

# Appendices:

## Appendix A: Range of subjects covered at *Diagrams*, a Biannual International Conference Series on the Theory and Application of Diagrams

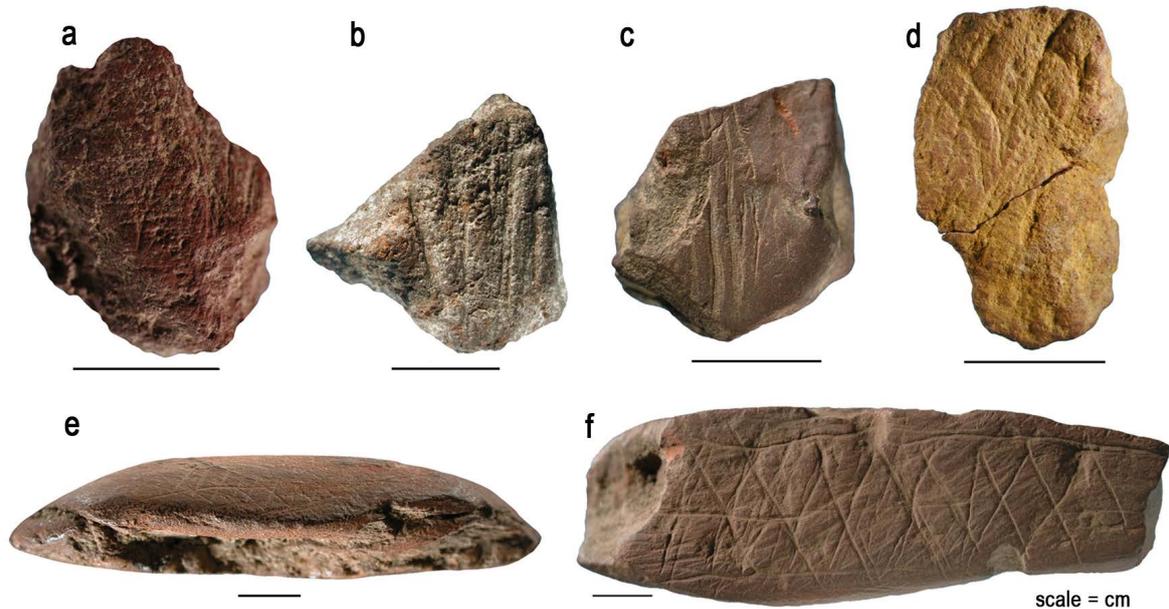
- applications of diagrams
- computational models of reasoning with, and interpretation of, diagrams
- design of diagrammatic notations
- diagram understanding by humans or machines
- diagram aesthetics and layout
- educational uses of diagrams
- evaluation of diagrammatic notations
- graphical communication and literacy
- heterogeneous notations involving diagrams
- history of diagrammatic notations
- information visualization using diagrams
- nature of diagrams and diagramming
- novel technologies for diagram use
- psychological issues pertaining to perception, comprehension or production of diagrams
- software to support the use of diagrams
- usability and human-computer interaction issues concerning diagrams



Appendix D: Chart containing examples of the variety of early diagram uses

Example	Location:	Use:	Date:
Stick Navigation charts (Rebbelib, Meddo, Mattang)	Marshal Islands	Sea faring Cartographic Navigation	c. 2000 - 500 BCE
Babylonian clay tablets	Iraq (Ancient Mesopotamia)	Recording Mathematical Notation in Cuneiform script, including geometric diagrams	c. 1900 -1700 BCE
“Book of the Dead” Papyrus scrolls of fu- nerary texts	Egypt	Depiction of complex religious beliefs and rituals relating to the afterlife	c. 1550 -50 BCE
Ugarit tablet	Syria (Hurrian Civilization)	Earliest known example of Musical notation	c. 1400 BCE
Imago mundi (Babylonian Map of the world) Clay tablet	Iraq (Ancient Mesopotamia)	Earliest known diagrammatic, labeled international map	c. 600 BCE
Huangdi Neijin (written records)	China	Chinese Medical practice of Acupuncture	c. 300 -200 BCE
Ptolemaic system	Greece	Geocentric map of the Universe	c. 140 -150 ACE
Porphyrian tree	Lebanon	Tree diagram depicting the organization of knowledge	c. 300 ACE

Appendix D:



These are engraved ochres from the Still Bay M1 phase at Blombos Cave (modified after Henshilwood et al. 2009).

This shows:

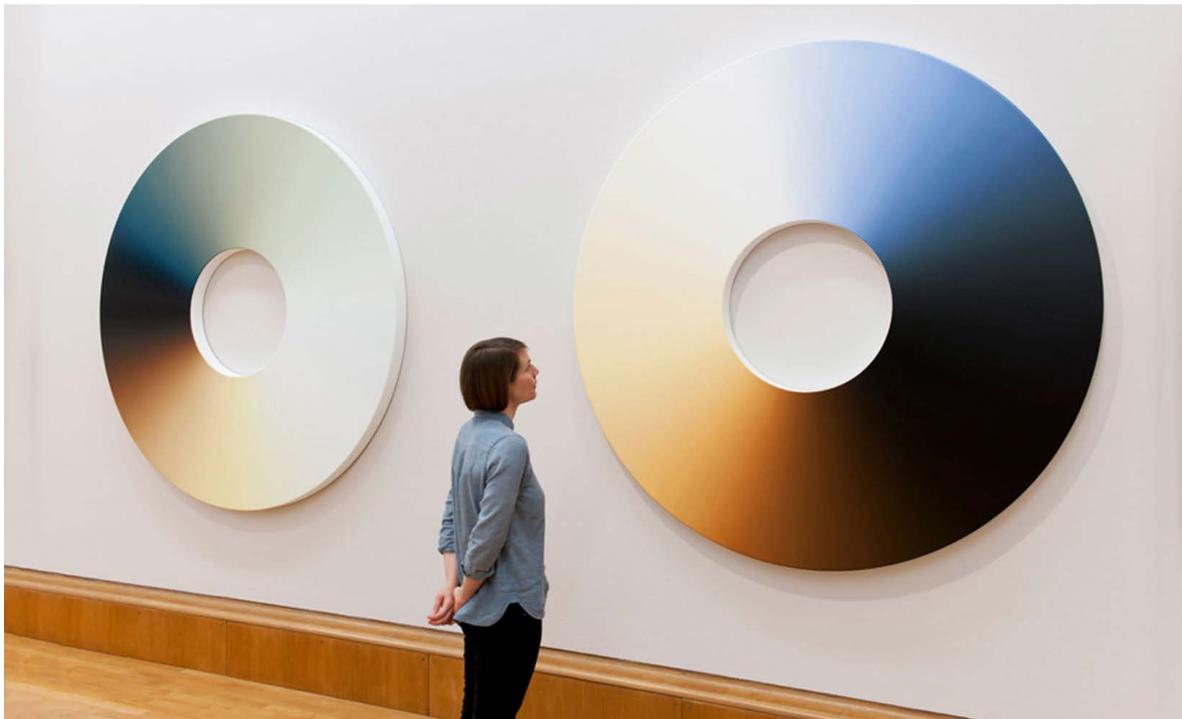
- a) Two groups of incisions, one on the center and one close to the edge. In the center two joining lines form a 'Y' that is crossed by a few perpendicular parallel lines. Three incisions cross these lines;
- b) Two lines that cross perpendicularly on the top right margin. Converging lines produced with a single lithic point;
- c) this piece retains only a small area of the original engraved pattern. Three straight oblique lines incised on the top left with two sinuous lines that cross them;
- d) three distinct sets of lines engraved on a natural surface. Piece was then knapped and a part of the engraving removed;
- e) a group of sinuous lines engraved on one face. The opposite face is highly scraped and engraved with a cross-hatched pattern; and
- f) Cross-hatched pattern incised on one long edge.

Credit: Christopher Henshilwood

Appendix F: Chart containing innovations in diagrammatic use in the Middle Ages

Use:	Location:	Example:	Date:
Astronomical Observations	Iran	Lunar Eclipse Diagrams of Abu Rayhan al-Biruni	c. 1019 ACE
Systems of Hereditary identification and social positioning	UK	Development of diagrammatic Heraldic symbolism	1127 ACE
Genealogical Documentation (family trees)	France	Genealogy of Christ Peter of Poitiers	c. 1230 ACE
Navigational Sea Charts	Italy	Carta Pisana (The chart of Pisa)	c. 1275 -1300 ACE
Scientific research in Optics	UK	Opus Maius (Roger Bacon)	c. 1267 – 69 ACE
Medieval Military Technology Designs	Italy	Texaurus Regis Francie Acquisitionis Terre Sancte de ultra mare (Guido da Vigevano)	1328 ACE
Design for an Astronomical Clock and Planetarium	Italy	Astrarium (Planetarium) (Giovani de' Dondi)	1364 ACE

Appendix G: Olafur Eliasson, Turner Colour Experiments, Tate Britain, 2014



<http://olafureliasson.net/archive/exhibition/EXH102309/olafur-eliasson-turner-colour-experiments>

Appendix H: Interview with Richard Talbot, Newcastle University, October 25th, 2013  
Interview with Richard Talbot, Newcastle University, October 25th, 2013.

MW: You originally had studied Astronomy and Physics ?

RT: I did, but realized early on that I had chosen the wrong subject. I noticed also that you had studied Biomedicine.

MW: Yes, so I was immersed in diagrams, especially Biochemistry, which as a subject deals with diagrams on many levels.

RT: Yes, when I was at school, all the chemistry diagrams and the glassware we used, I still find very exciting, it still gives me a buzz when I look at those diagrams. Also I suppose that Alchemical drawings which are in a sense diagrammatic, but which also refer to broader cultural aspects and spiritual things. But I think it is that combination of diagrammatic mixed with something else where things become very interesting.

MW: Especially for the initiated few who can decode and read the Alchemical imagery and illustrations such as those in Michael Maier's books. And you were also interested in optics and optical diagrams ?

RT: Again, I always was - by the geometric diagrams of optics: the eye, mirrors, the idea of 'looking through', I was interested by that whole system; the picture of the eye, the rays coming in to the eye, or out of the eye. I find all of those things exciting, and I think that it's because you're almost standing outside of the system, and you can see what this system is.

MW: That's something I wanted to ask you about because you had mentioned that you were interested in landscapes, and the idea that maybe the drawings you make are detached, conceptual landscapes. I remember reading to the lighthouse by Virginia Woolf, and there's a very short chapter in the middle of the book, which describes time passing in an empty room. But it does so from outside the book, an omnipotent narrator, an all seeing eye. I wondered if that was something you were interested in as an artist?

RT: Yes, I think so. I suppose maybe it's this kind of hyper-consciousness, just this thing, observing, and you just become very aware of time and space, and of yourself as a little entity within this. It's almost as if time disappears.  
The other thing I remember reading a lot as a student was Nietzsche, and the image of time as a snake eating its tail. He called it 'eternal recurrence', where you're trying to imagine that every moment could be relived exactly the same, so it kind of neutralizes time, because as animals we're stuck with this as a problem and try to find strategies to overcome that sense of things in the future and things in the past.

MW: I read that time was something that you would like to take out of your drawings, or perhaps avoid referencing in some way. Also that you presented the objects in your drawings as Platonic forms, without any signs of wear and tear or reference to scale.

RT: Yes, that's right, I started off by making objects, but always found it really frustrating in terms of size, or what you make it with. But I suppose that a lot of the twentieth century was about that problem, about objects, and their separateness to us all.

MW: Such as the use of Plinths to present work ?

- RT: Yes, for example Plinths.
- MW: So did you ever regard your sculptural works as models, as a way to perhaps overcome these issues ?
- RT: I suppose I did think of them as 3 dimensional diagrams, but then I suppose that made me unhappy about the materials they were made from. I always imagined whether perhaps it could be made out of perfect marble perhaps.
- MW: I started to consider making works from elemental materials, such as aluminium or carbon, just to try to deal with the problem of simplifying or neutralising that issue of materiality. One of the 3 dimensional works that you made called 'boat' was made out of rubber wasn't it ? Hanging as a collapses frame on the wall, the skeletal form of a boat.
- RT: Yes, it's funny that that particular series of works didn't end up going anywhere; I'm just trying to remember what the actual sequence was. I think sometime in the early eighties, I was put forward for a commission; it was one of those completely random invitations to do something. It was for the Savoy Hotel. It was one of those awkward things of, well, do you design sculpture, or do you use something you've already got? So I started playing around with drawings and making cutouts from drawings of things. I ended up with some large sheets of rubber and started cutting it out to see whether it was something I could use. I didn't intend to end up with something which would hang on the wall, but I did that in the studio by putting it to one side, and it's quite extraordinary how that works. So it was quite accidental, but was just the recognition of having taken it in to that different area that I didn't have any control of, so it was quite accidental. It was all cut by hand, so it was a very crisp line cut with a scalpel.
- MW: About your working process, you wrote very beautifully about that initial process of orientation, the initial white sheet that you approach, and the infinite possibilities you're faced with - setting up some kind of initial starting conditions. You used the analogy of the Gothic Cathedral with its ground plans, and then the more organic process of construction that follows that. There was also another article in the same book (Writing on Drawing: Essays on Drawing Practice and Research) by Terry Rosenberg about ideational drawing, a process of drawing which I thought really suited your work very well.
- RT: Yes, I mean I must say that I haven't read fully all of the articles in that book, but have skimmed through them.
- MW: There were a couple of essays that really stood out for me personally, yours and Terry Rosenberg's. I enjoyed the way you talked about your use of perspective, not as a tool to create realistic drawings, but as a tool to allow you to use your intuition.
- RT: Well I think that also goes back to that idea of self-consciousness, sort of knowing that you're this entity that looks at something from the outside. I used to play around with spatial perspectives, and then I thought that actually one way of neutralising these issues was just to use it, just to actually use the system. So that to get over that whole issue of viewpoint, for example when you make a piece of sculpture, how do you look at it ? If there's no best side as it were. So I thought, well if I just take it on full, this issue of perspective, and to absolutely use it as it was set up to use, then it falls by the way side, as an issue.
- MW: Turning the problem in to part of the solution?

- RT: I think it's like sometimes in Mathematics, when a problem can't be solved directly, they will call on a tool from other part of mathematics, and using that tool they can then move from one place to another. But in the end result, that tool disappears, it doesn't ultimately play a part in the answer, but it has been a useful tool to get you from one place to another.
- MW: That reminds me of the role enzymes play in Biochemistry. They're completely essential to facilitating the process, but don't take part in a reaction in a way that they are altered themselves in the outcome.
- RT: Yes, that's right, yes. So it is a kind of a vehicle, but then it's using that perspective that makes me then question how it was originally used in the Renaissance, because when you're actually working with it on the paper, there are so many interesting things actually going on that art historian looking in from the outside wouldn't grasp. And it is to do with that idea of play, between the diagrammatic and the spatial element. Perspective isn't all about creating a space, it is about the surface and how these things operate 2 dimensionally as well.
- MW: I was very interested in the way you talked about the depth of space in your drawings, and not using deep space, but keeping things relatively shallow and immediate.
- RT: Yes, I think that this also relates to my sense of what these Renaissance artists were doing. The picture that is portrayed of perspective is all about getting everything in terms of the horizon. But I don't actually think that's it at all. You are really working in a really shallow space. All those Renaissance paintings are also working in a really shallow space, and I think when you're actually constructing that on the paper, there's a real, almost physical connection to the space.
- MW: I don't normally use colour in my work, it's actually something I avoid, and have for a long time. Then I came across a book by David Batchelor called Chromophobia. He was writing about colour and how it has been perceived as the additional, the exotic, the lipstick. Or at least that's how it was regarded by artists and writers who saw it as extraneous. And so I'm interested to ask you how you deal with colour in your work.
- RT: Well I have to admit as to having always avoided it, as I've never understood it. It's a complete mystery. If I was making a drawing, I can't see any reason to use colour. But then equally I probably can't see any reason not to use it. But then I would probably be thinking well, why do I? But then I know with somebody like Michael Craig Martin, I suppose he's somebody in the seventies who was producing very austere, paired down work, such as his linear drawings, which were initially all black and white. But then he probably just stopped worrying and started to use incredibly strong colours in his work. And now the colour is really significant to his work. But its interesting that Michael Craig Martin was taught by Joseph Albers.
- MW: That's interesting, I didn't know that.
- RT: Yes, at Yale. So he would have had a real grounding in colour, and it's almost as if he, you know – 30 years later or whatever it was – just decided to start using these colours. It is odd how we set rules for ourselves and at the time we kind of need them, but occasionally we just think 'drop them', and stop worrying about them.
- MW: There were a number of times when looking at your works and reading what you wrote about

them that reminded me of mathematics, and the idea of skeletonized forms.

The idea of an equation, where the aim is to remove as much information as possible and leave only the knowledge - the process of essentialising something. Also the way that you talk about using intuition, and how intuition can be very immediate, or how it can require you to put the work away for many years. A slow boiler that you come back to much later.

Is mathematics something you're interested in? Or is it restricted to geometry, or patterns of thought?

RT: Yes, I'm interested, not in the sense of reading books on mathematics, but when I'm near mathematicians and they talk about what they are doing, I do feel an affinity with what they are doing, and I suppose that with my drawings, they become very complex, but I do have that hankering after something really, really simple. I do have this idea that one day I'll just be able to draw a line, and that that will be the finish! And in a way I suppose you do occasionally see it in some art works - and think that that is just an extraordinary piece of drawing, but then that in a way embodies everything they've ever done - 40 years later they've managed to make this extraordinary thing !

MW: Richard Dawkins wrote a while ago about the idea of a conceptual space containing all possible genetic variations, a kind of hyper-space of all possible genetic forms, and I was always fascinated by that idea. I think that also Douglas Hofstadter in *Goedel Escher Bach*, described the idea that Bach, in composing, had the ability to look over all the millions, well almost infinite combinations of musical notes, and was able to see patterns, islands or constellations of musical forms. And I wondered if that idea was perhaps something you were interested in. A vaguely discernable, fuzzy possibility of the form you're searching for, and how this idea relates to diagrammatic forms.

RT: Yes, I think that is definitely true, and I suppose that one of the things I am aware of is that in some ways, the drawings all start from the same point. That blank paper, that orientation.

MW: The tabula-rasa ?

RT: Absolutely, and you know that it could go in a completely infinite number of directions, and yet there is a sense that there is some solution there - that you setting things up. It becomes very obvious sometimes. I wouldn't compare myself to Bach, but I can see that way of thinking - that there is an infinite number of possibilities, but you alight on a particular form that is true for you in one sense or another. It's hard to really articulate that process.

MW: How would you describe the relationship between the forms in your drawings and the marks which make up the background from which the image appears ?

RT: I think when I first started using perspective I was still in that mindset of drawing objects as things in space, but then quite quickly I became aware of how potent the workings-out - you know, the plans, the elevations and so on - how potent they were and how they were working with the kind of forms which were being described. It was also in trying to pin things down, I became aware of the balance between leaving things open ended and tying something down and saying 'this is that form'. It was that form, but not in such a positive or fixed way. I stopped using ink on the drawings. I was using ink to go around the forms I was building, but that stopped. And so I started getting a much more subtle interplay between the workings out -and those workings out would be the plans, and elevations, and a myriad of other kind of connections which were being built, a kind of scaffolding.

MW: And you saw inking in as a kind of finishing process ?

RT: I did. You know you suddenly think that it has in a way killed off the drawings.

Not inking became a way to leave the drawing as an open-ended thing. Perhaps when a work is too 'closed down' it can end up being very uninteresting. For example Raphael. I've never enjoyed looking at Raphael's paintings because they seem so overly fixed, whereas, Piero de la Francesca's paintings seem almost as if they are propositions.

MW: Very early on in coming up with the questions that I wanted to ask in my PhD, I pretty much hit the same problem you did in realizing that I had always studied sculpture, but always made drawings. And I thought of the drawings as sculptural drawings and, luckily for me, my teachers at the time thought the same. So I had to decide whether to investigate the relationship between 2D and 3D diagrams - and thus include sculpture, or the way in which artists use diagrammatic image making to a romantic end, a subjective end; the way in which Marcel Duchamp played subject against object and also struggled with the issues of dimensionality. Where do you stand in terms of subject and object ?

RT: Yes, well I don't think I would come down either way, because I don't think that coming down on either side actually gets you anywhere. I suppose that in my student days, this dilemma about the objective and subjective was helped by there being, at Goldsmiths - which was something which was great about Goldsmiths at that time - was that there was a huge range of practice within the staff. So you did have conversations with people who were systems thinkers, right through to people who were watercolour, or landscape painters. People weren't trying to ram the stuff down your throat; you were just having these interesting conversations, and then weighing it up about your own situation.

Thinking about what you were doing, what you thought you were trying to do, what you were actually doing ! You know, all those worries you have about, you know, 'is it art ?' I found myself really being able to make work when I stopped worrying about what side of the fence I was on, and finding a way of working where I felt as if I wasn't having to choose one way or the other. But both sides of me could be involved in that hankering after perfection. It's a case of playing these things off against each other.

I distinctly remember that when I did my MA at Chelsea, the external assessor we had was Paul Neagu, I think he's dead now, but he was very well known. He was one of the artists who Richard Demarco brought to this country, alongside such artists as Joseph Beuys. Anyway I remember that the work I'd made at Chelsea had become really quite austere, and extremely minimal, and he said... 'don't forget the other side of yourself', and I realized exactly what it was he meant. That we can easily kind of forget. But then I think that also we need those extremes sometimes, to realize something. We need to go beyond in order to know where the edge was. It's only when you fall over the edge that you realize there was one !

MW: So there is actually nothing within your body of work that you see as a mathematical proof, some foundation to build upon ?

RT: No, I would certainly never say that there is anything that I'm demonstrating that is mathematical, no. I could say that when I was at Goldsmiths, I was taught by people who were involved in systems, and there were several people I knew, for example Malcolm Hughes working at the Slade, who had students working with experimental systems, building computers to generate paintings and so on; and I always felt that there was a problem in that they knew the kind of thing they were aiming for, and that it just seemed as if, well, you could make that painting without that system. It was almost as if they were using that system as almost a 'get out'. The paintings would always end up looking like lots of other abstract constructive paintings that weren't made with a system, that were just made purely intuitively. And so I have a distrust of the idea of a system, and I think that that system is always, ultimately being driven by you.

MW: What are you working on at the moment ?

RT: Well apart from being heavily tied up in administration, I've finished some drawings and I've also been playing with film and video, which I can show you if you want.

It's very long drawing, based on a system in a sense, and was a definite play on the standard idea of a single viewer's perspective. They start with a really basic perspective grid, a 'unit', drawn in such a way that I can simply add these units together and extend the space in any direction. Strangely, it adds the possibility of time, in that your eye can travel along the drawing and the space continues always to make sense.

The video is another simple grid that is constantly shifting from the 2 dimensional surface in to the 3 dimensional image. Originally I had intended it to be projected on to a screen, but then I had the chance to project it in one of the large spaces downstairs, and the results were quite extraordinary - because it did actually become part of the space, which wasn't fully intentional, but those were the results. The question of the artist's intention is also an interesting problem I think within the history of perspective; the well-known analyses of key renaissance paintings demonstrate that the spaces in the paintings are sometimes not quite what they seem to be. There is often some uncertainty, yet it is usually thought that perspective is fixed - that it's an unambiguous and rational thing.

MW: Watching the video is like a trying to solve a puzzle in perspective, there are moments when the lines are like a 2 dimensional pattern of shifting compositions, and then suddenly something in the visual cortex takes over and there's the impression of instant depth from those very same lines. It reminds me of watching animations of higher dimensional cubes rotating. You think you have understood what is happening and there's a sudden unexpected shift, you have to grapple with different kinds of depths.

RT: Well - I don't know - It's to do with my intention, I'm not settling down to produce something which has a specific result. I know they do result in that, but I'm not setting out to do that. I am showing this work - I've never tried it before. I hope it works... It's actually going to be projected on to three screens, the same image, butted up against itself, but slightly out of synch. So the whole thing will be 'shifting', so that a more complex thing will be going on. I have no idea what it will look like - it might just look awful, but then I'm trying it - for this show.

Appendix I: Leonardo da Vinci, Profile of a Man, plant, geometric figures etc. (also known as the 'Theme Sheet') (detail) c. 1448, pen and ink, Windsor Castle, The Royal Collection.



Associated text:

“The triangle abc is similar to a third of the large triangle dbf because it is made up of two equal parts, that is abe and bec, and the large triangle is made up of 6 parts, and each of these parts is equal to each of the said 2, and the 6 parts are these: dec and ced and so on, in similar parts. And if the triangle abc had its sides similar to its axis, cb, the triangle dbf would receive in itself 4 of these triangles, whereas at present it receives 3; thus to see the difference from one of the triangles which are  $\frac{1}{4}$  of the large one and one of those which are  $\frac{1}{3}$ , have the large triangle divided in to twelfths, and say that it is 12 twelfths. Then say that the triangle which is a  $\frac{1}{3}$  of it is 4 of these twelfths and the triangle that is a  $\frac{1}{4}$  of this large one contains three of these twelfths, so that the difference between 4 and 3 is one twelfth, whence we can say that the smaller is  $\frac{3}{4}$  of the larger.”

Appendix J: Examples of 'low noise' landscapes, which act to highlight objects placed with in them phenomenologically.

(Inner city wastelands, sparse wastelands and deserts act as 'grounds', whilst island archipelagos, golf courses and farmed landscapes act as diagrammatic scenes of containment, navigation and connection.)



Inner city wasteland



sparse wastelands



Desert



Island Archipelagos



Golf Courses



Farmed Landscape

Appendix K: Caspar David Friedrich (German, 1774 – 1840),  
*Zwei Männer Betrachten den Mond*  
(*Two Men Contemplating the Moon*),  
c.1833, Oil on Canvas, 34 x 44 cm.



Appendix L: Théodore Rousseau, *A Clearing in the Forest of Fontainebleau*,  
c. 1860-62, Oil on Canvas, 82.6 x 145.4 cm

Note: The presence of a single figure is indicated at the end  
of the path using single dots of red and white paint, so that they  
appear as just having emerged from or about to enter the forest.



Appendix M: Russell Gray and Quentin Atkinson,  
*The shape and Fabric of Language evolution*

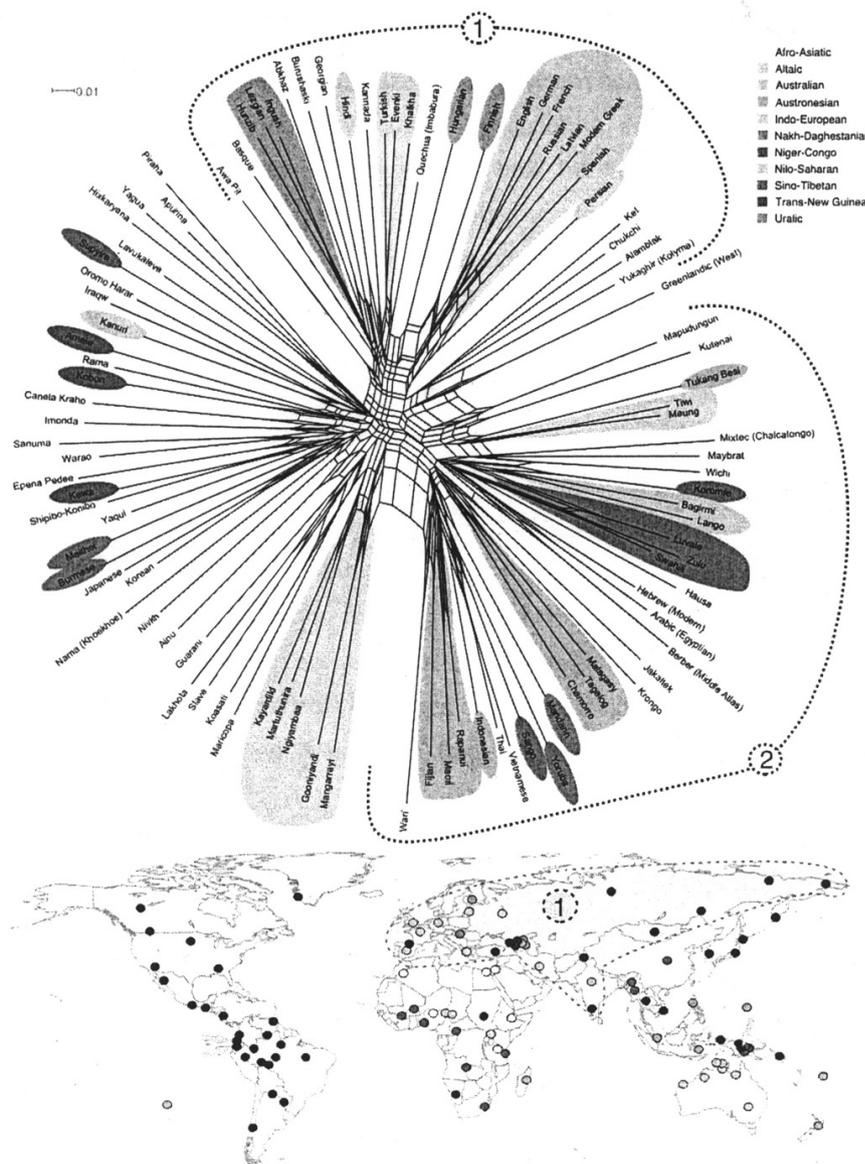
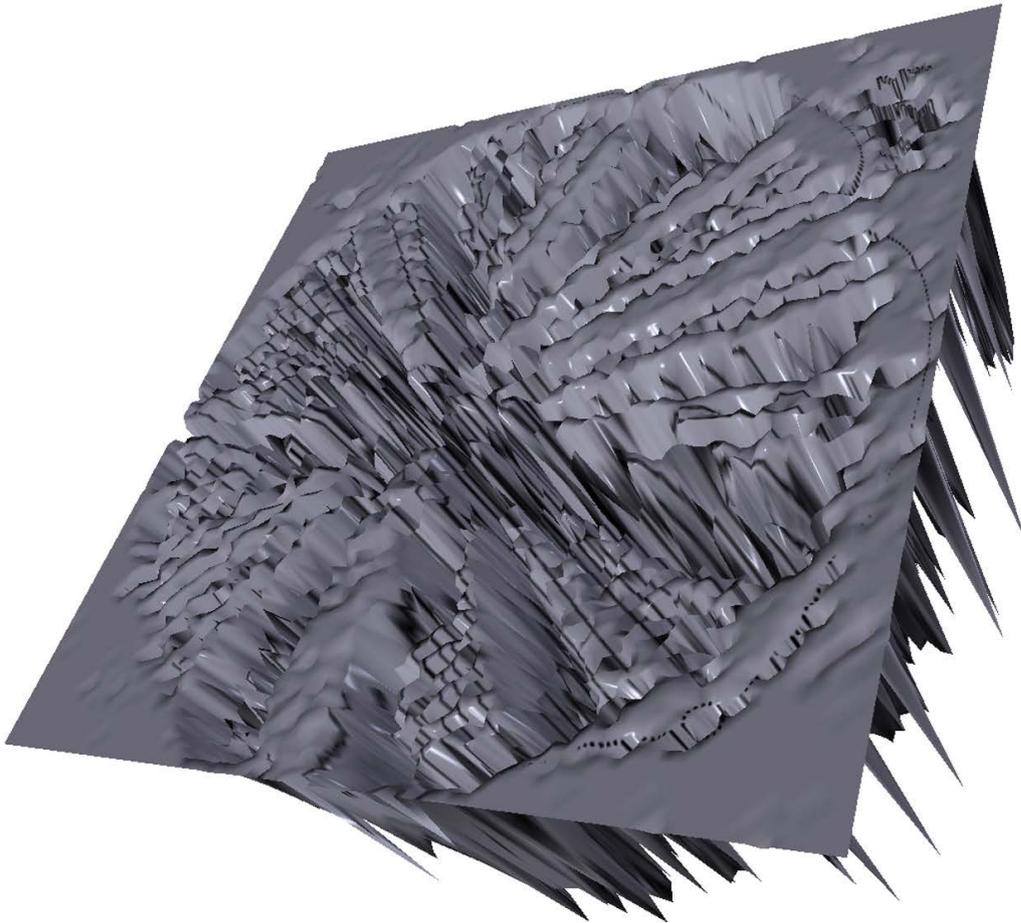


Figure 1: NeighborNet for the 99 most well-attested languages in the WALS database. This network is based on 138 typological characters and shows the signals grouping languages. The length of the branches on the network are proportional to amount of divergence between languages, and the box-like structures reflect conflicting signal. Family groups are color-coded, and potential language areas are marked with dashed lines and numbered as described in the text. The dashed area and arrows on the map show the extent of the third Eurasian cluster.

*The shape and fabric of language evolution*



Appendix O: Muerte (Death) by the Spanish surrealist poet Federico García Lorca

Source: Lorca, F. G. In: (2002) Poet in New York. Maurer, C. (Ed.) Simon, G. White, S. F. (transl.) London: Penguin Classics.

Muerte (Death)

How hard they try !  
How hard the horse tries to become a dog !  
How hard the dog tries to become a swallow !  
How hard the swallow tries to become a bee !  
How hard the bee tries to become a horse !  
And the horse, what a sharp arrow it presses from the rose,  
what a pale rose rising from its lips !  
And the rose, what a flock of lights and cries  
knotted in the living sugar of its trunk !  
And the sugar, what daggers it dreams in its vigils !  
And the daggers, what a moon without stables, what nakedness,  
eternal and blushing flesh they seek out!  
And I, on the roof's edge, eternal and blushing angel I look for and am !  
But the plaster arch, how vast, how invisible, how minute,  
without even trying !

Appendix P: Reiner Maria Rilke, Opening to Duino Elegy Nine:

Source: Rilke, R.M. (1923) Duino Elegies, Young, D. (transl.) (1993)  
New York: WW Norton & Co.

Why, if it could begin as laurel, and be spent so,  
this space of Being, a little darker than all  
the surrounding green, with little waves at the edge  
of every leaf (like a breeze's smile) - : why then  
have to be human – and shunning destiny  
long for destiny?....

Oh, not because happiness exists,  
that over-hasty profit from imminent loss,  
not out of curiosity, or to practice the heart,  
which could exist in the laurel.....  
But because being here is much, and because all  
that's here seems to need us, the ephemeral, that  
strangely concerns us. We: the most ephemeral. Once,  
for each thing, only once. Once, and no more. And we too,  
once. Never again. But this  
once, to have been, though only once,  
to have been an earthly thing – seems irrevocable.

Appendix Q: Black and white photographs of a wooden figure, taken as ethnographic documentation of religious artifacts from the collection of Hoshinomiya Temple in Gifu Prefecture, Japan, dating from Showa period 42 / 1967.  
(From the Artists own collection – original photographer unknown)



Appendix R: T.S. Elliot, Gerontion

Source: Poems, by T. S. Eliot, New York: A.A. Knopf, 1920.

*Thou hast nor youth nor age  
But as it were an after dinner sleep  
Dreaming of both.*

Here I am, an old man in a dry month,  
Being read to by a boy, waiting for rain.  
I was neither at the hot gates  
Nor fought in the warm rain  
Nor knee deep in the salt marsh, heaving a cutlass,  
Bitten by flies, fought.  
My house is a decayed house,  
And the Jew squats on the window sill, the owner,  
Spawned in some estaminet of Antwerp,  
Blistered in Brussels, patched and peeled in London.  
The goat coughs at night in the field overhead;  
Rocks, moss, stonecrop, iron, merds.  
The woman keeps the kitchen, makes tea,  
Sneezes at evening, poking the peevish gutter.

I an old man,  
A dull head among windy spaces.

Signs are taken for wonders. 'We would see a sign!'  
The word within a word, unable to speak a word,  
Swaddled with darkness. In the juvescence of the year  
Came Christ the tiger

In depraved May, dogwood and chestnut, flowering judas,  
To be eaten, to be divided, to be drunk  
Among whispers; by Mr. Silvero  
With caressing hands, at Limoges  
Who walked all night in the next room;

By Hakagawa, bowing among the Titians;  
By Madame de Tornquist, in the dark room  
Shifting the candles; Fräulein von Kulp  
Who turned in the hall, one hand on the door.

Vacant shuttles  
Weave the wind. I have no ghosts,  
An old man in a draughty house  
Under a windy knob.

After such knowledge, what forgiveness? Think now  
History has many cunning passages, contrived corridors  
And issues, deceives with whispering ambitions,  
Guides us by vanities. Think now  
She gives when our attention is distracted  
And what she gives, gives with such supple confusions  
That the giving famishes the craving. Gives too late  
What's not believed in, or is still believed,  
In memory only, reconsidered passion. Gives too soon  
Into weak hands, what's thought can be dispensed with  
Till the refusal propagates a fear. Think  
Neither fear nor courage saves us. Unnatural vices  
Are fathered by our heroism. Virtues  
Are forced upon us by our impudent crimes.  
These tears are shaken from the wrath-bearing tree.

The tiger springs in the new year. Us he devours. Think at last  
We have not reached conclusion, when I  
Stiffen in a rented house. Think at last  
I have not made this show purposelessly  
And it is not by any concitation  
Of the backward devils.  
I would meet you upon this honestly.  
I that was near your heart was removed therefrom  
To lose beauty in terror, terror in inquisition.  
I have lost my passion: why should I need to keep it  
Since what is kept must be adulterated?  
I have lost my sight, smell, hearing, taste and touch:  
How should I use it for your closer contact?

These with a thousand small deliberations  
Protract the profit of their chilled delirium,  
Excite the membrane, when the sense has cooled,  
With pungent sauces, multiply variety  
In a wilderness of mirrors. What will the spider do  
Suspend its operations, will the weevil  
Delay? De Bailhache, Fresca, Mrs. Cammel, whirled  
Beyond the circuit of the shuddering Bear  
In fractured atoms. Gull against the wind, in the windy straits  
Of Belle Isle, or running on the Horn,  
White feathers in the snow, the Gulf claims,  
And an old man driven by the Trades  
To a sleepy corner.

Tenants of the house,  
Thoughts of a dry brain in a dry season.

## References

1. Robey, D. (1962) Introduction to: Eco, U., *Opera Aperta*, rev. 1976 – English translation: *The Open Work* (1989), translated by Anna Cancogni, Harvard University Press (Cambridge, Massachusetts), p.xiii.
2. Stjernfelt, F. (2007) *Diagrammatology: An Investigation on the Borderlines of Phenomenology, Ontology and Semiotics*. Springer: Dordrecht, Heidelberg, London New York.
3. Bacon, F., Sylvester, D. (1975) *The Brutality of Fact, Interviews with Francis Bacon*. London: Thames and Hudson. p.56.
4. Williams, W.C. (1938) A note on Poetry. In: Seldes, G. (2011) *Great thoughts, revised and updated*. U.K.: Ballentine Books.
5. Pliny the Elder, *Natural History*, Book XXXV, Chapter 15, Full text Online: <https://archive.org/details/plinysnaturalhis00plinrich> [Accessed Sept 27th, 2014].
6. Wood, C. (2005) Review of *Silhouettes*, The National Portrait Gallery, London. U.K. In: *Frieze Archive*, Issue 90, April. Online: <http://www.frieze.com/issue/review/silhouettes/> [Accessed: October 20th, 2014].
7. Eco, U. (1962) *Opera aperta*, rev. 1976 – English translation: *The Open Work* (1989), introduction, Harvard University Press (Cambridge, Massachusetts).
8. Barthes, R. (1980) *The Plates of the Encyclopedia*. In: Roland Barthes, *New Critical Essays*, Howard, R. (transl.) New York: Hill and Wang.
9. Deleuze, G. (2003) *Francis Bacon: The Logic of Sensation* Smith, D. W. (trans) London: Continuum.
10. Knoespel, K. (2001) Diagrams as piloting devices in the work of Gilles Deleuze, in *Littérature, Théorie, Enseignement*, No.19, p.146.
11. Wallenstein, S-O. (2009) *Diagrams of the mind*, published in: *Lost between the Extensivity – Intensity Exchange – Warren Neiderich*, (Eindhoven: Onomatopée).
12. Garcia, M. (Ed.) (2010) *The Diagrams of Architecture*, UK: John Wiley and Sons
13. Sylvester, D Bacon, F. (1980- revised edition) *Interviews with Francis Bacon*. London: Thames and Hudson.
14. Deleuze, G. (2003) *The Logic of Sensation*. Bloomsbury Academic Press, p.158.
15. Elkins, J. (1999) *The Domain of Images*. New York: Cornell University Press, p.213.
16. Marrinan, M, Bender, J. (2010) *The Culture of Diagram*, Stanford University Press. p.7
17. Knoespel, K. (2002) Diagrammatic transformation of architectural space. *Philosophica* 70, p.11-36.
18. Marrinan, M, Bender, J. (2010) *The Culture of Diagram*, Stanford University Press. p.7
19. Archibald, S. (2008) *Ways of Seeing*. *Cabinet Magazine*, Issue 30, The Underground Summer. Online: <http://www.cabinetmagazine.org/issues/30/archibald.php>

- [Accessed: 22 Sept. 2014].
20. Yarbus, A. L. (1967) *Eye Movements and Vision*. New York: Plenum Press. (Translated from Russian by Basil Haigh. Original Russian edition published in Moscow in 1965).
  21. Joyce, J. (1921) in a letter to Frank Budgen, February 28, 1921, In: Jin, J. *The Physics of Voice in Joyce's "Ithaca"*, *Joyce Studies Annual*, p.238-251 (2013).
  22. Ibid.
  23. Joyce, J. (1921), Online: On this day... 25th November, Online: <http://jamesjoyce.ie/on-this-day-25-november/> [Accessed: 5th September, 2014].
  24. Hays, I. (2008) A Dedication and Tribute to Donald F. Theall. *Joyce, Duchamp, and McLuhan. Hypermedia Joyce Studies*, 9, ii (August - September 2008). Online: [http://hjs.ff.cuni.cz/archives/v9\\_2/main/essays.php?essay=hays](http://hjs.ff.cuni.cz/archives/v9_2/main/essays.php?essay=hays) [Accessed: 8th September, 2014].
  25. LeWitt, S. and Miller Keller, A. Excerpts from a Correspondence, 1981–1983. In: Suzanne Singer (Ed.), *Sol LeWitt wall drawings, 1968 – 1984*. Amsterdam: Stedelijk Museum, Eindhoven: Van Abbemuseum, Hartford: Wadford Atheneum, 1984. p.18-25.
  26. Pike, A.W.G. et al (2012) U-Series Dating of Palaeolithic Art in 11 Caves in Spain, *Science*, Vol. 336, 15 June, p.1409-1413.
  27. Von Petzinger, G. (2010) *New Scientist*, 20 February, p30.
  28. Knoespel, K.J. (2002) Diagrammatic Transformation of Architectural Space. *Philosophica* 70, p.25.
  29. Pilar Utrilla et al. (2009) A Paleolithic Map from 13,660 cal BP: Engraved Stone Blocks from the Late Magdalenian in Abauntz Cave (Navarra, Spain), *Journal of Human Evolution* 57, p.99–111.
  30. Knoespel, K.J. (2002) Diagrammatic Transformation of Architectural Space. *Philosophica* 70, p.24.
  31. Clive Ruggles and Michel Cotte (ed.), *Heritage Sites of Astronomy and Archaeoastronomy*. ICOMOS and IAU, Paris, 2010.
  32. Johnson, A. (2008) *Solving Stone Henge: The new key to an ancient enigma*. London: Thames and Hudson, p.8 .
  33. Ibid. p.181.
  34. Turrell, J. *Occluded front*, MOCA, Online: <http://rodencrater.com/about> [Accessed: 10th October, 2014].
  35. Turrell, J.(2009) *Edizione Charta*, Fundacion NMAC. Online: <http://rodencrater.com/about> [Accessed: 10th October, 2014].
  36. Hylton, W.S. (2013) How James Turrell Knocked the Art World Off Its Feet, In: *The New York Times, Magazine*, July 13. Online: <http://www.nytimes.com/2013/06/16/magazine/how-james-turrell-knocked-the-art-world-off-its-feet.html> [Accessed: 13 October, 2014].
  37. Turrell, J. (date unknown) Interview with Michael Govan. Online: <http://www>.

- interviewmagazine.com/art/james-turell#\_ [Accessed: 4th October, 2014]
38. Evans, M.W. (1980) *The Geometry of the Mind*, Architectural Association Quarterly 12.4: p.32–55.
  39. Holcomb, M. and Bessette, L. (2009) *Pen and Parchment: Drawing in the Middle Ages*. New York: Metropolitan Museum of Art, p.154
  40. Carruthers, M. (2008) *The Book of Memory: A Study of Memory in Medieval Culture*, (Cambridge University press) p.336.
  41. Whittington, K. (2009) Opicinus de Canistris, Vatican Library Pal. Lat. folios2v, 20r, 24r. In: Holcomb, M. and Bessette, L. (Eds) *Pen and parchment: drawing in the middle ages*. The Metropolitan Museum of Art (2009, Yale University Press), p.148-55.
  42. Ibid.
  43. Franklin, J. (1999) Diagrammatic reasoning and modeling in the imagination: the secret weapon of the scientific revolution, In *1543 and All that: Image, Word, Change and Continuity in the Proto-Scientific Revolution*, ed. G. Freeland and A. Coronos (Dordrecht), p.53-115.
  44. Kemp, M. (2007) *Leonardo da Vinci: Experience, Experiment and Design*. London: V&A Publications. p.14.
  45. Ibid, p.16.
  46. Ibid, p.23.
  47. Ibid, p.18.
  48. Da Vinci, Leonardo, quoted in: Kemp, M. (2007) *Leonardo da Vinci: Experience, Experiment and Design*. London: V&A Publications. p.96.
  49. Obrist, B. (2003) Visualisation in Medieval Alchemy, *HYLE--International Journal for Philosophy of Chemistry*, Vol. 9, No.2 (2003), p. 131-170. Online: <http://www.hyle.org> [Accessed: 28 September, 2014]
  50. Roob, A. 2005, *The Hermetic Museum: Alchemy and Mysticism*, Köln: Taschen. p.11.
  51. Einstein, Albert (1954). *Ideas and Opinions*. translated by Sonja Bargmann. London: Crown Publishers. p.271.
  52. Hawking, Stephen (1988). *A Brief History of Time*. New York: Bantam Books. p.179.
  53. Bender, J., Marrinan, M. (2010) *The Culture of Diagram*, California: Stanford University Press. p.72.
  54. Barthes, R. (1980) *The Plates of the Encyclopedia*. In: Roland Barthes, *New Critical Essays*, Howard, R. (transl.) New York: Hill and Wang.
  55. Bender, J., Marrinan, M. (2010) *The Culture of Diagram*, California: Stanford University Press. p.10.
  56. Dawkins, R. (2006) *Unweaving the Rainbow: Science, Delusion and the Appetite for Wonder*, London: Penguin Books. p.232.
  57. Snow, C.P. (1959) *The Two Cultures*. Oxford: Oxford University press.

58. Bérubé, M. (2006) *Rhetorical Occasions, Essays on humans and humanities*. University of North Carolina Press.
59. Bloom, A. (1968) *The Republic of Plato*, translated with notes and an interpretive essay. New York: Basic Books. p.607, b5–6.
60. Amrine, F. (1998) *The Metamorphosis of the scientist*. In: *Goethe's way of Science, A Phenomenology of Nature* (1998) Seamon, D., and Zajonc, A. (Eds). New York: State University of New York Press. p.40.
61. Ibid.
62. Sepper, D.L., *Goethe's Querelles and the Formation of Scientific Character*, Online: [http://fundacionorotava.org/archivos%20adjuntos/publicaciones/otros\\_idiomas/ingles/Romanticismo/Sepper\\_GoetheQuerelles.pdf](http://fundacionorotava.org/archivos%20adjuntos/publicaciones/otros_idiomas/ingles/Romanticismo/Sepper_GoetheQuerelles.pdf). [Accessed: September 10th, 2014]
63. Goethe, quoted in: Zajonc, A. (1998) *Goethe and the science of his time*. In: *Goethe's way of Science, A Phenomenology of Nature*. Seamon, D. and Zajonc, A. (Eds) p. 25.
64. Ibid. p.26.
65. Kwinter, S. (1998) *The Hammer and the Song*. In: *OASE* no. 48. p.31 – 43.
66. Goethe, *Italian Journey, Naples, 17th May, 1787, Hamburger Ausgabe, (XI:323)* Quoted in: Amrine, F.(1998) *The Metamorphosis of the scientist*. In: *Goethe's way of Science, A Phenomenology of Nature* (1998) Seamon, D., and Zajonc, A. (Eds). New York: State University of New York Press. p.39 – 40.
67. Bender, J., Marrinan, M. (2010) *The Culture of Diagram*, California: Stanford University Press. p.54.
68. Duchamp, M. In: Sweeney, J.J. (1946) *Eleven Europeans in America: Marcel Duchamp*. *Museum of Modern Art Bulletin* 13, p. 19-21.
69. Weisberg, M., in conversation with Roy Sorensen. In *Idealization and Scientific Realism*, 2013, (<https://www.youtube.com/watch?v=GFDIlyzP-4>) [Accessed: 4th August, 2014]
70. Manders, M. (2002) *Art work Caption*, Online: <http://www.markmanders.org/exhibitions/documenta-11/kitchen-reduced-to-88-2002-1/> [Accessed: 4th August, 2014]
71. Unknown author, (2004), *Display caption for Linear Construction Number 2*. Online: <http://www.tate.org.uk/art/artworks/gabo-linear-construction-no-2-t01105> [Accessed 2nd September, 2014]
72. Gabo, N. Quoted in: Nash, S.A. and Merkert, J. (eds.), *Naum Gabo: Sixty Years of Constructivism*, exhibition catalogue, Munich 1985, pp.223-4 (note 41.5)
73. Markus, R. *Giacometti's The Palace at 4 A.M. (1932-33) as a Stage Design*. *Scenography International*, Issue 8
74. Giacometti, A. 1933, *Le palais a 4 heures, Minotaure*, No. 3/4 Paris, p.46.
75. Giacometti, A. Quoted in: Krauss, R. Krauss, Rosalind E. (1981) *Passages in Modern Sculpture*. MIT Press

76. Lord, J. 1986, *Giacometti*, London, Boston, p.146.
77. Nesbit, M. (1991) *The Language of Industry*. In: *The Definitely Unfinished Marcel Duchamp*. De Duve, T. (Ed.) Massachusetts: Cambridge: The MIT Press, 1991. pg.356.
78. *Ibid.* p.358.
79. *Ibid.* p.372.
80. Duchamp, M. (1953) Interview with Dorothy Norman, first published in *Art in America*, vol.57, July-August 1969, p.38
81. Duchamp, M. In: Schwarz,A. (1997) *The Complete Works of Marcel Duchamp*, revised and expanded edition, New York, p.573.
82. Duchamp, M. In: Ades,D., Cox,N., Hopkins,D. (1999) *Marcel Duchamp*, London 1999, p.75.
83. Matisse, H. In: Ashton, D. *About Rothko* (1983) *Da Capo*. p.114.
84. Plato, *Paedrus* (Online Edition) *Plato in Twelve Volumes*, Vol. 9 translated by Harold N. Fowler. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1925. Section 265e. Online: <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0174%3Atext%3DPhaedrus%3A-section%3D265e> [Accessed: 10th September, 2014]
85. Binswanger, Harry. 1989. *Consciousness as Identification* (audiotape set). Second edition. Second Renaissance Books/Ayn Rand Bookstore.
86. Brebbia, C. A.; Greated, C.; Collins, M. W. (1 January 2011). *Colour in Art, Design & Nature*. WIT Press. p.52–3.
87. Chandler, D. (1994) *Semiotics for beginners*. Online: <http://visual-memory.co.uk/daniel/Documents/S4B/> [Accessed: 12th September, 2014]
88. Beltran, E. (2014) *Labor*, Online: <http://www.labor.org.mx/wp-content/uploads/downloads/2014/02/ERICK-BELTRAN-feb-2014.pdf> [Accessed: 4th August 2014]
89. Gerner, A. (2011) *Diagrammatic Thinking*, Online: <http://monumenttotransformation.org/atlas-of-transformation/index.html> [Accessed 12th September, 2014]
90. Lyotard, J.F. (1997) In: *Reversible Destiny*, Arakawa/Gins. Guggenheim Museum publication.
91. Calvino, I. (1985) *The Arrow in the Mind: A Review of the Mechanism of Meaning*. In: *Image, Eye and Art in Calvino: Writing Visibility*. Grundtvig, B. McLaughlin, M.L. Petersen, L.W. (Eds.) Chapter 20. (2007) Oxford: Legenda
92. Gins, M. (1994) *Helen Keller or Arakawa*. New York: Burning Books, p.89.
93. Gins, M., Arakawa, S. (2006), *Making Dying Illegal*. New York: Roof Books, p.56.
94. Mordecai, B. (2012) Online: <http://www.quora.com/Whats-a-good-ending-for-Biology-is-really-chemistry-Chemistry-is-really-physics-Physics-is-really-math-Math-is-really-hard> [Accessed: 12th October, 2014]
95. Vitz, P.C., Glimcher, A.B. (1983) *Modern Art and Modern Science, The Parallel Analysis of Vision*, New York: Praeger, p. 6-29.
96. Dawkins, R. (2013)(1st Ed. 1986) *The Blind Watchmaker*, London: Penguin, p.12.

97. Ortega, D. (2015) Telephone interview with the artist, In: Damian Ortega: Casino, Hangar Bicocca, Italy, exhibition catalogue, p.10.
98. Duchamp, M. ( 1987) In: Cabanne, P. Dialogues with Marcel Duchamp, Cambridge, MA: Da Capo Press, p.142.
99. Maharaj, S. (1996) Typotranslating the Green Box, In: The Duchamp Effect, Buskirk, M, Nixon, M. (Eds), M.I.T. and October Magazine, 1996, p.72.
100. Hamilton, R. quoted in: Richard Hamilton, Collected Words: 1953–1982, London 1982, p.189.
101. Russell, B. An inquiry into meaning and truth: the William James lectures for 1940 delivered at Harvard University, London, Routledge, 1992, p. 15.
102. Zajonc, A. (1991) Light and cognition: Goethean studies as a science of the future. In: Goethe's way of Science, A Phenomenology of Nature (1998) Seamon, D., and Zajonc, A. (Eds). New York: State University of New York Press.
103. Galileo, G. In: Hardin, C.L. (1998) The Philosophy of Colour, In: Colour for Science, Art and Technology, Nassau, K. (Ed), Elsevier Science. p.211.
104. Walter, P. (1961) The Renaissance. London (np) p.205.
105. Jay, M. (1993) Downcast eyes: The denigration of Vision in the Twentieth Century French Thought. Berkley, Los Angeles and London. p.26.
106. Sol LeWitt and Andrea Miller-Keller. 1981-1983, In: Sol LeWitt Critical Texts, AEIUO, Incontri Internazionali D'Arte, Rome, Italy, V. Adachiara, (Ed.) 1995
107. Unknown author, Press Release for Wall drawing#564, Paula Cooper Gallery, 2013, Online: <https://www.paulacoopergallery.com/exhibitions/sol-lewitt/press-release> [Accessed: 4th October 3014]
108. LeWitt, S. (2003) Interview with Saul Ostrow, BOMB Magazine -ARTists in Con-verstaion, Fall, 2003. Online: <http://bombmagazine.org/article/2583/sol-lewitt> [Accessed: 1st October, 2014]
109. LeWitt, S. (1974) Oral history interview with Sol LeWitt, 1974 July 15, Archives of American Art, Smithsonian Institution. Online: <http://www.aaa.si.edu/collections/interviews/oral-history-interview-sol-lewitt-12701> [Accessed: 1st October, 2014]
110. Eliasson, O. (2006) Your Colour Memory, Soyugenc, I, Glenside, R.T. (Eds), p. 75-83.
111. LeWitt, S. (1969) Sentences on Conceptual Art. Art Language 1 (No. 1). England.
112. Eliasson, O. (2012) Your Rainbow Panaorama, Originally published in Spanish as 'Tu panorama arco iris' in, Leer es respirar, es devenir: Escritos de Olafur Eliasson, (Barcelona, 2012), p. 161. Online: [http://s3-eu-west-1.amazonaws.com/olafureliasson.net/texts/Tu\\_panorama\\_arco\\_iris\\_Your\\_rainbow\\_panorama\\_109989.pdf](http://s3-eu-west-1.amazonaws.com/olafureliasson.net/texts/Tu_panorama_arco_iris_Your_rainbow_panorama_109989.pdf). [Accessed: 1st October, 2014]
113. Eliasson, O. (2014) Reality is Ephemeral: Turner Colour Experiments, Tate Etc. issue 32: Autumn 2014. Online: <http://www.tate.org.uk/context-comment/articles/reality-ephemeral> [Accessed: 3rd October, 2014]
114. Hughes, R. (1980) The Shock of the New, London: Penguin Random House Com-

- pany, p.17.
115. Nagel, T. (1986), *The View From Nowhere*, New York, NY: Oxford University Press.
  116. Williams, B. (1985, published 2011), *Ethics and the Limits of Philosophy*, London and New York, NY: Routledge.
  117. Manders, M. (2011) *Parallel Occurrences, Documented Assignments*. Aspen Art Museum and The Hammer Museum, p.9.
  118. Bender, J.; Marrinan, M. (2010) *The Culture of Diagram*, California: Stanford University Press. p. 72.
  119. Sylvester, D. (1975) *Interviews with Francis Bacon*, London: Thames and Hudson, pg.100.
  120. Rewald, S. *The Cubist Painters: 1906–1913* In: *Twentieth-Century Modern Masters: The Jacques and Natasha Gelman Collection*, Rewald, S., Lieberman, W.S. (Eds) New York: Metropolitan Museum of Art, 1989. p. 113.
  121. Bender, J.; Marrinan, M. (2010) *The Culture of Diagram*, California: Stanford University Press. p. 72.
  122. Talbot, R. (2008) *Drawing connections*, In: *Writing on drawing: Essays on drawing practice and research (2008)* Intellect books, UK: Bristol. p.55.
  123. Bacon, F. (1975) *Interviews with Francis Bacon*, London: Thames and Hudson. pg.53.
  124. Talbot, R. (2008) *Drawing connections*, In: *Writing on drawing: Essays on drawing practice and research (2008)* Intellect books, UK: Bristol. p.45.
  125. Talbot, R. (2008) *Drawing connections*, In: *Writing on drawing: Essays on drawing practice and research (2008)* Intellect books, UK: Bristol. p.54.
  126. Talbot, R. (2008) *Drawing connections*, In: *Writing on drawing: Essays on drawing practice and research (2008)* Intellect books, UK: Bristol. p.54
  127. Talbot, R. (2008) *Drawing connections*, In: *Writing on drawing: Essays on drawing practice and research (2008)* Intellect books, UK: Bristol. p.55
  128. Talbot, R. (2013) *Quote from transcript of interview with Michael Whittle*, Newcastle University of Art, October 25th 2013. (Full transcript in Appendix)
  129. Ibid.
  130. Peirce, C.S. (Date unknown) Quoted in: Brent, J. (1998) *Charles Sanders Peirce: A Life*, Indiana University Press, p.129.
  131. Chandler, D. (1994) *Semiotics for beginners*. Online: <http://visual-memory.co.uk/daniel/Documents/S4B/> [Accessed: 1st September, 2014]
  132. Umberto, E (1976) *A Theory of Semiotics*. Bloomington, Indiana University Press. p. 268
  133. Umberto, E (1976) *A Theory of Semiotics*. Bloomington, Indiana University Press. p. 270
  134. Chandler, D. (1994) *Semiotics for beginners*. Online: <http://visual-memory.co.uk/daniel/Documents/S4B/> [Accessed: 1st September, 2014]
  135. Russell, B. 1959. *Wisdom of the West*, Garden City, NY, Doubleday. p.276

136. Popper, K.R. 1972. *Objective Knowledge: An Evolutionary Approach*, Oxford, Clarendon Press. p.212.
137. Peirce, C.S. (1908) In: *Semiotics and Significs*. Hardwick, C. (Ed) Bloomington I.N.: Indiana University Press. p.85-86.
138. Peirce, C.S. (1905) *Issues of Pragmatism*, In: *Collected Papers of Charles Sanders Peirce*, vols. 1-6 Hartshorne, C., Weiss, P (Eds), vols. 7-8 Burks, A. (Ed) Cambridge, MA, Harvard University Press, 1931-58. References from this source are abbreviated as CP (collected papers) followed by numbers that refer to the volume and paragraph separated by a full stop. CP: 5.448, note 1. (MS 634: 16-17 September, 1909, CN 2:149)
139. CP 5.199 (See ref. 138)
140. Elkins, J. (2003) *What does Peirce's Sign System Have to Say to Art History?* *Culture, Theory, and Critique* 44 (1):5. p. 22
141. CP. 5.119 (See ref. 138)
142. CP 4.537 (See ref. 138)
143. Wetzel, L. (2014) *Types and Tokens*, *The Stanford Encyclopedia of Philosophy* (Spring 2014 Edition), Zalta, E.N. (Ed.) Online: <http://plato.stanford.edu/archives/spr2014/entries/types-tokens/> [Accessed: 30th September, 2014]
144. CP 4.537 (See ref.138)
145. CP 8.334 (See ref. 138)
146. Peirce, C.S. (1908) *Excerpts from Letters to Lady Welby*. In: *The Essential Peirce*, (1998) Indiana University Press, p.480
147. Cudmore, P. (2009) *The Social Context of Creativity*, PhD thesis presented for examination in the College of Humanities & Social Science, University of Edinburgh, December 2009. p.22, footnote3. Online: <https://www.era.lib.ed.ac.uk/bitstream/handle/1842/5628/Cudmore2011.pdf> [Accessed: 30th September, 2014]
148. Peirce, C.S. quoted in: de Waal, C. (2013) *Peirce: A guide for the perplexed*, London: Bloomsbury Academic. p.88.
149. Skaggs, S. (2013) *Typology and typography: Bridging the type / token / tone distinction*. In: *SemiotiX: Design, Style and Fashion* [Online] Available from: <http://fashion.semiotix.org/2013/02/typology-and-typography-bridging-the-type-token-tone-distinction/> [Accessed: 30th August, 2014]
150. Eco, U., *Opera Aperta*, 1962, rev. 1976 – English translation: *The Open Work* (1989), introduction, Harvard University Press: Cambridge, Massachusetts
151. de Waal, C. (2013) *Peirce: A guide for the perplexed*, London: Bloomsbury Academic. p.88.
152. LeWitt, S. (1967) *Paragraphs on Conceptual Art*. *Art Forum*. June, 1967
153. *Ibid.*
154. Celant, G. (2009) (First published:1988) *The Sol LeWitt Orchestra*. In: *Sol LeWitt: 100 views*. Eds. Markonish, D. and Cross, S. MASS MoCa in association with Harvard University Press, p. 27.
155. LeWitt, S. Oral history interview with Sol LeWitt, 1974 July 15, (An interview of Sol LeWitt conducted 1974 July 15, by Paul Cummings, for the Archives of American

- Art.), Online: <http://www.aaa.si.edu/collections/interviews/oral-history-interview-sol-lewitt-12701> [Accessed: 29th August, 2014]
156. LeWitt, S. (1969) Sentences on Conceptual Art. In: *Art and Language*, No. 11. (May 1969) p. 11
  157. Storr, R. (2009) First Things First. In: *Sol LeWitt: 100 views*. Eds. Markonish, D. and Cross, S. MASS MoCa in association with Harvard University Press, p. 113.
  158. Elkins, J. (1999) *The Domain of Images*. New York: Cornell University Press. p. 214
  159. Baume, N. (2001) *Sol LeWitt: Open cubes*. Exhibition Catalogue. Hartford: Atheneum Museum of Art.
  160. Lewitt, S. quoted in: LeWitt and Miller Keller, A. Exerpts from a Correspondance, 1981 – 1983. In: Suzanne Singer, ed., *Sol LeWitt wall drawings, 1968 – 1984*. Amsterdam: Stedelijk Museum, Eindhoven: Van Abbemuseum, Hartford: Wadford Atheneum, 1984. p. 18-25.
  161. Scanlan, J. (2009) Credit Where Credit is Due. In: *Sol LeWitt: 100 views*. Eds. Markonish, D. and Cross, S. MASS MoCa in association with Harvard University Press, p. 104.
  162. Venet, B. (2012) 24 Questions For French Conceptual Artist Bernar Venet, Interview with Kolesnikov-Jessop, S., BLOUINARTINFO, September 28, 2012. Online: <http://www.blouinartinfo.com/news/story/829306/24-questions-for-french-conceptual-artist-bernar-venet#> [Accessed: 2nd October, 2014]
  163. Venet, B. (2004) In: *A Renaissance Artist of the Third Millenium*. Bernar Venet in conversation with Laura Tansini, *Sculpture magazine*, Vol. 23, No. 4, in May 2004. Online: <http://www.bernarvenet.com/publications/texts-and-interviews> [Accessed: 2nd October, 2014]
  164. Kuspit, D. (2004) *Art: A Matter of Context, Writings 1975 - 2003*: Bernar Venet, Hard Press Editions.
  165. Coleridge, S.T. (12 July 1827 ) Quoted in: *Specimens of the Table Talk of Samuel Taylor Coleridge (1821-1834)*. Coleridge, H.N. (Ed. ) 1935, Online: <http://www.gutenberg.org/ebooks/8489> [Accessed: 2nd October, 2014]
  166. Wordsworth, W. (1800) *Famous Prefaces*. The Harvard Classics. 1909–14. Preface to *Lyrical Ballads*, William Wordsworth. Online: <http://www.bartleby.com/39/36.html> [Accessed: 2nd October, 2014]
  167. Allen, K. (2002), *The A-Poetics of Bernar Venet*. (Essay based upon an interview. conducted on October 13, 2002). Online: <http://public.journals.yorku.ca/index.php/public/article/viewFile/30562/28076> [Accessed: 2nd October, 2014]
  168. Nayral, J. (1912) preface to *Galerías J. Dalmau*, Barcelona. *Exposició de Arta cubista*. (April – May 1912) Reprinted in *Guillaume Apollinaire: Les Painters Cubistes*. Breunig, L.C., Chevaliare J. Cl. Paris: Hermann (1965) p. 181
  169. Duchamp, M. *Salt Seller: The writings of Marcel Duchamp (Marchand du sel)*. Eds. Sanouillet, M. Peterson, E. New York: Oxford University Press, 1973. p. 30.
  170. Duchamp, M. As quoted in Sweeney, *A conversation with Marcel Duchamp*, NBC

- Television interview, January 1956. Sweeney, J.J. (1946) Eleven Europeans in America: Marcel Duchamp. *Museum of Modern Art Bulletin* 13, p. 19-21. In: Dalrymple Henderson, L. (1998) *Duchamp in context: Science and technology in the large glass and related works*. New Jersey: Princeton University Press.
171. Cabanne, P. (1971) *Dialogues with Marcel Duchamp*. Originally published: London: Thames and Hudson. p. 61.
  172. Dalrymple Henderson, L. (2013) *The Fourth Dimension and non-Euclidean geometry in Modern Art*. 2nd Revised Edition. Massachusetts Institute of Technology. p. 283.
  173. Duchamp, M. (1920) Letter to Suzanne Duchamp. In: *Affectueusement, Marcel: Ten Letters from Marcel Duchamp to Suzanne Duchamp and Jean Crotti*. (1982) Francis Naumann, M. *Archives of American Art Journal*, Vol. 22, No. 4. pp. 2-19.
  174. Tompkins, C. (1998) *Duchamp: A Biography*. New York: Henry Holt and Co. Inc. p.212-214
  175. Zajonc, A. (1998) Goethe and the science of his time. In: *Goethe's way of Science, A Phenomenology of Nature*. Seamon, D. and Zajonc, A. (Eds) p. 17.
  176. von Goethe, J.W. (1881) *Autobiography* (publ. 1974) trans. Oxenford, J. Chicago: University of Chicago press. (vol.2) p.108-111
  177. Bockenmühl, J. (1998) Transformations in the foliage leaves of higher plants. In: *Goethe's way of Science, A Phenomenology of Nature*. Seamon, D. and Zajonc, A. (Eds) p.127.
  178. North Whitehead, A. (1954) *Dialogues of Alfred North Whitehead*, A. Lucien, P. (Ed.) 2001 edition, (1st published 1954), Boston: David R. Godine.
  179. Eco, U. (1968) *La Struttura Assente (The Absent Structure)*. Milan: Bompiani, p.168
  180. Knoespel, K. (2002) Diagrammatic transformation of architectural space. *Philosophica* 70, p. 11-36.
  181. Barthes, R. (1980) *The Plates of the Encyclopedia*. In: Roland Barthes, *New Critical Essays*, Howard, R. (transl.) New York: Hill and Wang.
  182. Netzhammer, Y. Bühler, K. (July 21st, 2010) *Regardless of Probability*, Kathleen Bühler in conversation with Yves Netzhammer. In: *der Reservat der Nachteile*. (2010) U.K.: Corner House Publications. p.108
  183. Netzhammer, Y. (2014) *Answers in reply to questions posed by the author in emails, July 30 - 31, 2015*. (See Appendix )
  184. Manders, M. (2010) *Parallel Occurrences / Documented Assignments*. Aspen Museum of Art, Aspen Art Museum and The Hammer Museum. p.11
  185. van Adrichem, J., Bouwhuis J., Dölle M. (2002) *Sculpture in Rotterdam*, 010 Publishers, p. 60.
  186. Manders, M. (2010) *Parallel Occurrences / Documented Assignments*. Aspen Museum of Art, Aspen Art Museum and The Hammer Museum. p. 126
  187. Manders, M. (unknown date) *Drawing with Shoe Movement / Two Consecutive*

- Floor Plans from Self-Portrait as a Building, Online: Home page: <http://www.markmanders.org/works-b/> [Accessed: 1st October, 2014]
188. Berg, S. (2007) Like the night creeping into a shoe. In: In the Absence of Mark Manders. Berg, S. (Ed.) Hatje Cantz. p. 14.
  189. Manders, M. (2003) Quoted in: Koplos J. Mark Manders at Greene Naftali - New York, Art in America, April 2003.
  190. Manders, M. (1998) On Drawings. Online: <http://www.markmanders.org/texts/english/on-drawings/> [Accessed: 10th September, 2014]
  191. Bolognini, M. (2008), Postdigitale, Rome: Carocci Editore, p. 34.
  192. Bolognini, M. (nd) Programmed Machines: Infinity and Identity. Online: <http://www.generativeart.com/on/cic/papersGA2004/b9.htm> [Accessed: 28 September, 2014]
  193. Bolognini, M. (2005) Programmed Machines: Infinity and Identity. Solimano, S. (Ed.) Museo di Arte Contemporanea Villa Croce, Neos, Genova
  194. teamLab, Homepage, Online: <http://www.team-lab.net/en/teamlabconcept> <http://www.team-lab.net/en/teamlabconcept> [Accessed: 01, October, 2014]
  195. Ibid.
  196. Ritchie, M. (2013) The temptation of the Diagram: Excerpt from the catalog essay by Matthew Ritchie, Online: <http://www.andrearosengallery.com/> [Accesses: 28th September, 2014]
  197. Ritchie, M. Nichols Goodeve, T (2003) Reflections on an omnivorous visualisation system; An interview with Matthew Ritchie. In: An artists monograph accompanying a solo museum exhibition Player Proposition. Hatje Cantz.
  198. Ibid.
  199. Ibid.
  200. Ritchie, M. (2009) 'The Last Scattering' - Matthew Ritchie with Daniel Bosia, Arup AGU, Video documentation of collaborative exhibition at Phase 2, Arup, 8 Fitzroy St, London, UK until 26 June 2009. Online: <https://www.youtube.com/watch?v=XuAgtpdVqHs> [Accessed: 28th September, 2014]
  201. Aranda, B. Lasch, C. (unknown date) The Morning Line, Online: <http://arandalasch.com/works/the-morning-line/> [Accessed: 28th September, 2014]
  202. Kwinter, S. (2009) Sanford Kwinter on Matthew Ritchie's The Morning Line, Artforum. Online: <http://www.mutualart.com/OpenArticle/Systems-Theory/7AD-0B171EA56C4C8> [Accessed: September 29th, 2014]
  203. Ritchie, M. (2013) The temptation of the Diagram: Excerpt from the catalogue essay by Matthew Ritchie, Online: <http://www.andrearosengallery.com/> [Accesses: 28th September, 2014]
  204. Mehretu, J. (2013) Julie Mehretu in interview with Jesper Bungaard, Marrian Goodman Gallery, New York. Online: <http://channel.louisiana.dk/video/julie-mehretu-between-place> [Accessed: 2nd October, 2014]
  205. Ibid.

206. Mehretu, J. (2005) Julie Mehretu by Lawrence Chua (Interview), BOMB Magazine, Artists in conversation, BOMB 91, Spring 2005. Online: <http://bombmagazine.org/article/2714/julie-mehretu> [Accessed: 01 October, 2014]
207. Ibid
208. Ibid
209. Mehretu, J. (2003) Quoted in Exh. Cat., Minneapolis, Walker Art Center, Julie Mehretu: Drawing into Painting, Minneapolis, 2003, p. 7.
210. Mehretu, J. (2005) Julie Mehretu by Lawrence Chua (Interview), BOMB Magazine, Artists in conversation, BOMB 91, Spring 2005. Online: <http://bombmagazine.org/article/2714/julie-mehretu> [Accessed: 01 October, 2014]
211. Wallenstein, S.O. (2009) Diagrams of the Mind. In: Lost Between the Extensivity / Intensivity Exchange. Neidich, W. (np) Onomatopoe.
212. Gansterer, N. (2001) Drawing a Hypothesis: Figures of Thought. New York: Springer-Verlag
213. Leeb, S. (2001) A line with variable direction, which traces no contour and delimits no form. In: Drawing a Hypothesis: Figures of Thought. Gansterer, N. New York: Springer-Verlag
214. Gansterer, N. (2014) Translectures - Thinking matters other others: Nikolaus Gansterer in dialogue with Mariella Greil, Corpus Magazine – Yes to performance: 12/2014. Online: [http://www.gansterer.org/Text/TRANSLECTURES\\_Gansterer\\_Corpus-english.pdf](http://www.gansterer.org/Text/TRANSLECTURES_Gansterer_Corpus-english.pdf) [Accessed: 2nd October, 2014]
215. Ibid.
216. Gansterer, N. (2014) Workplan for “METHOD LAB I: WHAT IF?” 14 July - 11 August 2014. Collaboration with choreographer Mariella Greil and art-writer Emma Cocker in residence at the Impulstanz Festival Vienna, 2014. Online: <http://www.gansterer.org/> [Accessed 2nd October, 2014]
217. Knoespel, K. (2001) Diagrams as Piloting Devices in the Philosophy of Gilles Deleuze. Saint-Denis: Presses Universitaires de Vincennes, No.19, 145-165
218. Wordsworth, W. (1814) Prospectus to ‘The Recluse’. In; The Excursion (1814) London: Simpkin Marshall
219. Novalis (Feb.24, 1978) Letter to A. W. Schiegel, In: *Novalis, Schriften*, Samuel, R., Hans-Joachim Mähl, H-J., and Schulz. G.,(Eds), Stuttgart: Kohlhammer Verlag, 1961-2008. IV, p,252
220. Goethe, J.S. von. Faust. Luke D. (transl). U.K. Oxford World Classics, p.501-9
221. Steiner, G. (2002) Grammars of Creation. Yale University Press. p.44.
222. Plath, S. (publ. 2002) The Unabridged Journals of Sylvia Plath. Kukil, K.V. (Ed) Bantam Double Day.
223. Auden, W.H., (1974) Thank you fog. United States: Random House.
224. Barthes, R. (1980) The Plates of the Encyclopedia. In: Roland Barthes, New Critical Essays, Howard, R. (transl.) New York: Hill and Wang.
225. Ibid.

226. Heidegger, M. Quoted in: Mattei, J.F., (1995) *Heidegger from Metaphysics to Thought* (Sunny Series in Contemporary Continental Philosophy) New York: State Univ of New York Printing. p.116
227. Steiner, G. (1991) *Martin Heidegger*. University of Chicago press. p.27
228. Google search definitions, online. Accessed: 12th September, 2014]
229. Steiner, G. (1978) *Heidegger*. Kermode, F. (Ed,) London: Fontana press. p.24
230. Boyessen, H.J., (1893) *Essays on German Literature* (3rd Ed. revised) NewYork: Charles Scribner's Sons. p.325 Online: <https://archive.org/details/essaysongerman100boyegoog> [Accessed: 2nd October, 2014]
231. Heidegger, M. (unknown date) Quoted in: *Heidegger and the philosophy of the mind*, Newhaven: Yale University Press, 1987. p.57.
232. Merleau-Ponty, M, (1964) *The Primacy of Perception* Evanston: Northwestern University Press. p.5
233. Nietzsche, F. (1883-91) *Thus Spoke Zarathustra*. Pipin, R. (Ed) Del Caro, A. (transl.) (2002) Cambridge: Cambridge University Press. p. 248
234. Albrecht, A. (2007) Quoted in: *Parallel universes make quantum sense*, New Scientist, 19th September, 2007.
235. Elkins, J. (1999) *The Domain of the Image*. Cornell University Press. p.214
236. Knowlson, J. (1996) *Damned to Fame : The Life of Samuel Beckett*. NY, United States: Simon & Schuster. p. 342
237. Ackerly, C.J., Gontarski, S.E. (2004) *The Grove Companion to Samuel Beckett* London: Grove Press. p. 212.
238. Ibid. p. 254.
239. Nishitani, K. (1995) *The Japanese Art of Arranged Flowers*. Shaw, J. (transl.) In: Parkes, G. *Japanese Philosophy*. Chapter 1. In: Solomon, R.C. Higgins, K.M. (Eds) *World Philosophy: A Text with Readings*. New York: McGraw-Hill. p. 23-37.
240. Leonardo da Vinci quoted in: Kemp, M. (2007) *Leonardo daVinci: Experience, Experiment and Design*. London: V&A Publications. p.73
241. Cirlot, J. E. (2003) *Dictionary of Symbols*, London p.26-27.
242. Gough, C. Caumont, J. Caumont, J, (Eds.) (1993) *Ephemerides on or about Marcel Duchamp and Rose Sélavy 1887-1968*. In: *Marcel Duchamp: Work and Life*. Hulten, P. (Ed.) Milan: Bompiani. (np)
243. Rilke, R.M. (1923) *Duino Elegies*, Young, D. (transl.) (1993) New York: WW Norton & Co.
244. Ibid.
245. Heidegger, M. (unknown date) Quoted in: *Heidegger and the philosophy of the mind*, Newhaven: Yale University Press, 1987. p.57.
246. Elliot, T.S. (1920) (Online: <http://www.bartleby.com/199/13.html> [Accessed: 2nd September, 2014]
247. Dennett, D. 2014, *Intuition pumps and other tools for thinking*, New York: W.W. Norton and Co.