Allen Fisher

The Æsthetics of the Imperfect Fit
for Royal Holloway London 2013

slide 1, preamble

The Æsthetics of the Imperfect Fit was prepared as three one-hour sessions, given as the Glasfryn Seminars in February 2012. They were a culmination of many years of work in poetics outside of academic practice.[1] A synthesis of the seminars was given as the annual lecture for Birmingham City University in December 2012. The Royal Holloway talk is a selection from the three Glasfryn Seminars informed by the Birmingham synthesis.

The talk deliberately uses many of the images that appeared, with a different attention, in *Testing and Experimenting*, Birkbeck February 2013.

The subject is æsthetics,[2] the underlying themes are æsthetic facture and reception. Eventually the subject will be how meaning might be achieved by slow accretions and lead to aspects of truthfulness.

The discussion begins with two idea clusters that demonstrably overlap, focused around ideas of perception and truth, one regarding the natural world and the other the world of culture. The discussion of 'second nature' has been omitted on this occasion.

slide 2
Angelfish and reaction diffusion patterns[3]

The talk uses a series of images, which provide an *aide mémoire* or *theatre of memory.* This is partly from ideas of public speaking described by Cicero and my practice in *Fluxus* performances in the 1970s, and subsequently as an art historian in the period 1984-2009, but also importantly from twentieth-century writers on the art of memory, that is from Frances Yates, Mary Carruthers and Paolo Rossi.[4]

The talk also uses examples of artistic and poetic achievements, which partly demonstrate the thesis.

This slide shows images of an Angelfish in relation to the reaction diffusion patterns produced by kinetic chemistry. Ideas of correlations of this kind were articulated by

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[1] The earliest discussions, in the 1970s, were not published; the first focussed discussion appeared in an issue of *Spanner,* which published *Necessary Business* in 1985; Writers' Forum published *Confidence in lack* in 2007, the *Complexity Manifold* talks were delivered over a period of five years from 2006.
[2] The detail of my basis of this, from Baumgarten and Schiller, Adorno and Foucault, has been omitted from this talk.
[3] Shigeru Kondo and Rlhito Asal (1995) 'A reaction-diffusion wave on the skin of the marine angelfish *Pomacanthus', Nature* **376**, 765.
[4] For example, Frances A. Yates (1966) *The Art of Memory;* Mary Carruthers (1990) *The Book of Memory. A Study of Memory in Medieval Culture;* Paolo Rossi (1983, translated 2000) *Logic and the Art of Memory. The Quest for a Universal Language.*

biologists like D'Arcy Thompson in 1917 and have been extended by many biologists and mathematicians since, such as Alan Turing in 1952, C.H. Waddington in the 1960s, René Thom in the '70s and Stuart Kauffmann in the '90s[5]

The æsthetics for this talk can be crudely summarised: it is that all processes in human consciousness have an æsthetic component and that all art can have many functions, but to call it art its æsthetic function must dominate.[6]

There is therefore a relationship between consciousness and art, between the æsthetic component and the recognition of an æsthetic function in what it encounters; in this talk that recognition is named 'a pattern of connectedness'. The thesis extends this to say that it is not the perfect fit or complete coherence that provides the most effective art or poetry, but rather that the necessity for an imperfect fit is part of the effectiveness of the æsthetic reception, which is to say that the pattern of connectedness, in recognition, experiences an interruption, a difference from exact expectation. This warmly couples to the idea that æsthetic production is made possible only through the combination of artistic facture and æsthetic reception. Every encounter with an artefact combines these two broad processes: the facture of the artefact and the reception to the artefact.

The talk now addresses how this æsthetics, these patterns of connectedness, is made possible.[7] This begins with the human æsthetic relation to the natural world or rather, how human patterns of connectedness seem to operate. There are patterns in the natural world, a world which we are organically part of. The information of pattern is a combination from human inheritance and human experience, including the parameters and potentials of DNA and its epigenetic switches.[8]

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[5] D'Arcy Wentworth Thomson (1917,1961) *On Growth and Form,* Cambridge University Press; Alan Turing, 'The Chemical Basis of Morphogenesis', 1952, *The Essential Turing,* edited by B. Jack Copeland (2004) Oxford University Press; C.H. Waddington(1968) *Towards a Theoretical Biology,* Edinburgh University Press; René Thom (1975) *Structural Stability and Morphogenesis. An Outline of a General Theory of Models,* Reading, Mass.: W.A. Benjamin; Stuart A. Kauffmann (1993) *The Origins of Order. Self-Organization and Selection in Evolution, New York and Oxford: Oxford University Press.*

[6] Aspects of æsthetic function have been derived from Jan Mukařovský (1970) *Æsthetic Function, Norm and Value as Social Facts,* translated by Mark E. Suino, Michigan: Ann Arbor and Mukařovský (1977) *Structure, Sign, and Function. Selrected Essas,* translated by John Burbank and Peter Steiner, New Haven & London: Yale University Press.

[7] 'Patterns of connectedness', as part of an æsthetic theory, was articulated in Allen Fisher, *Necessary Business,* Spanner, London, 1985 (rewritten 1992). Rewritten version in *Topological Shovel,* The Gig, Ontario, 1999 (which also includes the 'Thumbnail Lecture', 'The Mathematics of Rimbaud', and 'Topological Shovel'). Aspects of this concept cluster was informed by Gregory Bateson (1979, 1980) *Mind and Nature, A Necessary Unity,* London: Fontana/Collins and Carl Schuster and Edmund Carpenter (1996) *Patterns that Connect, Social Symbolism in Ancient and Tribal Art*, New York: Harry N. Abrams.

[8] Tim Spector (2012) *Identically Different. Why you can change your genes,* London: Weidenfeld & Nicolson; Evelyn Fox Keller (2012) *The Mirage of a Space between Nature and Nurture,* Durham, North Carolina: Duke University Press.
http://phys.org/news/2010-12-evelyn-fox-keller-nature-nurture-debates.html#jCp;
Eva Jablonka and Gal Raz, 'Transgenerational Epigenetic Inheritance: Prevalence, Mechanisms, and Implicastions for the study of Heredity and Evolution', *The Quarterly Review of Biology,* Volume 84, No. 2, June 2009.

slide 3:
a simulation showing the relationship of the immune system to the Polyomavirus[9]

This slide shows a simulation of the relationship of the immune system to the Polyomavirus. The human immunological system has both innate and adaptive memory; the former is the result of millions of years of experience which evolved pattern-recognition receptors that can detect the signatures of common invaders, the adaptive immune system is set up to remember attackers each human encounters during in a lifetime.[10]

slides 4:
Golden Section diagram[11]

Æsthetic practice has used natural phenomena to inform its ordering since ancient times, this diagram, known since 1835 as the 'Golden Section',[12] has been derived from Euclid's *Elements,* which dates from 323 BCE and before him the ideas of Pythagoras.

slide 5:
the Parthenon, Athens, 447-438 BCE[13]

The Parthenon used these Doric orders, aligned to Pleiades, a hundred years before Euclid and some ancient Egyptian architecture, many hundreds of years before that, did also.

slide 6:
Le Corbusier's modular grid[14]

The Modernist architect, Le Corbusier, revived attention to this system in 1948 with his modular grid. His gendered idea of the universal man refers directly to Egyptian orders and the work of the Roman architect Marco Vitruvius Pollio. Such systems also led to

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[9] James P. Griffith, Diana L. Griffith, Ivan Rayment, William T. Murakami & Donald L. D. Caspar (1992)Patterns of connectedness: using simulations from the inside of Polyomavirus at 25-Å (Ångström) resolution from James P. Griffith, Diana L. Griffith, Ivan Rayment, William T. Murakami & Donald L. D. Caspar (1992) 'Polyomavirus capsid and vision electron density maps computed by Fourier analysis', *Nature* **355**, 6361, 1992.
Polyomaviruses are a group of small, non-enveloped DNA viruses that can infect birds, rodents, and primates. See also: Elizabeth A. Hewat, Nuria Verdaguer, Ignacio Fita, Wendy Blakemore, Sharon Brookes, Andrew King, John Newman, Esteban Domingo, Mauricio G. Mateu and David I. Stuart (1997) 'Structure of the complex of a Fab fragment of a neutralizing antibody with foot-and-mouth disease virus: positioning of a highly mobile antigenic loop', The *EMBO (European Molecular Biology Organization) Journal,* **16**, 1492-1500.
[10] These broad claims and assertions are verified by Lauren Sompayrac (1999, revised January 2012) *How the Immune System Works.*
[11] Derived from Euclid (323 BCE, English 1933 AD) *Elements,* Book VI, Proposition 30.
[12] Named by the mathematician Martin Ohm, see: Underwood Dudley (1999) *Die Macht der Zahl: Was die Numerologie uns weismachen will (The power of numbers: what numerology would have us believe),* New York & Heidelberg: Springer, p.245.
[13] Photograph from 2002 restoration (started in 1975).
[14] Le Corbusier (1948, English 1954), *The Modular, A Harmonious Measure to the Human Scale Universally applicable to Architecture and Mechanics,* London: Faber & Faber, fig.22.

decisions in the mass manufacture of furniture; kitchen units have used a standard height for over a century.

slides 7:
Thomas Girtin, *The White House at Chelsea* (topologically titled posthumously as 'Chelsea Reach looking towards Battersea')[15]

Another feature of human presence in the natural world can be considered in terms of human perception and the depiction of horizons. This has become formalised in the last five hundred years, and that formality has been emphasised by human use **in the West** of rectangular sheets for writing, for map making and for landscape pictures. Thomas Girtin's work often contributes to the Romantic low horizon view, giving some emphasis to the sky and cosmos. Incidentally, he is also using an approximation of Golden Mean in the division between left and right produced by the placing of the white house in Battersea seen from Chelsea across the reach of the Thames.

slide 8,
John Constable, View of Dedham[16]

The realism evident in the work of John Constable often lifts that horizon above midway, giving some emphasis to the Earth and the human labour upon it. The formality of tying a picture to the edges left to right was developed by Constructionists and many of the artists that followed them, in the Modernist period.

slide 9:
Franz Kline, *Accent Grave*[17]

This is a work by Franz Kline from 1955. Proprioceptively you can get the feeling that the whole structure is suspended, held left and right, to prevent its fall to the bottom.

slides 10,
Fibonacci series in fir-cones[18]

In the 13th century, Leonardo of Pisa, known as Fibonacci, formalised understanding of proportions for mathematical and æsthetic purposes. This is Ernö Lendvai's use of the proportions in describing a fir-cone, which he demonstrates was used by Bèla Bartók in his music.

slide 11,
notes for a Fibonacci diagram[19]

David Mayor, the administrator, an organiser and artist of *Fluxshoe England West*, drew books of diagrams like these and showed how the proportions can be used to construct a spiral.

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[15] Thomas Girtin, pencil and watercolour, 1800, 29.8 x 51.4 cm (12 x 20"), Tate Collection.
[16] John Constable, oil on canvas, 1814, 55.6 x 77.8 cm (22 x 31"), Museum of Fine Arts, Boston.
[17] Franz Kline, oil on canvas, 1955, 191 x 132 cm (75 x 52"), Cleveland Museum of Art..
[18] Ernö Lendvai (1971) *Bèla Bartók, An Analysis of his Music,* London: Kahn & Averill.
[19] David Mayor, 'Fibonacci notebook', c.1970, AF collection.

slides 12, spirals
Glacier at Maloja Pass, Upper Engadine, Switzerland[20]

The Earth's spin and orbit and the resulting Coriolistic forces encourage spiral forms at many levels. This is the view of a slow moving glacier seen from above (the site is near Nietzsche's retreat at Sils Maria where he wrote part of *Thus Spoke Zarathustra*).

slide 13,
Nautilus Pompilius[21]

This is the famous cephalopod, used to demonstrate logarithmic form in nature.

slides 14 and 15,
plan and side elevation views of the Loretto Chapel staircase[22]

This chapel staircase in Santa Fe demonstrates the relationship between the spiral and serpentine form.

slides 16 and 17 Golden Section and Fibonacci proportions
***Luca Pacioli and his student[23]* and diagram of the relationship of the Golden Section to Fibonacci's proportions[24]**

Luca Pacioli wrote *De divina proportione* (*Divine Proportions*) in Milan in 1496–98, it showed how the Golden Section and the Fibonacci proportions are part of the same natural and human cultural system. The book was published in 1509 and was illustrated by Leonardo da Vinci or his workshop, a group already using Vitruvius' Golden Mean. A contemporary book, unpublished in Pacioli's lifetime, but probably referred to by Albrecht Dürer, demonstrated how to move n egg across a table without touching it.[25]

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[20] Carolyn Blake, photograph, 1997, AF collection.
[21] Heather Angel (1972) *Nature Photography: Its Art and Techniques* Watford: Fountain Press.
[22] Anonymous carpenter, Santa Fe, New Mexico, 1877.
[23] *Fra Luca Pacioli and Student,* tempera on wood, 1495, painting attributed to Jacopo de' Barbari, Museo & Gallerie di Capodimonte, Naples. The ideal geometries derived from serpentine and spiral forms were exemplified in the early work of the Babylonians and then the Greeks. They were codified by Euclid in his *Elements* in 323 BCE. In the medieval period Arab mathematicians and the European, Leonardo Pisano Fibonacci, provided the algebra needed for ideas of proportions from natural phenomena. Around 1500, Fra Luca Pacioli, the inventor of double entry book-keeping, brought the ideas of Euclid's Golden Section or Golden Mean (names attached in retrospect in the nineteenth century) into mathematical connection to the Fibonacci series in his Divine Proportions, illustrated by Leonardo da Vinci or one of Leonardo's workshop.
[24] Derived from Euclid, *Elements* and Fibonacci (1202) *Liber abaci.*
[25] Luca Pacioli (after 1496) *De viribus quantitatis (On the power of numbers)* includes 'how to make an egg walk', a conjuring trick. 'Empty an egg through a pinhole, fill the hole with wax and attach a long hair to the eggshell. Fasten another bit of wax to the other end … placing the egg on the table, with the nail of your middle finger, pick the said wax, and by moving it here and there … it will follow. This must be done in a place not too brightly lit, with onlookers in the distance.'

slide 18,
C.A. Muses' idealised spatial representation for time and consciousness[26]

C.A. Muses in 1965 perpetuates these idealised forms in his three-dimensional illustration representing consciousness and time.

An interim summary indicates that humankind uses natural phenomena to inform its æsthetic activity and as part of its credential for truth-telling. These suggestions can now be interrupted with a question that will, for the moment, be left unanswered: if humankind bases much of its evidence for æsthetic activity and truth-telling on natural phenomena, on, that is, empirical evidence, what is humankind to do about those aspects of reality that cannot verified without the use of an interlocutor or black box?

slides 19,
Nebulæ in the Pleiades[27]

The unaided eye can sometimes see ten stars in the Pleiades group; the star group was once known as the Seven Sisters; a telescope will produce thirty or forty. Galileo saw forty through his first telescope around 1610. 625 stars were visible with a powered telescope in 1910. Pleiades is now seen as an open star cluster, one of the nearest clusters to the Earth, in the constellation of Taurus and contains over 1,000 statistically confirmed members; humankind uses black box, interlocutors to know this.

slide 20,
Freeze-fracture Canning electron micrograph of stereocilia projecting from the surface of hair cells in the inner ear[28]

Humankind uses an electron microscope and freeze-fracture electron micrographs to see hair cells. The freeze capture is a useful tool for medical analysis, but it can conceal the necessary concept of a membrane as a process.

slide 21,
Fluorescent proteins used to visualise cancer in *vivo*[29]

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[26] C .A. Muses, idealised spatial representation for time and consciousness, *ARK* **40**, 1966, 'Divination, Higher Consciousness and Mathematics'. In quantum spacetime there are resonances and not exact recurrences. Muses' orange threads are tangents to the black sphere developing a helicoidal (seven-angled) surface and a spiral periphery. This work links directly to ideas of Pythagorean (Platonic) solids and the mathematics of Euclid, Fibonacci and Pacioli. Charles Arthur Muses (1919–2000) published *Chronotopology: Destiny and Control in Human Systems.* Muses was an informal student of Norbert Wiener. Wiener published *The Human Use of Human Beings: Cybernetics and Society* in 1950.
[27] Robert S. Ball (1910) *The Story of the Heavens,* London, New York &c.: Cassell, plate E.
[28] Bruce Alberts, Dennis Bray, Julian Lewis, Martin Raff, Keith Roberts, James D. Watson (1983) *Molecular Biology of the Cell,* New York and London: Garland Publishing, figure 4-14, 152.
[29] Fluorescent proteins visualise cancer in vivo. Robert M . Hoffman, *Lancet Oncol* 2002; 3: 546–56.
http://www.metamouse.com/links/RMH2002.Lancet%20Oncology.pdf
http://asia.stanford.edu/events/spring07/slides402S/okazaki.pdf
A way of imaging metastases in mice by use of tumour cells expressing green fluorescent protein (GFP) that can be used to examine fresh tissue, both in situ and externally. Real-time studies of tumour progression, metastasis, and drug–response evaluations. The GFP gene, cloned from bioluminescent organisms, has now also been introduced into a series of human and rodent cancer-

Recently scientists have used green fluorescent proteins (GFP), cloned from bioluminescent organisms, like some jellyfish, to examine processes in flesh tissue, both in situ and externally, providing a way of imaging real-time studies of tumour progression, metastasis (malignant growth), and drug–response evaluations. This gene has now also been introduced into a series of human and rodent cancer-cell lines in vitro, which stably express GFP after transplantation to humans and rodents with metastatic cancer. All of this analytical visual information relies on using machine interlocutors.

slide 22,
an Omega Minus (Ω^-) produced in the British National 1.5m liquid hydrogen bubble chamber[30]

Returning to the æsthetic position, if artists are relying on natural forms and patterns to inform æsthetic practice and therefore my truth-telling, what do artists think and feel about those aspects of phenomena that they cannot see directly, but need to use interlocutors to clarify the values involved. This image is of an Omega Minus (Ω^-) subatomic hadron particle produced in the British National 1.5m liquid hydrogen bubble chamber. Scientists in quantum mechanics recognises a state between empirical verification and provable, but not witnessed information as *decoherence.* For the artist the potential is to understand a state which is not reliably coherent, but is not incoherent, it is a state first touched upon by John Keats as 'Negative Capability' and by Charles Olson, partly via Werner Heisenberg, as 'Uncertainty', this new position is a state I name as *confidence in lack*[31]

slide 23,
Golden Section, second diagram[32]

Returning to the idea of order from natural phenomena and thus idealised forms, Pythagorians and Euclid formalised particular ways of arriving at measurements and proportions which were derived from nature. This diagram demonstrates the division of a plane into Golden proportions (φ)*:* 1: 1.61803399.

slides 24, and 25,
Canaletto, *View of the Ducal Palace in Venice*[33]
Whistler, *Arrangement in Grey and Black No.1, Portrait of the artist's mother*[34]

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cell lines in vitro, which stably express GFP after transplantation to rodents with metastatic cancer. Techniques were also developed for transduction of tumours by GFP in vivo. With this fluorescent tool, single cells from tumours and metastases can be imaged. GFP-expressing tumours of the colon, prostate, breast, brain, liver, lymph nodes, lung, pancreas, bone, and other organs have also been visualised externally by use of quantitative transcutaneous wholebody fluorescence imaging. GFP technology has also been used for real-time imaging and quantification of angiogenesis (development of new blood cells).

30 C. Henderson (1970) *Cloud and Bubble Chambers,* London: Methuen & Co, plate 1 figure 1.

31 Allen Fisher (2007) *Confidence in lack,* Sutton: Writers' Forum

32 Derived from Euclid, *Elements*.

33 Canaletto, oil on canvas, before 1755, 130 x 211 cm (51 x 83"), Uffizi Gallery, Florence.

34 James Abbott McNeill Whistler, oil on canvas, 1871, 144 × 162 cm (57 x 64"), Musée d'Orsay, Paris.

When Canaletto painted this he was assisted by a *camera ottica,* a device by which a lens threw onto a ground-glass screen the image of a view, but he chose to use it mainly for the foreground. The main subject, the buildings in the middle ground, were shifted left and right to match the Golden Mean. (James Abbott McNeill) Whistler used the idealised proportions for *Arrangement in Grey and Black No. 1.*

slides 26 and 27,
Dutch windmills and their reflections in water[35]
Mondrian, *Composition with Blue and Yellow*[36]

Piet Mondrian in Holland, influenced by the landscape and buildings and their reflections in water, used the proportions for his abstract compositions.

The subject has been this: humans use patterns of connectedness for experience of the world to facilitate the facture of artefacts and then use patterns of connectedness to view or read these artefacts.

slide 28,
Turner's Oak tree (*Quercus x turneri*)[37]

When I write the words oak tree, you probably have a sense of what this means, you and I may be in agreement between what, our memory informs us, is an oak tree and what we have experienced in the world. (There are, of course, many varieties of oak tree and the image shown is of a rare example. Nevertheless, identifying the tree as an oak would usually find agreement.)

slide 29,
Michael Craig Martin, *An Oak Tree*[38]

However, Michael Craig Martin's concept of *An Oak Tree,* the title of the work in the slide, does not follow the same batch of logical rules involved in recognition and agreement.

The talk now turns to different kinds of cultural precedents and ideas of proprioception, that lead onto ideas of Damage and Disruption as positive attentions.

slides 30,
William Blake, Los with a globe enters Albion[39]

Los approaches the door, the entrance to Albion, to create a new Jerusalem, with a globe, part of a machine that produces electricity devised in the eighteenth century by Joseph Priestly and others,[40] that is with the energy to fulfil his prophecy. Artists in the

[35] Unknown photographer, c.1985
[36] Piet Mondrian, oil on canvas, 1932, 104 x 84 cm (41 x 33"), Philadelphia Museum of Art.
[37] Alan Mitchell (1996) Royal Botanic Gardens, Kew.
[38] Michael Craig Martin, 1973, glass shelf, glass tumbler, two chrome brackets, Tate Collection.
[39] William Blake, 1804, frontispiece to *Jerusalem.*
[40] For example, Joseph Priestley (1768) *Familiar Introduction to the Study of Electricity* [illustration of 'electrical machine for amateur experimentalists'].

nineteen-fifties started to demonstrate and articulate proprioceptive approaches to facture and reception; that is they approached trying to make clear humankind's stance in the world, on the planet that should be thought of broadly as home and for which they were responsible. Charles Olson articulated and demonstrated this through his text *Proprioception,* but more obviously through *The Maximus Poems* and a variety of surrounding texts.

slide 31
Willem de Kooning, *Untitled,* 1988[41]

Willem de Kooning demonstrated this through his easel canvases, from this period in the 1950s and '60s and into the 1990s. These thoughts are disrupted by some of the activities of artistic facture, one of these can be manifest in graphic facture on horizontal surfaces, sometimes used by Wassily Kandinsky and Alexander Rodchenko, and innovated in scale, and new approach to Western graphic application, by Jackson Pollock.

slide 32
Harry Thubron, *Untitled construction,* 1983[42]

Another disruptive agent can be collage, evident in the works of both de Kooning and Harry Thubron, both manipulate their collage planes on a horizontal and vertical surface, and both make their concluding proprioceptive decisions on vertical easels or walls. The subsequent demonstration is again taking into account facture through gravity and an understanding of light from the sky; proprioception is a complex matter and in artistic facture is different from, if not larger than, what the medical term now implies. When Olson used the term he alluded to a range of matters; the premises for proprioception are obviously to do with human relationships to the world, but more immediately, in terms of facture and reception, to do with human experience in the process of facture and in terms of the process of æsthetic reception. Standing at an easel or completed painting, with a recognition of gravity would perhaps appear to be an obvious matter, however, culturally humans have a number of experiences of the artefact that appear to be different as a consequence of their backgrounds.

English is usually read across the page from left to right. Experiments in reading perception, by for instance Jon Oberlander with Keith Stenning and colleagues in Edinburgh, show the reading speed variation across the width of a page and the return to the next line. Using multimodal reasoning and communication, they have investigated the relationships between graphicality and expressiveness. Combining diverse research methods, they have shown how differing multimodal presentations of the same material affects the ways that people with differing cognitive styles learn new formal systems; as Oberlander puts it, 'the construction of formal models of the processes - perceptual, intellectual, and linguistic - by which knowledge and understanding are achieved and communicated')[43]

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[41] Willem de Kooning (photograph of oil on canvas from Edvard Lieber (2000) *Reflections in the Studio,* New York: Harry N. Abrams, 110.
[42] Harry Thubron, *Recent Works,* Curwen Gallery, London, 1983.
[43] The MAGIC project, in collaboration with Pat Healey in London, Simon Garrod in Glasgow, and John Lee in Edinburgh, explored how conventions in the use of graphical notations arise from sequences of

English readers usually read still images from left to right, the consequence of this is that framed images are designed in particular ways. These different ways have already been touched upon regarding horizons and dividing the spacetime being considered, but culturally more complex recurrences can be demonstrated (most of which are not discussed here). A few simple examples may suffice.

slide 33, William Wordsworth,
***The Tuft of Primroses*, manuscript page[44]**

Conventions in writing are perhaps more clearly evident in terms of spacetime; when Wordsworth writes the 1808 manuscript for 'The Recluse' he keeps to the lefthand margin for the beginning of his lines. This may now seem to be self-evident, but these are nuances worth attending to. Further more, informed typesetters will tell you that justifying lines left and right slows the reading down, we read uneven line ends with a better attention.

slide 34, Wordsworth,
***The Tufts of Primroses,* print[45]**

Part of that attention shift has to do with the slower reading of the second part of the line, as Oberlander recorded. Field composition began to free that up, which artists for some time considered an enhancing complexity. From Stéphane Mallarmé's publication of 'A Throw of Dice' in 1897 to Charles Olson's composition by field (it was addressed by Olson in his essay on the subject) and Open Field poetics, in the 1950s and '60s.

slide 35
Charles Olson,
***A Plan for the Curriculum of the Soul*[46]**

This is a scan from Olson's 1968 *A Plan for the Curriculum of the Soul.* But this isn't the talk to analyse the joint developments of constructivism (including Cubism) and collage. What is pertinent here is the manner in which the rules of recognition,
to facilitate a pattern of connectedness and thus to discern an imperfect fit,
have been shifting, making **difficulty** a demanding, but necessary tool,
in artistic and poetic practice.

slide 36,
Charles Olson, sheet from the third part of *The Secret of the Black Chrysanthemum,* January 1970[47]

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individual interactions. With Mary Ellen Foster and others, the COMIC project (COnversational Multimodal Interaction with Computers) let researchers put intelligent labeling ideas from generation and synthesis together with those on multimodal interaction and problem solving. The JAST project (Joint Action Science and Technology), took a deeper look at psycholinguistic processes during multimodal dialogue, and let researchers develop a new multimodal human-robot dialogue engine. The current JAMES project is building on this, to study the acquisition of social rules for human-robot interaction.

[44] William Wordsworth, 1808, reproduced in 1986 Cornell University edition.

[45] Wordsworth 1986, p.39.

[46] Charles Olson, 1968, Buffalo, New York: The Institute of Further Studies.

[47] *Olson, The Journal of the Charles Olson Archives,* Number 3, Spring 1975, pp.82-85.

Olson's January 1970 script for *The Secret of the Black Chrysanthemum,* which was the last work he wrote, provides the basis for what the posthumous print becomes.

slide 37,
Cy Twombly, *Untitled,* 1972[48]

slide 38,
Olson, beginning third part of *The Secret of the Black Chrysanthemum* in print[49]

An analysis of the validity of the typeset form might expose some differences of opinion about the success of the venture, but most readers would recognise the enhanced readability of the printed version.

slides 39 and 40,
Susan Howe, eighth unnumbered page from *A Bibliography of The King's Book*[50] and Fiona Rae, *Untitled (purple and brown)*[51]

To give a later example, where the Open Field mappings become deliberately radicalised by Susan Howe in 1991 for her *A Bibliography of The King's Book* where the typesetting has been planned and Fiona Rae in this painting, factured in the same year. It is here through apparent damage or disruption that the æsthetic function becomes more apparent, more demanding.

slides 41,
Georges Braque, *Still-life with Metronome*[52]

When the viewer looks at Braque's painting of a still-life of musical instruments and a metronome, factured in 1909 and 10, the viewer recognises the struggle to give it substance and meaning each time they view it, even when the image is photographed for them, in a sense fixed for them, as it is here. Viewers correctly attribute this to shifts in spacetime or differences of attention in the process of facture. They can also metaphorically think of the work as presenting a complexity of perception in the same years that Einstein and others were reframing human understanding of where and when humankind was in spacetime, what were the linguistics of relative languages in the town Einstein lived in on the Swiss-German border, and, in terms of conceptual thought about light and electromagnetism. But deeper pertinences are underway.[53]

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[48] Cy Twombly, *Untitled, pencil and chalk on paper,*1972, Private collection. *Cy Twombly* (1987) London: Whitechapel, 81.The talk did not elaborate on this example; Twombly's work is discussed in Allen Fisher, 'THE CROWD: momentum, energy and the work of Cy Twombly' on: http://www.e-space.mmu.ac.uk/e-space/bitstream/2173/9747/2/Fisher%20-%20The%20Crowd.pdf
[49] *Olson,* Number 3, pp.66.
[50] Susan Howe (1989) *A Bibliography of The King's Book or Eikon Basilike,* Providence: Paradigm Press.
[51] Fiona Rae, 1991, oil and charcoal on canvas, 198 x 213.4 cm (74 x 84"), Saatchi, London.
Marc Glimcher (2010) *Fiona Rae: Special fear!* New York: PaceWildenstein and Fiona Rae (2006) *You are the young and hopeless,* New York: PaceWildenstein.
[52] Georges Braque, oil on canvas, 1909-10, 81 x 53 cm (32 x 21"), Private collection.
[53] An extended discussion by Allen Fisher of constructed work factured in the early twentieth-century is in a document created with an unsupported version of AppleWorks. and will be added at a subsequent date.

slides 42,
Hannah Höch, *Collage, 1920*[54]

Collages of spacetimes, of more than one spacetime at once on a single image plane, become challenged again, because of literalness, by Dadaist collage, and its derivations.

slides 43,
Robert Rauschenberg,
***Drawing II* from *XXXIV Drawings for* Dante's *Inferno*[55]**

There became possible the development of statements about displaced order, ephemerality, patterns of connectedness through image to image overlaying a conventional narrative (such as Dante's *Comedy* in Robert Rauschenberg's work) and overlaying, which encouraged an imperfect fit through the variety of readings possible at each viewing.

slide 44,
William S. Burroughs, page 6 from the *APO-33 Bulletin*[56]

Part of the process of overlaying is also evident in the cut-ups and the use of columns in William S. Burroughs' work from the 1960s, which encourage peripheral reading in the process of more than one margin. There is also a further disruption of expectation, to human patterns of connectedness, which again prevents the perfect fit or conservative coherence, which comes about through the deliberate presentation of an array of artefacts.[57]

slides 45, W. Barnes-Graham,
***Passing Over*[58]**

Most artists worth their salt plan ahead, most of these same artists also facture occasional work and the difference is often not interesting, but Winifred Barns-Graham, like many of her British contemporaries, factured in series (*Passing Over* here, is from the *Tribute* series). The method permits attention to an individual poem or painting, but is enriched through a pattern of connectedness to other work deliberately connected to it through the idea of sequence. On a practical level this also facilitates the writing of more than one set in the same period. The most strident and obvious examples might include Ezra Pound's *Cantos* and Charles Olson's *The Maximus Poems,*

slide 46, Charles Olson,
***I, Maximus of Gloucester, to You*[59]**

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[54] Hannah Höch, photocollage, 1920, dimensions unknown, Mr. & Mrs. Morton G. Neuman, Chicago.
[55] Robert Rauschenberg, solvent transfer, collage, watercolour, wash and pencil on paper, 1958, 37 x 30 cm (14.5 x 11.5"), Museum of Modern Art, New York.
[56] William S. Burroughs, 1964 (1968), San Francisco: Beach Books Texts & Documents.
[57] An extended discussion of Burroughs work from the 1960s appears in Allen Fisher, 'William S. Burroughs and Engaged Damage', *European Journal for American Culture*, 2011.
[58] W. Barnes-Graham, oil on canvas,1982-86, 92 x 122 cm, from *Tribute* series, William Jackson Gallery, London.
[59] Charles Olson (1953) *The Maximus Poems / 1-10,* Jonathan Williams, Stuttgart.

but readers would want to ensure to include Gertrude Stein's *Stanzas in Meditation* and Leslie Scalapino's *Day Ocean State of Star's Night. Readers* might also recall: Robert Duncan's overlap through some of his books with the two poem sequences: *The Structure of Rime* and *Passages;* or Hugh MacDiarmid's *Hymns to Lenin;* or Muriel Rukeyser's two sequences: *One Life* and *Breaking Open;* or Theodore Enslins' three sequences: *Forms, Synthesis* and *Ranger.* The other obvious attention and impetus in facture is planning through invented orders, which the artist and poet then disrupts as part of the æsthetic necessity and efficacy.

slide 47, Philip Sydney, 'Sonnet 2'[60]

This brings the talk back to ideas of order and disruption, how one feeds the other. The sonnet form, used here by Philip Sydney, has been prevalent in European poetry since at least the thirteenth century. From Giacomo da Lentini, Petrarch, Dante and Gaspara Stampa through in England to Spenser, Sydney, Shakespeare, the Earl of Surrey and Donne and through Elizabeth Barrett Browning into the present day with, for instance *The Reality Street Book of Sonnets* in 2008 and Anthony Mellors' *The Gordon Brown Sonnets* in 2009.[61]

This use of order can provide a spring board for invention and has been evident throughout the arts, the imperfect fit relies on these premises.

slide 48:
Jackson Mac Low, 21st Light Poem: for John Martin - 30 June 1968[62]

John Cage and Jackson Mac Low, acting deliberately with strict methods of selection, formalised the aleatoric.

slide 49:
3-D Magnet Field computer simulation of reversing Geodynamo[63]

What becomes evident here is how human sense of order is in fact an idealisation of disorder, life on Earth is subject to Coriolis, geomagnetic disruption and as Henri Poincaré noted in the early twentieth-century, astronomical observations are not precise enough to detect a difference as small as the one which we imagine. He also

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[60] Philip Sydney, *Astrophel and Stella,* 1591, Menston: Scolar Press 1970.
[61] *The Reality Street Book of Sonnets,* edited by Jeff Hilson (2008*),* Hastings: Reality Street Editions; Anthony Mellors (2009) *The Gordon Brown Sonnets,* London: vErisimIlItUdE.
[62] Jackson Mac Low (1968) *22 Light Poems,* Los Angeles: Black Sparrow Press
[63] G.A. Glatzmaier and P.H. Roberts (1995) 'A three-dimensional self-consistent computer simulation of a geomagnetic field reversal', *Nature* **377**, 203-209. Glatzmaier and Roberts are at Los Alamos National Laboratory and University of California, Los Angeles. Palæomagnetic records indicate geomagnetic field on Earth for at least 3 billion years. Records show dipole polarity reversed roughly every 200,000 years with individual reversals taking about 2,000 years each. Fluid outer core surrounds solid inner core both composed mainly of iron. convection of fluid in outer core driven by thermal and compositional buoyancy sources at inner core boundary as Earth cools and iron-rich alloy solidifies onto inner core giving off latent heat and light. These buoyancy forces and Coriolis forces due to the Earth's rotation cause fluid flows to be helical, which twists and shears magnetic field, generates new field to replace that which diffuses away. note: http://www.psc.edu/science/glatzmaier.html

noted how, to make things simpler, description often substituted actual data with Eucludian geometry[64] Artists can plan for this. The use of sequence also carries a license for disruption as a positive and necessary activity.

slides 50,
Ad Reinhardt, *Collage*, 1940[65]

From the blaze of early Modernist, constructed collages in the 1940s by Ezra Pound, such as his *Cantos LII-LXXI* and this enlargement of a collage by Ad Reinhardt, as well as those earlier constructions by poets like Pierre Reverdy, Gertrude Stein and William Carlos Williams and artists like Pablo Picasso and Georges Braque. The scene was set for the accomplishments of Charles Olson and John Ashbery, Robert Rauschenberg and Jasper Johns, Grace Hartigan and Joan Mitchell, which in Britain has led to new solutions. The imperfect fit, both vulnerable and fragile, becomes a new strength.

CODA

slide 51: coda

There now follows a coda with some notes about precedents, without pretending at this stage to offer a survey. Chambers defines sonnets as poetry that is rhymed according to one or other certain definite schemes, forming an octave and a sestet, properly expressing two successive phases of one thought.[66] Their definition is made self evident in the work of Gerard Manley Hopkins.

slide 52: G.M. Hopkins, Spring, 1877[67]

In his poem *Spring*, of 1877, 135 years ago, he graphically separates the octave from the sestet and radically changes from one phase of thought into another, from 'Nothing is so beautiful as Spring' to begin the octave with, to begin the sestet in line 9, 'What is all this juice and all this joy?' Hopkins also provides a second exemplary aspect of the sonnet, not included in Chambers, which is that sonnets address love. In Hopkins this address is to love of his other, or god, demonstrated through attention to his surroundings.

I am still researching the basis for these graphical nuances. They have been made difficult by the opaque or hidden transitions from a handwritten author's text to the typesetter. In Hopkins' case this has been made even more difficult because Robert Bridges 'wrote out' Hopkins' work for the typesetter. Here, for instance, is the sonnet 'Felix Randal' by Hopkins: it is in Bridges' hand with annotations by Hopkins.

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[64] Henri Poincaré (1905) *Sur la dynamique de l'éctron* (*On the Dynamics of the Electron*), Paris: Comptes Rendus de l'Académie des Sciences, t.140, pp.1504-1508.
[65] Ad Reinhardt, collage, 1940, 25 x 44 cm (10 x 17.5"), Museum of Modern Art, New York.
[66] This description from the *Chambers English Dictionary,* put together by Thomas Davidson, John Dickie, William Geddie, Elizabeth M. Kirkpatrick and Miss A.M. MacDonald in the early twentieth century, and then renewed into a 1988 edition by George Davidson Catherine Schwarz, Anne Seaton and Virginia Tebbit.
[67] Gerard Manley Hopkins (1953) *Poems and Prose,* edited by W.H. Gardner, Harmondsworth: Penguin Books. p28.

slide 53,
Hopkins, 'Felix Randal', in Bridges' handwriting[68]

Here is the Oxford version (which is repeated in the Penguin editions) after one of Gardner's editing excursions.

slide 54,
Hopkins, 'Felix Randal', after Gardner's 1953 editing reproduced in Oxford's 1970 typesetting[69]

It is clear that an editor and reader's licence to use conventions, rather than what is written, give indications of an ongoing difficulty. But to return to the previous subject, the significant other of love in poetry is, of course, often thought of as another human. This is self-evident in twentieth century work from the sonnets of Edwin Denby, published as *In Public, In Private* in 1948 and his other subsequent sequences, to contemporary sonnets like *During an eclipse* by Elizabeth James in 2008, who continue this aspect of attention.[70] Modernist sonnets factured in the twentieth and twenty-first centuries demonstrate a paradigm shift, but not an entire loss of attention to aspects I have just mentioned. The graphic look has shifted, but most of this convention is still intact. Denby loses the graphic shift, but retains the two phases of thought. Elizabeth James retains the two phases of thought by a shift from attention to the other onto attention to her own desk, but shifts the graphic display so that line 10 breaks and the left hand alignment has two cascades to further line breaks and indentations.

The Gordon Brown Sonnets, by Anthony Mellors, pays attention to the two significant aspects of the sonnet tradition already mentioned. The twenty five sonnets that constitute the main body of the book, are each limited to fourteen lines, but do not conform to the definition offered by Chambers of octave and sestet. The twenty five sonnets are followed in the book with different attentions to the formality of the sonnet that I will leave for a future occasion. Secondly, *The Gordon Brown Sonnets* do address love, but not that of a significant other and not that of the addressee. They of course address Gordon Brown, the prime minister from 2007 and still in that position in 2009 (he held the post until 2010), and formerly the Chancellor of the Exchequer from 1997 for ten years. This is rather like John Milton's 1652 sonnet *To the Lord General Cromwell,* which itself recalls Horace's proposals to Augustus (Odes IV v 1, 5; xiv 6). This was written by Milton, in the hand of an amanuensis, in the year of his blindness and the year before Cromwell was to become, as some say, the world's first prime minister.[71]

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[68] *Gerard Manley Hopkins. Poems and Prose,* Selected and edited by W.H. Gardner (1953, 1966), Harmondsworth: Penguin Books. pp.47-48.
[69] *The Poems of Gerard Manley Hopkins,* edited by W.H. Gardner and N.H. MacKenzie, London, Oxford and New York: Oxford University Press. pp.86-87.
[70] Edwin Denby (1975) *Collected Poems,* New York: Full Court Press and Jeff Hilton (2008)(editor) *The Reality Street Book of Sonnets,* Hastings: Reality Street Editions.
[71] John Milton (1968) *Complete Shorter Poems,* edited by John Carey, London: Longman. pp323-325.

slide 55,
Anthony Mellors: The Gordon Sonnets, I, 2009

The Gordon Brown Sonnets says, 'Let minister invent/the feeble sonnet of supine content/from a mound of rubbish, now embarrass/the ones he failed to address, period.' (Mellors 2009: 13). Then after referring to the fetch of rotting silage the sonnet concludes, 'I can't begin to tell/how the rot set in, sufficient to say/the glottal stop had ceased to signify.' (2009:13).

slide 56,
Anthony Mellors: The Gordon Sonnets, XXV, 2009

In the twenty-fifth and last of the sequence, in a voice beyond that of Brown, a voice of an other, 'Do not disturb/me now, for legal reasons which cannot/be known I am unable to respond/to individual cases like my own.' (2009: 37)
The last two lines use a recurrence of the stopped short device, the imperfect fit at the ultimate conclusion of a narrative swing, beginning with three words from Edmund Spenser's *The Faerie Queene,*[72] 'Heart of flint, it all starts up to the eye/as if it had never happened. End of.' (2009:37) These abrupt stops in the text provide a considerable imperfection to the narrative drive, they do this with the effect of an enhanced æsthetic condition. But the importance doesn't conclude here.

The sonnets are not an address to love, rather they are an address to what is possible and what has been damaged by the political situation, they are, in G. M. Hopkins' sense, and in the sense of Horace and Milton, an address to the other, one might say the nation, of what love could be. Horace and Milton and Anthony Mellors address the heads of state who act as metonyms, they walk to the door of Albion, agents with the potential to change weaknesses in the current state of affairs. Their æsthetic function achieves a pertinence through the impertinence of their address. Anthony Mellors uses the impertinence of the sonnet form to carry his address, his pertinence is to make the imperfect fit avoid normalisation, in this sense, the imperfect fits of *The Gordon Brown Sonnets* achieve a new pertinence.

[72] Edmund Spenser (1909) *The Poetical Works, volume II,* edited by J.C. Smith, Oxford: Clarendon. p25.