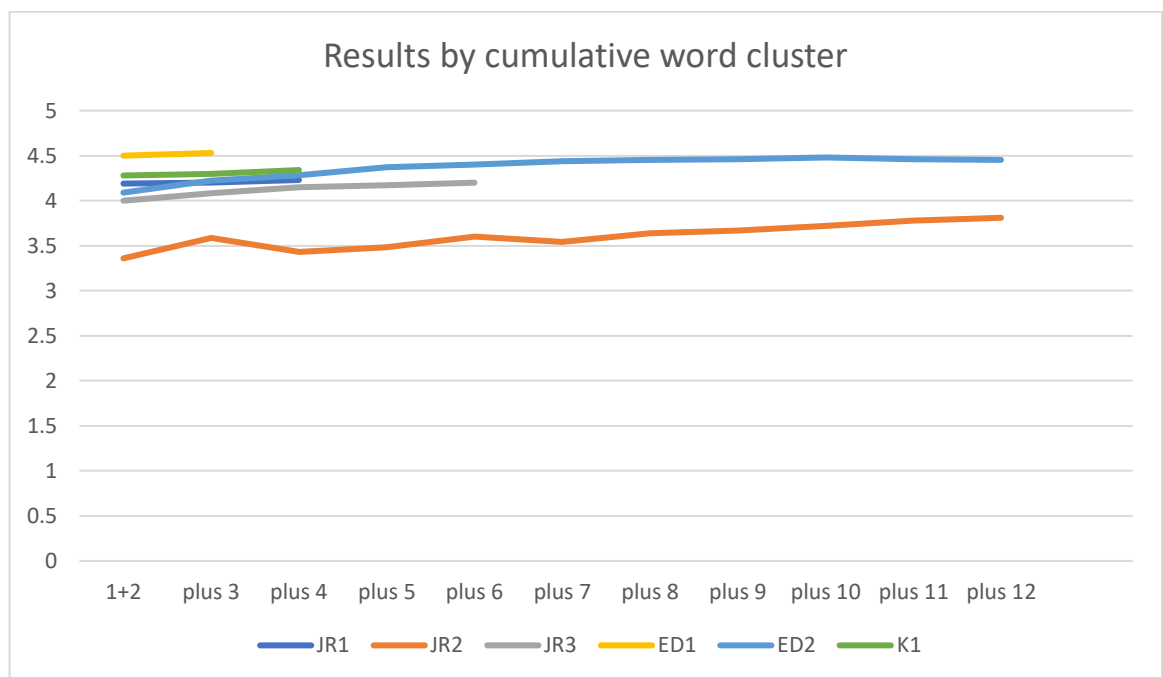
JR3 = Intergram 11

ED1 = Franklin 372

ED2 = Franklin 640

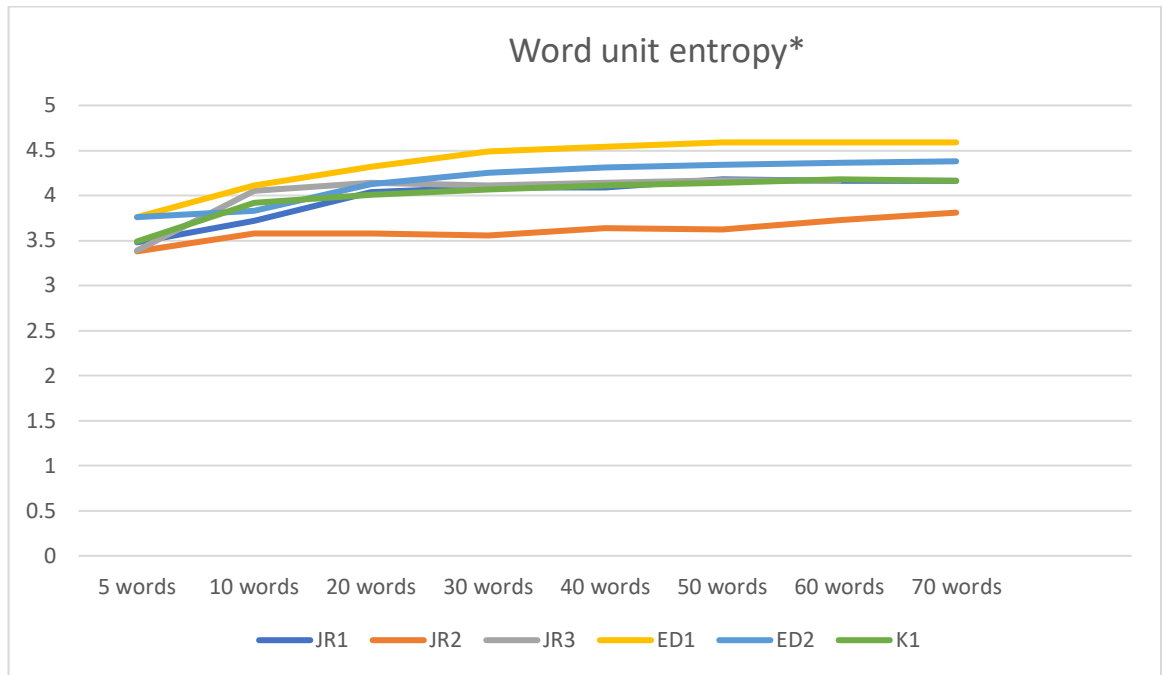
K1 = If

2. Results by cluster cumulative



This test adds the previous clusters to the next, testing a growing piece of text until it reaches the end of the poem.

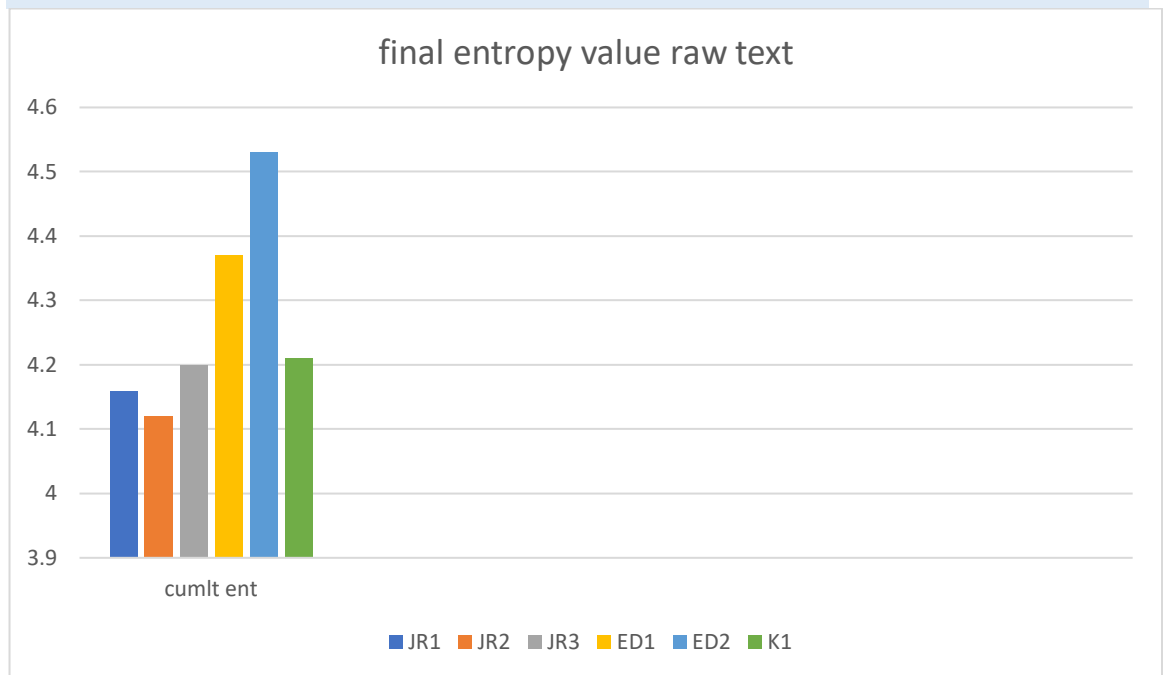
3. Results by word unit direct comparison



**not cumulative*

This test offers more direct comparison by breaking all texts into equal-sized clusters. The first calculation is 5 words, then moving to 10 word increments. It was noted that the first 5 words see greater increase in text entropy, hence breaking the first ten word group into two parts.

4. Raw text cumulative final entropy total



*Shows the final entropy cumulative with all punctuation and line breaks removed, as raw text.

5. Re-test:

A second batch of tests looked at longer texts to explore whether the shorter works skewed results.

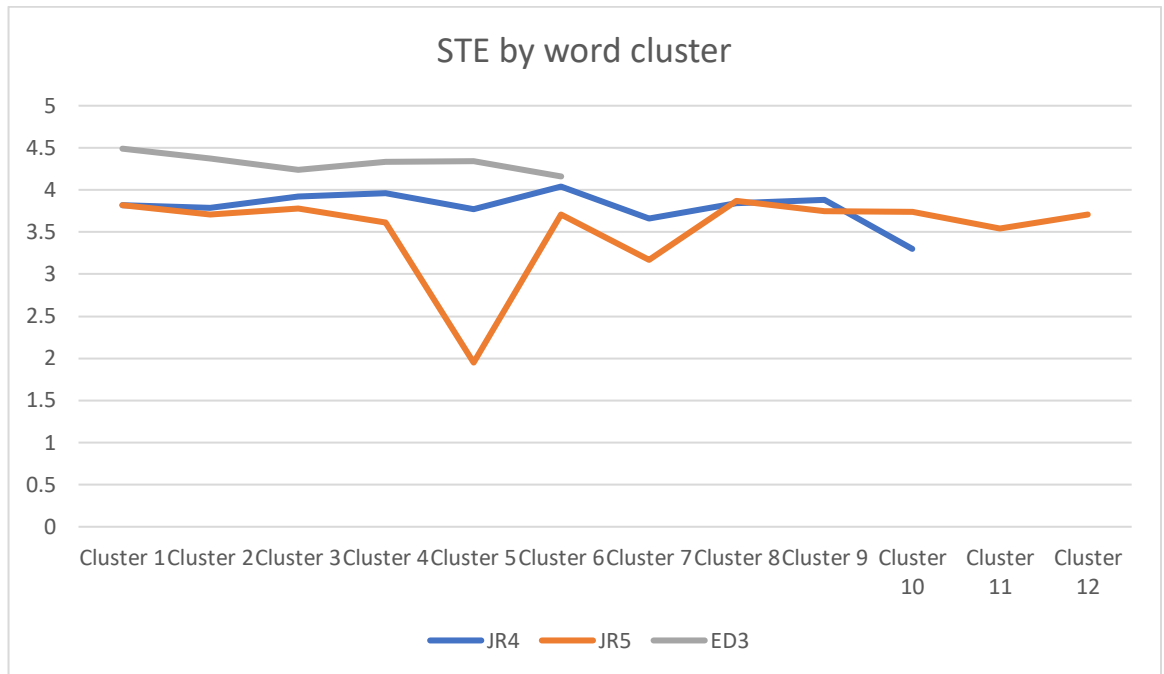


Diagram poetry

JR4 (Jim Rosenberg) = Diagram 4.10

JR5 = Diagram 4.15

linear lyric poetry:

ED3 (Emily Dickinson) = Because I Could Not Stop for Death (F 479)

Appendix 2

Texts referred to in chapter 3

Key

JR1: Jim Rosenberg: The Winding Interval:

Go to: <https://www.inframergence.org/jr/winding/29.html>

JR2:

Jim Rosenberg: Diagram 4.1

Go to: <https://www.inframergence.org/jr/diags4/d4.1.html>

JR2:

Jim Rosenberg: extract from Diagram 4.1 (*reproduced as raw text*)

different moon

is charm cage

wing containing

blot the wish

effectively

ED1: Emily Dickinson

#372 Franklin

Go to: <https://www.poetryfoundation.org/poems/47651/after-great-pain-a-formal-feeling-comes-372>

ED2: Emily Dickinson

#640

Go to

<https://poets.org/poem/i-cannot-live-you-640>

K1: Rudyard Kipling: 'If'

Go to: <https://www.poetryfoundation.org/poems/46473/if--->

Full text of poem by John Mack Low

John Mack Low, excerpt from

'Words and Ends from Ez'

parts from Paris,

Potomac,...

cOmmerce n fUrther e is Not owneD Ead yZia d oR untAin Perennial cOry....
moUs turNip f SweDen....
E iZing s,
gReat the
Ancient Property...
tO mpUte itiNg,
o reaD Esop's nZa heRefore by nAture Prussia,
hOg d,
GUstavus ou kNow rge 3D Ere eZing cuRe tenAnce Prayers,
mOns...
eqUal as iN ur oLD E TZin ntRa,
out À \pable
rOle f d'Une tioN ccorDing Eur nZoff...
foR depArture,
Purchase e Only iqUe ve aNy alkeD Espeare,
nZoff:
teR e peAce Pain?"
FOr e mUst goiNg.

Copyright: John Mack Low (every effort was made to trace the author for permission to reproduce this poem but was unsuccessful).

Appendix 3

Correspondence between Russell Evans and Jim Rosenberg.

Email correspondence

From: Jim Rosenberg <jr@amanue.com>

> Sent: 08 December 2019 10:05

> To: Russell Evans 1 <russell.evans@plymouth.ac.uk>

> Subject: Re: diagram poems

>

>> **Can I check something I wrote about your work? I wrote an essay**

>> **recently in which I talk about your notation**

>> **and said that the x is a sort of 'placeholder' notation in one of the**

>> **diagrams, like the variable you get in algebra. Is that how it is? Like**

>> **it represents the possibilities of 'information' that could arise from**

>> **the word cluster?**

>

> If you're talking about the letters like x y and z that appear in the

> notation key, then that's sort of right. Basically the letter is like a

> variable that stands for any possible node in the diagram network. It can

> be a word or phrase, a word cluster, an enclosed space, or a connector.

>

>> I'm really encouraged to read what you think about close reading.

>

- > Alas, I'm a long way away from having anything ready to read. Here are
- > some of the questions I would ask:
- >
- > Topology:
- >
- > I think of a close reading (perhaps wrongly) as a discourse text where
- > there is an intense, granular, topological mapping between regions of the
- > discourse text and regions of the primary text. If the primary text has a
- > structure which is "completely" non-linear, does the discourse text have
- > to be likewise non-linear?
- >
- > Storylessness:
- >
- > The subject of randomness is full of paradox. (As you know from your study
- > of Quantum Mechanics,) randomness is an inherent "non-removable" part of
- > the world. There is some mathematics to the study of randomness. In
- > particular, I believe it was Kolmogorov who asked: what does it mean for a
- > finite sequence of numbers to be "random"? His answer was: the sequence is
- > random if there is no algorithm for generating the sequence that is
- > shorter than the sequence itself. What does this mean for literature?
- >
- > I would argue that the literary equivalence of a Kolmogorov-random
- > sequence is:
- >
- > A text which has no story.

>

> Now even in the world of poetry, narrative has such a strong pull that

> there are lots of people in this world who deny that there even exists

> such a thing as storylessness, and if they will admit that such a thing

> exists, in their heart of hearts want to believe that it has no place in

> art.

>

> But of course, Cage taught us: the domain of music is the TOTALITY of what

> can be heard. NOTHING should be excluded.

>

> Thus the question: Is a close reading of a poem "the story" (or perhaps

> more importantly "a story") of the poem? What is a close reading supposed

> to do with a text which is storyless? Is the writer of close readings

> forever condemned to be a Storylessness Denier?

>

> Guaranteed Impossibility:

>

> It is not that difficult to create a cybertext in which conditionality of

> interaction GUARANTEES that no one can read the entirety of the cybertext.

> Does this not mean that it is GUARANTEED IMPOSSIBLE to create a close

> reading of such a cybertext?

>

> Contours:

>

> Michael Joyce very importantly wrote a great deal about what he called

> "contours". He talked about "reading" the contours of a hypertext as a way
> of gaining "altitude" above the hypertext in the sense of reading a
> contour map to gain altitude above terrain. Is not what Joyce was talking
> about here exactly a sense of not close reading but its exact opposite:
> FAR READING?
>

Jim Rosenberg <jr@amanue.com>

Mon 14/09/2020 08:08

To:

- Russell Evans 1

Russell Evans:

**I have a question -- I'm trying to find any other poets or artists or
> anyone who works in ways that are similar to you, and to be frank I can't
> find anyone. If I'm right then that's quite an endorsement of your work.
> Could I ask if you know of anyone I could look into? They might be
> similar to your work in process or in outcome or maybe just look similar
> but do not relate to your way of working.**

Jim Rosenberg:

The closest I can think of is the Computer Scientist Cathy Marshall, who I describe as the mother of Spatial Hypertext. She created a hypertext system called Aquanet several years ago which uses relations as its structural model. When I first read her 1991 ACM Hypertext Conference paper I nearly

fell out of my chair. I had been asking around whether anyone had built a hypertext system that could handle n-ary links, and I was being told by several people to check out Cathy Marshall's work. Of course my diagrams have always used a relational model, so the fact that her system did that was amazing; but more than that, the way she rendered the relations graphically looked so similar to my diagram notation that it was uncanny.

Unfortunately, Aquanet did not catch on; in fact I've never actually had my hands on it. What happened with that system is kind of interesting. She wrote a second paper (with colleagues) which was a user study, and what she found was that the users were not really using the relation support; they were using the system as a kind of idea canvas for emergent structure. This led directly to her next system, called Viki, which was the first spatial hypertext system.

Back in the early 90s I frankly had a rather bad attitude toward hypertext, making the same mistake a lot of people still today make of thinking it nothing but nodes and links, and thinking that didn't have much to do with what I was doing. When I realized that the hypertext community considered Cathy's work hypertext too, that's when I realized I could fit into that community myself.

Hope this helps ...

-See ya, Jim

From: Jim Rosenberg <jr@amanue.com>

> Sent: 24 May 2021 10:00

> To: Russell Evans 1 <russell.evans@plymouth.ac.uk>

> Subject: Re: questions for my PhD on your work

>

> Hi there! Thanks for the attention! I've been a bit swamped lately with

> fighting the frackers, but hopefully things will calm down; this isn't a

> response to your questions but just an acknowledgment that I will be

> working on this.

>

> BUT: I've got a bit of a problem. I have A LOT to say about simultaneity

> -- in fact I used to call my word clusters simultaneities -- but this is

> from the standpoint of the latest piece I've been working on, which you

> haven't seen, called Diagrams Series 7 #3. Two major things have been

> happening in my work, which have taken a lot longer to do than I had

> thought they would.

>

> When I started doing The Inframergence, I was still making "cards" --

> screen-sized spaces where the interactivity either brought things forward

> in the same space or switched out the space completely for another one.

> This is really the interface paradigm I had been using since HyperCard

> days. I didn't really plan this, but somewhere along the line in doing

> The Inframergence I realized I could implement closing spaces to a

> thumbnail while keeping all the spatial associations intact inside a

- > portal larger than the screen, so that the entire piece was really one
- > potentially very large space.
- >
- > So the first large goal I've had in recent years was to extend this to
- > the full diagram notation. This has meant that when spaces are opened and
- > closed, the diagram has to be redrawn on the fly programmatically. I've
- > gotten that done, and wrote three pieces with it as part of my latest
- > work, Diagrams Series 7.
- >
- > The second big task has been -- for the first time since the mid '70s --
- > to work with sound. This has required bringing in sound and creating
- > a sonic version of the diagram notation. This also has taken quite a lot
- > of time, but I think I am OK with how it has come out. So far I have
- > only got one piece with sound installed; it is basically artistically
- > finished but installed within my development image and I need to break
- > it out into a stand-alone publishable form. With much trepidation, I'd
- > also like to make a video of a performance of it (or possibly more than
- > one).
- >
- > So: at the risk of delaying you, I have to get you a version of Diagrams
- > Series 7 #3 with sound in it.
- >
- > What operating system are you running? I've been developing on Linux for
- > the last many years (in Squeak) so I should be able to package something
- > no matter what operating system you're using (unless it's IOS or Android

> -- I don't think there's a version of Squeak for either one.) Linux,
> Windows, Mac OS X, or even *BSD -- any of those should be fine. Alas, I
> haven't even alpha tested on Windows or OS X, so I could get some
> surprises. (I also need to know if you're running a 32-bit or 64-bit OS.)
>
> Are you willing to be a beta tester? I sure hope so, because without
> experiencing Diagrams Series 7 #3 you won't really get where I'm at when
> it comes to Time.
>
> -Thanks, Jim

Main interview conducted by Russell Evans: 12.5.21

Jim Rosenberg responses to questions:

Q4

The reader should take the entire diagram as a sentence. The diagram notation *is* a syntax. The challenge is not how to dissolve syntax, or give up syntax, but how to *open* syntax to more possibilities, including direct juxtaposition. "Gaze Tour" is not really right here as the mode of reading that I do when I read over these works after I've made them – certainly not in the sense of what I would call "saccadic reading". There is a question about whether to read the diagrams top-down or bottom-up, or more accurately outside in or inside out. I tend to do it inside out, but not privileging top-to-bottom or left-to-right. The phrases at the nodes should be read just as phrases or clauses are in ordinary syntax, but with some additional possibilities.

The clusters are juxtapositions where the individual layers are just “there together” and have no other relationship than that of being in the same point in space. I call this the null structure. Nodes and enclosed spaces are connected (network-wise) into relationships that are just like the kind of relationships in ordinary syntax. With a “drawn” diagram you can do things that are not present in ordinary syntax, like internal relationships (relationship between a part and a larger part in which it is contained), feedback loops and even somewhat paradoxical relationships like I have as the splash page for my web site.

I rely heavily on saccadic reading precompositionally; if the reader is doing this then of course I can’t “prohibit” this, but with the diagram poems I’m hoping people will follow along with the diagrammatic structure.

Diffractions Through is one work in which I have both. There are both diagrammatic elements and polylinear elements, and I have given readings in the past in which I recited the polylinear parts both following the linear flows and saccadically.

Giving “readings” of the diagram notation has been a huge problem all the way up until Diagram Series 7 #3, where for the first time I figured out how to do the diagram notation as sound as well as visually. In the past whenever I gave “readings” of diagrams I simply left the diagram notation silent. Over the years I’ve grown more and more uncomfortable with that. (Back in the days when I was doing Diagrams Series 3 and Diagrams Series 4, I insisted that those pieces were unrecitable. I still feel that way.)

Q6

I’m not familiar with the work of Ebeling, and am actually not knowledgeable about current research in information theory. My take on information theory goes back to a combination of

two things: (1) The Shannon Measure of information, and (2) my concept that there is an Energy Transaction Layer that underlies communication, and that art can be made to address the energy transaction layer directly. This led to a paradox, which I call The Shannon Paradox. The Shannon Measure of information basically measures the number of bits by how many possibilities are *excluded*. On the other hand, when you look at the work of art as an arena for possible energy transactions, there is a natural desire to *include* as many transactions as possible. (This is consistent with the desire to *open* syntax to juxtapositions of elements that have no relation to one another except the artist's intuition that together the elements "work". Thus the paradox: How do you resolve the idea that communication seems to rely on exclusion, but art at the energy transaction layer seems to rely on inclusion.

When I first formulated this as a paradox it brought me up completely short. There were several years in which all I could do with this paradox was to look at it and say "Hmm, I don't know!"

Then one day Sandy Baldwin put out a call for a conference on codework called "Bios". My first thought was: I don't have anything to say about this. But I started writing, and as I wrote suddenly the way to deal with the Shannon Paradox became clear. There *is* a place in information theory where you want to maximize inclusion: the *channel!* Instead of thinking of the text as "the message", think of the text as *both* the message and the channel, and in fact as a system which *oscillates* between message and channel. I wrote about all of this in my essay "Bios / The Logosphere / The Finite-Made Evolver Space".

I'm actually not an admirer of the idea of using the same word, "entropy" for both the Shannon Measure and entropy in the sense of molecular disorder in the laws of thermodynamics, and I haven't been through the formal argument that these are indeed the same concept. Certainly I don't like at all the term 'Entropy' as a description of chance

operations. I don't think of chance as disorder. I think of it as its own kind of order. There is an interesting paradox here: Chance is a more effective way of filling a choice space than choice is. (I never had an opportunity to put this formulation to John Cage, but my impression is he understood it completely.)

If you think about entropy as the dissolution of structure, then my work is not about entropy at all:

It is very easy to have structure. You just do it. It is very easy to *evade* structure. You just do it. What is hard, what is really hard, is to have both structure and structure evasion together, in close confines, at a very granular level, *interoperating*. I have spent a lifetime trying to figure out how to do this, and in some ways feel as though I'm just getting started.

Q5

My composition process relies heavily on what the composers call precomposition. It is a multi-layered process in which I take very large phrases composed at a previous layer, cut them into very small phrases, print these small phrases out in randomized order unified into a multi-page prose block, and then use this as a prompt sheet to compose the next layer by saccadic reading. At the last stage I'm taking the prompt sheet and composing the actual words that appear in the poem. I gave a discussion of this process (as well as a discussion of the Shannon Paradox) in my essay "Bios / The Logosphere / The Finite-Made Evolver Space", which is in my book and on-line here:

<https://www.inframergence.org/jr/bios.html>

Q3

On the question of legibility, you have to look at my work in two phases: interactive and pre-interactive. Back in the 70s when I was doing poems for simultaneous voices, I thought of intelligibility as just another artistic variable. Intelligibility would vary from place to place in the poem, just like so many other aspects of the poetics/prosody, and that's just how it was. When you put words into the same space, there will be some relinquishing of intelligibility — or so I thought, not having the experience of text interactivity. I remember that when I had “Completing the Square” mixed, the studio engineer was both shocked and disgusted that I wanted it mixed down to mono. To humor him, I let him do a stereo mix, and then when I listened to it I said no, it has to be mono. The point was that where words happened simultaneously I wanted the layers to blend in such a way that you couldn't really pick out the individual layers. Varying amounts of unintelligibility was just something that I accepted.

Everything changed when I began doing interactive work along about 1987-1988. With interactivity, now it was possible to read the layers individually (no loss of intelligibility at all), and then have the layers overlaid when you leave the cluster. By attaching sound to the same interface, I can get the same effect sonically. So, in mixing sound for Diagrams Series 7 #3 I've come to the exact opposite idea as all those decades ago when I did a lot of sound pieces: I try to mix the overlay so the individual layers are as separable as possible.

Q2

I've been referring to my word clusters as simultaneities since my very first paper, “Navigating Nowhere, Hypertext Infrawhere”, back in 1994.

Your question about simultaneity and spatiality needs to get turned inside out. With Diagrams Series 7 #3, the actual sonic simultaneity is at last made real and combined with spatial

hypertext and interactivity. Space is primary, not time. So: time is spatialized, elasticized, folded, equivalenced. The units of time are *put into* space, put into the *same space* to achieve simultaneity. I don't think about space-time in the sense of physics; I think about time-space. Time is a (crude!) measure of the experience of being in a space. When you talk about "space between the sounds", I'm guessing you're thinking about the sounds as being primary and occurring in "stereophonic space". But I quit doing work in "sound-only" media back in the 1970s, and have been working with sound again only lately. The space that is important is the space within the diagram.

Q1

The braided vortex served as motivation for the inward spiral structure of *The Inframergence*, but for the most part my interactive works, which are the main body of my work, have been written "bottom-up", not "top-down".

Appendix 4:

Comments from Bianca Stone about diagram/poetry comics by Russell Evans

Comments for Russell Evans

Bianca Stone

(poetry comics works)

August 2021

Russell,

Spending time with these comics, my emotions are of overwhelming gratitude that they were created. I find myself lost in each corner of the page, which you use magnificently. The fragmented pieces floating in and out of tangible space, the images disappearing, and their disappearance outlined and highlighted on the page, speak to the missing element that is always at work in poetry, and indeed, of memory and experience: there is so much we'll never fully know or understand. Since I get the sense that the themes behind the poetry comics are of loss, of these two brothers, mainly, I feel a lot of guilt, anguish, and attempt to address the unaddressed trauma—yet here there isn't a full arc yet. The Subject matter of trauma is indeed there, but it is highly interrupted. The language itself, by line breaks in poetry is thus, and in poetry comics is it, of course, heightened even more. You take it far, interrupted and erasing information given, both in the language and image. You "add" images into the text flow, which I find really awesome. I have often thought of the rebus as a tool in poetry comics, but never could figure out a way to make it work. You have! How you do it, is you cleverly don't use

obvious icons as replacement, ambiguity is still there, and heightened. The icons and symbols, are weighted and open to interpretation, and what I love too about that is that it exposes for me that a word is not really that different!

Your text is legible, 99% of the time, which is important. The poetry text is sound. The artwork and color work is great.

As to themes, I love the little books that keep coming back, they add a kind of meta exploration of the form, that this is a narrative, but disjointed and undone, and ongoing, perhaps eternally. The mathematical elements in the form are really interesting too, and almost provide a kind of counter-balance to the textual/lyrical. Numbers vs. language. It heightens the sense that there's something that the speaker is trying to figure out in this. At first I thought it was a romantic relationship, but it totally doesn't have to just be that. There's the family members that that have been lost as well.

Other themes: Blade/saw/ax; water/ice; brothers; disappearance; miscommunication/silence/unspeakableness; needles/drugs; time (months, dates); numbers/mathematics; feet.

These are just some, but I think in terms of thinking of this as a manuscript these are important as they start to accumulate into a narrative arc. My sense in this collection is that, which I love them each on their own for their visual lyricism, as a unit they will function that much more powerfully, with the added pleasure of a story unfolding, subtly. This will be your hardest task: how much to "give" us.

As it is now, I could totally have more. The one piece that mentioned “Mary” was like this tiny moment of feeling more tethered to the speaker’s subject’s, merely because the name was such a narrative move.

One idea I had was some emphasis on titles and subtitles, that could ground us more. Things like “Two Visits by Dead Brothers” was highly effective. Embracing titles and openings, so to speak, could set us up nicely, and mimic a poetry book more.

One thing I love about poetry books is that separate but whole feeling, that each little poem is its own unit, but all together they make something as well. You can really obsess over your themes, and the arc of the story.

My advice for a book: GO ALL OUT. Make the story more present, people WANT that. “Put people off”??? NO WAY. People are thirsty for real drama, made in an interesting and tangible way. Keep your wonderfully illusive, and alluding method as it is, but add in flourishes of directness as well. One-page section breaks, which are a full-page single almost poster-style advertisement-like/title...I’m thinking of Chris Ware’s methods, particularly his wonderful “Building Stories” book in a box. I can see some having no text, too.

There is a distinct lack of features in your comics. When we see faces, they are grotesquely distorted. This is great, and speaks to the state of loss (I assume the brothers) and the speaker’s state of mind. But it’s something to consider. Perhaps waiting, and then giving us a little piece by piece, and by the end having more fully formed faces and bodies, might be an interesting task....

They DO stand alone, and you can send them out to magazines. They will need more emphasis on titles, of course.

Most magazines accept poetry comic submissions, including Poetry Magazine. Online mags are great for this. And comic magazines, like <http://www.tci.com/> (The Comics Journal) would probably love them.

I absolutely want to publish some in ITERANT. And encourage you to submit!

One thing is that, if they are on your site already, a magazine won't like that....I'm not sure how the art world works, I think it's different. By literary magazines want to be the only ones showing that piece.

The poetry comics scene is bizarre and all over the place, and no one can really quantify it. I can say for sure, your work is closer to what I believe poetry comics are than most of what I see out there. In that way, it's awesome. You get to be one of the people paving the way! And you ARE.

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Information theory developed by Claude Shannon in the 1940s provides a simple, but powerful model for reasoning about communication that far transcends the relatively narrow technical domain of telecommunications, for which it was initially developed. The use of language for exchanging messages is, arguably, the most distinctive feature of Homo sapiens as a species. Language is central for almost everything we do, and among many different ways language is used, poetry is perhaps the most enigmatic. Poetry is an ancient invention and never went out of fashion, but the reasons for its existence and the mechanisms of its impact remain elusive. Does information theory have anything to say about poetry? If poetry is often conceptualized as a message with

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Attempts to answer these questions in the past 60 years that we review in this chapter
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ⁱ Zbedik, p1

ⁱⁱ Deleuze, A Thousand Plateaus, p208-9

ⁱⁱⁱ Deleuze, A Thousand Plateaus p345

^{iv} Deleuze, A Thousand Plateaus p345