

WHAT CAN NEUROSCIENCE CONTRIBUTE TO  
A REVIEW OF  
FRIEDRICH SCHILLER'S CONCEPT OF THE  
*PLAY IMPULSE?*

AN INVESTIGATION INTO CONSTRUCTED OPPOSITIONS  
IN PAINTING PRACTICE

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## ABSTRACT

This thesis investigates whether there are parallels between Iain McGilchrist's theories about the bi-hemispheric nature of the human brain (2009) and Friedrich Schiller's letters *On the Aesthetic Education of Man* (1795). Schiller proposed a balancing of the two opposing, human impulses of sensuality and reason. When experienced equally, an oscillation, or 'play', is created between the two. This produces, what he called, the *play impulse*. My painting practice will contribute by testing whether this play can be created at the surface of a painting — that narrow, active, intermediate field — between constructed oppositions, both evident yet in equilibrium.

Excluding footnotes, bibliography, diagram text and captions, the word count of this thesis is 10,344 words.

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## RESEARCH QUESTIONS

Reading Iain McGilchrist's *The Master and his Emissary: The Divided Brain and the Making of the Western World* (2009) evoked Friedrich Schiller's letters *On the Aesthetic Education of Man* (2004). McGilchrist's thesis states that, for humans, there are 'two fundamentally opposed realities, two different modes of existence' delivered by and through the 'bi-hemispheric structure of the brain'; that the hemispheres 'need to co-operate' as we need both to have the experience of a 'recognisably human world' (McGilchrist, 2009, 3).

Schiller's thesis promoted the aesthetic as an agent through which man's opposing impulses – of sensuality and reason - may be felt as separate, yet in a balanced and harmonious way. McGilchrist does not mention Schiller specifically

<sup>1</sup> nor does he include his letters *On the Aesthetic Education of Man* in his extensive bibliography. However, there are similarities between the theses. **We have two concepts, about two antagonistic 'impulses'<sup>2</sup>; the two opposites are evident yet separate because there is a 'play', between them. And that this condition – of the balance of the opposing impulses through 'play' – is necessary for the individual to experience a 'human world' in the fullest sense.** Are there parallels to be made across these separate theses?

In relation to these findings; can constructed oppositions co-exist— evident yet in equilibrium—at the surface of a painting?

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<sup>1</sup> McGilchrist does mention German 'idealist' philosophers in general. (2009, 352-382). He also devotes a whole chapter to philosophy (chapter four); about what philosophy can help us understand about brain hemisphere differences; what neuroscience can offer to illuminate philosophy (McGilchrist, 2009, 135). And he does use the Hegelian concept of *Aufhebung* to frame some of his ideas. See appendix 2.

<sup>2</sup> Reginald Snell's translation of Schiller's term from German into English will be used throughout; that is *impulse*.

## AIMS

To show that neuroscience can contribute to a review of Schiller's concept of the *play impulse*.

To show how there is potential for discourse between neuroscience and aesthetics through art practice; how all three disciplines can correspond.

## METHODS

The methods employed will be:

- A close reading of the two main texts.
- Analysis of art practice.

## METHODOLOGY

The methods will be applied in the following way:

1. Placing Schiller, McGilchrist and my practice in their different contexts.
2. A close reading of *The Master and His Emissary: The Divided Brain and the Making of the Western World* will produce an outline of McGilchrist's main concept about the bi-hemispheric structure of the human brain. In particular there will be an

examination of the differences between the hemispheres and the function of the *corpus callosum* which connects them.

3. A close reading of Schiller's *On the Aesthetic Education of Man* will produce an outline of the reasoning behind his concept of the *play impulse*.

4. A summing up of the parallels between Schiller and McGilchrist, will lead into the section on practice, by aligning how those findings correspond with the way a painted surface can balance two dimensional and three dimensional elements at the same time – keeping them separate and evident, yet in balance. To show how the practice both reflects upon and reflects back to these theories.

Reading McGilchrist's book prompted me to read Schiller more closely, so that will be the order in which I will proceed here. This will highlight the differences between the two: over two centuries between publishing dates; and the fact that they write from different perspectives; different disciplines. And it will also show the parallels between their theories; that this is a reciprocal arrangement. That way, McGilchrist's text will frame Schiller's, from a 21<sup>st</sup> Century viewpoint. And Schiller's thesis provides a frame for the field of neuroscience for arts practitioners and theorists. This methodology will form a kind of working model of the *play impulse* in the structure of the thesis.

## NOTES ABOUT THE TEXTS

Both texts (especially McGilchrist's) attend to much broader areas of concern than this MRes thesis can incorporate in the time and space allowed.<sup>3</sup>

Due to the length of the titles of the two main texts and the frequency with which I shall refer to them, I will refer to Friedrich Schiller's *On the Aesthetic Education of Man* as Schiller's *Letters* and Iain McGilchrist's *The Master and His Emissary: The Divided Brain and the Making of the Western World* as *The Divided Brain*.<sup>4</sup>

**REGINALD SNELL'S TRANSLATION** into English from the original German will be used throughout. He translates the term *spieltrieb* to *play impulse*.<sup>5</sup>

**REFERENCING:** In the sections on the close reading of McGilchrist's and Schiller's texts, unless other texts are cited, only page numbers will appear in parentheses.

**SCHILLER'S USE OF THE TERM 'MAN':** For consistency, and fluency, the same term will be used and should be understood as: *Man* (singular): 'human being of either sex; a person'; *Man* (plural) human beings in general; the human race.<sup>6</sup>

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<sup>3</sup> For instance, McGilchrist's expansive attention to literature and music is not relevant to this thesis. McGilchrist's review of human culture is diachronic - from Ancient Greece to the present day. He has set out to make sense of the findings of neuroscience in a cultural context – that of the Western world. As a result, the focus is broad.

<sup>4</sup> McGilchrist (2009, 14) chooses the first part of the title to act as metaphor for the dominance of the left hemisphere over the right in contemporary Western culture. It is based on a story from Nietzsche about a wise, trusting and benevolent leader - the Master – who depended on an emissary to help manage the expanding boundaries of his domain. The emissary became self-serving. He ambitiously advanced his own ends and ultimately undermined and overthrew the Master. The emissary became a despot and the whole domain collapsed.

<sup>5</sup> Frederic Beiser translates it into *play drive*; others might use *play instinct*.

<sup>6</sup> Definitions are from the Oxford Dictionary online. Retrieved 17 July, 2013 from <http://oxforddictionaries.com/definition/english/man?q=man>



## ETHICS

I do not expect my thesis to require Ethics committee approval but if so, I will abide by their decisions.

## SCHILLER IN CONTEXT

### THEORY AND PRACTICE

The attempt to unite theory and practice became one of the major themes of his intellectual development (Beiser, 2005, 9)

Aesthetics: 'is that branch of philosophy which deals with the arts, and with other situations that involve aesthetic experience and aesthetic value'.<sup>7</sup>

Freidrich von Schiller (1759-1805) published his *Letters* in 1795. There are twenty seven in all, originally written for his patron Prince von Augustenburg. (Beiser, 2005, 121). Schiller studied philosophy, and was a creative writer – a practicing poet<sup>8</sup> - and as such was 'an artist who knew philosophy, a philosopher who knew art' (Beiser, 2005, 9).

Schiller's *Letters* are a response to Immanuel Kant's philosophy. In *Schiller as Philosopher: A Re-Examination*, Beiser says the *Letters* are a development of Kant's basic principles.<sup>9</sup> However, Schiller was also 'challenged' by Kant, as he could not accept one of his 'teachings in the third *Kritik*; that there cannot be **a science of aesthetics**' (2005, 48). Schiller felt confident 'he could succeed where Kant had failed' as his practice as a poet would compensate for his 'philosophical weakness' (Beiser, 2005, 48).

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<sup>7</sup> The Oxford Dictionary of Philosophy. (Honderich, 2005, 13)

<sup>8</sup> Schiller was also a playwright.

<sup>9</sup> Schiller said: 'I will, to be sure, not conceal from you the fact that it is Kantian principles on which the propositions that follow will for the most part be based.' (Schiller, 2004, 24)

## SCHILLER'S PHILOSOPHY

In his re-examination of Schiller, Beiser maintains that Schiller has been misunderstood and 'neglected' by his Kantian, Marxist and post-modernist critics. I mention this here, because resistance to Schiller's ideas needs some examination in the context of art theory. Beiser looks at Schiller in his social and political context, not ours (Beiser, 2005), and says:

1. The criticism that Schiller was an 'amateur' philosopher says more about the modern 'academic division of labour' from the standpoint of 'our own specialised age' (Beiser, 2005, 9) than it does about his philosophy. His inconsistencies and ambiguities are just 'business as usual' for philosophy according to (Beiser, 2005, 9). He cites Hume and Kant as comparable in this respect<sup>10</sup>.

2. 'Some maintain that the *Briefe*<sup>11</sup> was Schiller's retreat 'from politics into the ideal world of art', others that it was his form of engagement with politics' (Beiser, 2005, 123). A close reading seems to show the latter.

In regard to the second point: Schiller started to write the *Letters* in 1793, during the 'The Reign of Terror'. Disillusionment with the aftermath of the Revolution is implicit in the *Letters*<sup>12</sup> French Revolution failed to create a 'society and state based entirely on the principles of reason' (Beiser, 2005, 130). The descent into violent bloodshed and the inability to create a 'secure and stable constitution for France' (Beiser, 2005, 130) caused a crisis for those who believed in the humanitarian

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<sup>10</sup> Beiser says 'He is no less rigorous than Kant or Hume' (Beiser, 2005, 9).

<sup>11</sup> *Briefe* is the title of the *Letters* in the original German.

<sup>12</sup> Schiller says this in the Seventh Letter. "[...] the law of conformity becomes tyranny towards the individual when it is combined with an already prevailing weakness and physical limitation, and so extinguishes the last glimmering sparks of spontaneity and individuality. The character of the time must first, therefore, recover from its deep degradation; in one place it must cast off the blind force of Nature, and in another return to her simplicity, truth and fullness – a task for more than a single century' (46).

principles of the Enlightenment on which the concept of the Revolution had been built.

There is a significant political dimension to the *Letters* if, as Beiser says, ‘we take Schiller at his word’ (Beiser, 124). In the ‘Second Letter’ Schiller excuses himself; saying that it seems irresponsible to draw attention to Fine Art, when ‘true political freedom’ was at stake (Schiller, 2004, 25)<sup>13</sup>. Schiller’s idea of educating man through the Arts<sup>14</sup> is his contribution to these debates. His *Letters* attend to the problem of ‘how to make the public aware of and to act according to’, the principles of reason (Beiser, 2005, 129). Viewed in this context, his *Letters* do not constitute a retreat but an engagement with the political. However an elaboration on this must be left for further research, as this thesis can only be concerned with the keystone of his aesthetic theory – that is, his concept of the *play impulse*.

Before progressing to the close reading of Schiller’s *Letters*, there will be a section on neuroscience, then my practice in the context of this research, before progressing to a close reading of McGilchrist’s thesis about imbalance and the bi-hemispheric nature of the brain.

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<sup>13</sup> Schiller said ‘I hope to convince you that this subject is far less alien to the need of the age than to its taste, that we must indeed, if we are to solve that political problem in practice, follow the path of aesthetics [...]’ (Schiller, 2004, 25)

<sup>14</sup> He viewed the Fine Arts as ‘an instrument’ that was free from the ‘political corruption’ of the ‘barbarous’ State (50).

## NEUROSCIENCE IN CONTEXT

Freud anticipated that making connections between experience and the structure of the brain would be possible once neuroscience became sufficiently evolved. A neurologist first and foremost, he believed that the mental entities that he described, and whose conflicts shaped our world – the id, the ego and the superego – would one day be more precisely identified with structures within the brain. In other words he believed that the brain not merely mediated our experience, but shaped it too. (McGilchrist, 2009, 8).

Neuroscience: any or all of the sciences, such as neurochemistry and experimental psychology, which deal with the structure or function of the nervous system and brain.<sup>15</sup>

### ‘NEUROAESTHETICS’

Freudian psychoanalytical theory and the post-Freudian theories of, amongst others, Melanie Klein, Jaques Lacan and Julia Kristeva have been applied to art practice and theory for decades. Can we think of neuroscience as an evolved version of Freudian theory as McGilchrist suggests? If so, it is applicable to art theory and practice. To date, there has been controversy between the two disciplines in question, however.

Art Historian Martin Kemp<sup>16</sup> described a conference on ‘Neuroaesthetics’<sup>17</sup> at the Getty Research Institute in Los Angeles in 2002, where neuroscientists VS Ramachandran (2011) and Semir Zeki (1999; 2009) presented their findings. The confrontation with the resident and visiting art historians - who were mainly ‘social

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<sup>15</sup>Retrieved from: <http://oxforddictionaries.com/definition/english/neuroscience?q=neuroscience+>

<sup>16</sup> Martin Kemp is emeritus professor in history of art at the University of Oxford.

<sup>17</sup> A term created by Semir Zeki.

deconstructivists’ - was described as a ‘bloody’ encounter’ (Kemp, 2009, 882). Kemp says that neuroscience’s interest in art and aesthetics will be unproductive unless they look at questions of ‘how we perceive and attach significance to form’ and less about abstract ideas like beauty (Kemp, 2009, 882).<sup>18</sup> Kemp has in fact collaborated with physiologists and neurologists. In the paper published on that research - *Human Cortical Activity Evoked by the Assignment of Authenticity When Viewing Works of Art*<sup>19</sup> – a different approach is proposed: ‘the activation of brain networks rather than a single cortical area’, is preferred, as this ‘paradigm supports the art scholars’ view that aesthetic judgments are multi-faceted and multi-dimensional in nature’ (Kemp et al, 2011, 1). From my position as a practicing artist, ‘authenticity’ and ‘value’ are also abstract concepts and have little bearing on art practice, though they may be useful for art historians. Also, activating multiple areas of the brain does not make the findings more instructive (McGilchrist, 2009, 36)<sup>20</sup>. This will be explained in the next section: ‘The Divided Brain’.

This thesis will suggest that neuroscience *can* make a contribution to discourses on aesthetics; as a 21<sup>st</sup> century framework through which to review Schiller’s concept of the *play impulse*.

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<sup>18</sup>Kemp says: ‘Much of the pioneering work on the neurology of art tended to focus on what has been called “neuroaesthetics” and has aspired to tell us why we find something beautiful. This broad-brush approach tells us little about the complex mechanisms that shape an individual viewer’s response to a specific work of art within powerfully determined contexts. In particular, it is incapable of handling the intricate interactions of form and content within the framework of strong viewer expectations. If neuroscience is to speak effectively to art historians, it requires new questions and different methods’ (2011, 1).

<sup>19</sup> This quote from the paper’s introduction sets the field of enquiry around value: ‘Determination of the authenticity of artworks is of great importance in the art world: authenticity brings a scholarly value in shaping art historical understanding, has direct and potentially huge consequence for monetary value, and, most relevantly here, is presumed to have an impact on the individual viewer’s experience’ (Kemp et al, 2011, 1). The following excerpt from their research paper explains, in brief, how the experiments - to compare responses to ‘fake’ and ‘real’ paintings - were undertaken: ‘Using functional magnetic resonance imaging (fMRI), we examined the brain’s response to *assignment* of authenticity during the viewing of “Rembrandt” portraits’ (Kemp, 2011, 2).

<sup>20</sup> There is a list of some of the problems associated with fMRI that McGilchrist outlines on page 22. The published findings of the research about authenticity and its effect seem to show that not much more can be said other than the activations are complex (Kemp, 2011, 6-7).

## MY PRACTICE IN CONTEXT

‘[...] the arts are the antithesis of science’ (Wilson, 1998, 242).

### RESEARCH IN WRITING

I am a practicing artist, working outside either of these disciplines directly. Given the problematic relations between them, perhaps research through art practice will open up a dialogue. From this viewpoint, my research is not merely a comparison of the two particular theses to find the parallels, but a reflection on the ideas they have in common; particularly how they apply to arts practice. The role of culture is important in both theses, so art practice as a cultural activity, is implicated in these theories.<sup>21</sup> In this sense alone, each discipline has something to say to and about the other two.

Written research such as this, explicitly (as opposed to the paintings which work implicitly) opens a dialogue. This is not to be thought of as a rigid framework, rather more like making a line of communication between different positions, through another context. Discourses on aesthetics have reached a ‘tug of war’; an either/or situation (Beech, 2009, 18).<sup>22</sup> Perhaps neuroscience can move the argument into new ground? If art is ‘the antithesis of science’ discourse between the two will need a third party to act as interpreter. Perhaps art theory can approach neuroscience through a reframing of aesthetics?

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<sup>21</sup> McGilchrist thesis is specifically concerned with culture in the Western World.

<sup>22</sup> Dave Beech says we have come to an impasse, ‘a tug of war’ between arguments such as Dave Hickey’s defense of the democratic appeal of beauty as a personal aesthetic experience, and Amelia Jones’s critique of beauty, whereby individual experience is contextualised socially and politically (Beech, 2009, 18). Beech suggests we should not take sides in the ‘tug of war’ but find pleasure in the play between opposite positions, saying: ‘If aesthetics is performed in the way that gender is, then beauty exists at the tense intersection of the individual and society, with the individual neither fully subsumed nor fully free from social norms and cultural hierarchies. [...] Beauty – like masculine, feminine or queer positions – is not something given but something that we do and something that we change (Beech, 2009, 18).

In *Embodied Knowing Through Art*, Mark Johnson discusses John Dewey's ideas about knowledge. Dewey suggested that the key was to stop thinking of knowledge as a 'fixed body of propositional claims' (Johnson, 2011, 141). Instead, knowledge should be 'a term of praise for success in a process for intelligently transforming experience' (Johnson, 2011, 141). Dewey suggests we focus less on the noun *knowledge* and focus more on the verb *knowing* and this way 'we can emphasise the character of the *process* of enquiry instead of some final *product* construed as a body of knowledge' (Johnson, 2011, 147).<sup>23</sup>

### **PRACTICE AS RESEARCH**

I choose McGilchrist and Schiller as they help me reflect on (and in this way inform) my practice. Just as Schiller has informed my reading of McGilchrist, McGilchrist informed my re-reading of Schiller.

This is the way in which my practice can contribute to the research. Not as a *product* but as something in the world that prompts a *process*; an action; that has the potential to be a 'transforming experience' for the viewer. The action in this case is an oscillation between opposites. As an artist I make work that exists in the phenomenal world, facing outwards. Artworks can make ideas explicit in this way. By balancing constructed oppositions – material and conceptual – at the surface of a painting I put Schiller and McGilchrist's ideas back into the world in a physical form to be experienced. The surface of the paintings hold constructed oppositions in balance. I will show how this functions in a similar way to the *corpus callosum* in the brain, and Schiller's concept of the *play impulse*.

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<sup>23</sup> Here is an example of philosophy linked to science; to the biology of the body. John Dewey, according to Johnson, talks of 'embodied cognition' saying 'we must recognise the role of the body especially our sensory-motor processes and our emotions and feelings, in our capacity for understanding and knowing' (Johnson, 2011, 145).





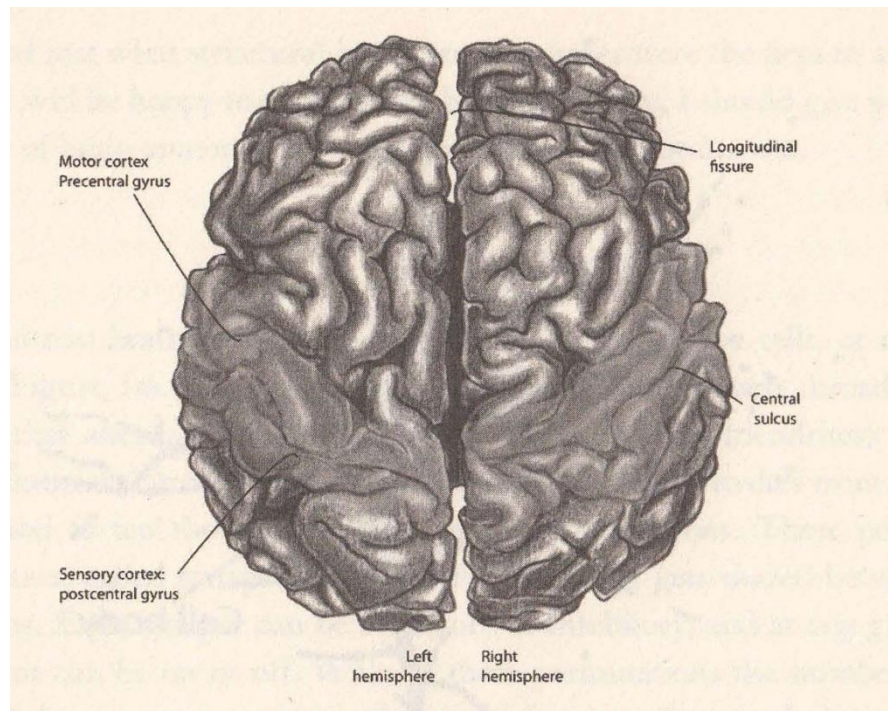


Figure 1: The human brain viewed from the above; the two cerebral hemispheres.<sup>24</sup>

## THE DIVIDED BRAIN<sup>25</sup>

My thesis is that for us human beings there are two fundamentally opposed realities, two different modes of experience; that each is of ultimate importance in bringing about the recognisably human world; and that their difference is rooted in the bi-hemispheric structure of the brain. It follows that the hemispheres need to co-operate, but I believe they are in fact involved in a sort of power struggle (McGilchrist, 2009, 3).<sup>26</sup>

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<sup>24</sup> Illustration from *The Tell Tale Brain: Unlocking the Mystery of Human Nature*, V.S.Ramachandran (2011, 16).

<sup>25</sup> In this section, references will be made by using page numbers in parentheses alone, as they all refer to *The Divided Brain*, (McGilchrist, 2009) unless stated.

<sup>26</sup> He believes 'this explains many aspects of contemporary Western culture', that is, that the Western World is dominated by the left-hemisphere.

## NEUROSCIENCE RESEARCH METHODS

Each hemisphere controls the movement of, and receives signals from, the opposite side of the body (Ramachandran, 2011, 16).

Human brains are not symmetrical in structure (see figure 2). (13). ‘Yakovlevian torque’ is the term neuroscientists use to refer to the irregularities in symmetry of the brain. It is as though the brain had been twisted clockwise slightly (23). Though there are many similarities between the hemispheres, and it is clear that there is overlap between hemispheres (16);<sup>27</sup> McGilchrist’s research consists of comparing the hemispheres in order to find the differences between them (32).

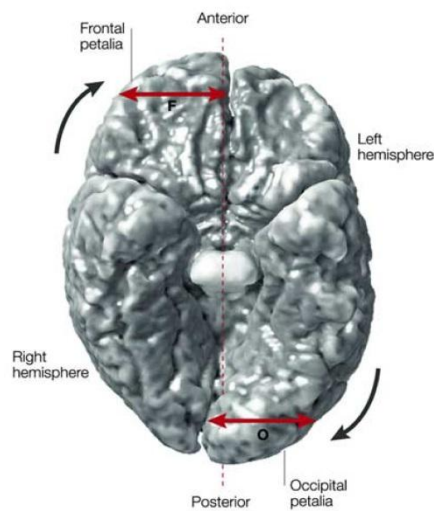


Figure 2: This view of the underside of the brain shows the two hemispheres as asymmetrical, and shows the 'Yakovlevian torque'. For example, the ‘brain is not only wider on the left towards the back, but also wider on the right towards the front’ (23); ‘it is accepted that structure is at some level a reflection of function’ and ‘function is reflected in volume’ (24).<sup>28</sup> Image extracted 23 June, 2013, from: <http://www.nature.com/nrn/journal/v4/n1/images/nrn1009-f2.jpg>

<sup>27</sup> This is proved by the fact that people with brain lesions - that have effectively lost that functioning part of one hemisphere - have led completely normal lives as the other hemisphere will take on the work.

<sup>28</sup> This three dimensional rendering is created from an fMRI scan that has been exaggerated to illustrate asymmetries of the two brain hemispheres. This image was extracted 23 June, 2013, from: <http://www.nature.com/nrn/journal/v4/n1/images/nrn1009-f2.jpg>

While McGilchrist covers the different ways neuroscientists test for such differences (34-37), this section will cover only two of those methods, as these are of greater relevance here.

- Firstly, some points on the problems associated with neuroimaging ‘the preferred method of imaging now available’ (35). This was the method used by Semir Zeki and V.S. Ramachandran and in Martin Kemp’s study as well.<sup>29</sup>
- Secondly, an explanation of research with ‘split-brain’ patients as this will illustrate how and why the brain is divided into two hemispheres.

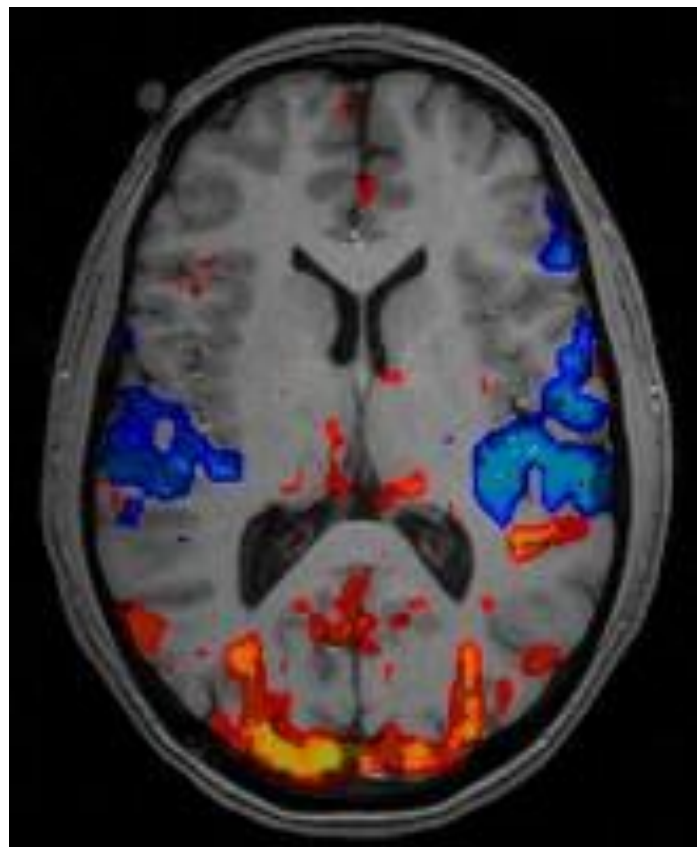


Figure 3: An fMRI (functional magnetic resonance imaging) showing areas of brain activity. If you look closely at the edges of the brain and its folds - a comparison of one side to the other - the asymmetry of the hemispheres is evident too.<sup>30</sup>

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<sup>29</sup> See pages 17 and 18.

<sup>30</sup> ‘Functional magnetic resonance imaging, or fMRI, is a technique for measuring brain activity. It works by detecting the changes in blood oxygenation and flow that occur in response to neural activity – when a brain area is more active it consumes more oxygen and to meet this increased demand blood flow increases to the active area. fMRI can be used to produce activation maps showing which parts of the brain are involved in a particular mental process’. (Devlin, 2007, 1) Image retrieved 29 July 2013 from; <http://www.pnas.org/content/106/17/7209/F2.large.jpg>

## 1. PROBLEMS ASSOCIATED WITH NEUROIMAGING STUDIES

- fMRI imaging ‘just shows a few peaks’ of activation (35).
- Only effort registers, so the more expert we are ‘the less brain activity’ shows (35).
- Experimenting with human beings creates other problems; from male and females behaving differently to differences in age or race. These will affect results (36).
- There is also the problem of how these experiments are conducted.

McGilchrist says that there are many variables to be considered when fMRI scanning is done to visualise the activation of parts of the brain. Some of these can give misleading information, for instance, some activations may in fact be inhibitory in nature, but will be indistinguishable as such; ‘the more complex the task, the more widely distributed the networks involved are likely to be, and the harder it will be to know what it is that one is measuring’ (36).

All of these highlight, especially the last point, the problems associated with Zeki’s approach of collecting data through neuroimaging from single cortical areas, or evaluating Martin Kemp’s collaborative research about ‘authenticity’ and ‘value’, where multiple areas of the brain are activated.

## 2. SPLIT-BRAIN PATIENTS: THE *CORPUS CALLOSUM*

The *corpus callosum* is a band of neural tissue which connects the two hemispheres; is there to allow the two hemispheres to ‘communicate’ (17). The *corpus callosum* contains an estimated 300 – 800 million fibres and these connect similar areas in each hemisphere to the other. The main purpose of a large number of the connecting fibres is to inhibit, or stop the other hemisphere from involvement in whatever

process is in progress as there is overlap, or redundancy, in the hemispheres (16). Severing the *corpus callosum* completely has ‘surprisingly little effect’, because each hemisphere ‘can deal with reality on its own’ if necessary (17).<sup>31</sup>

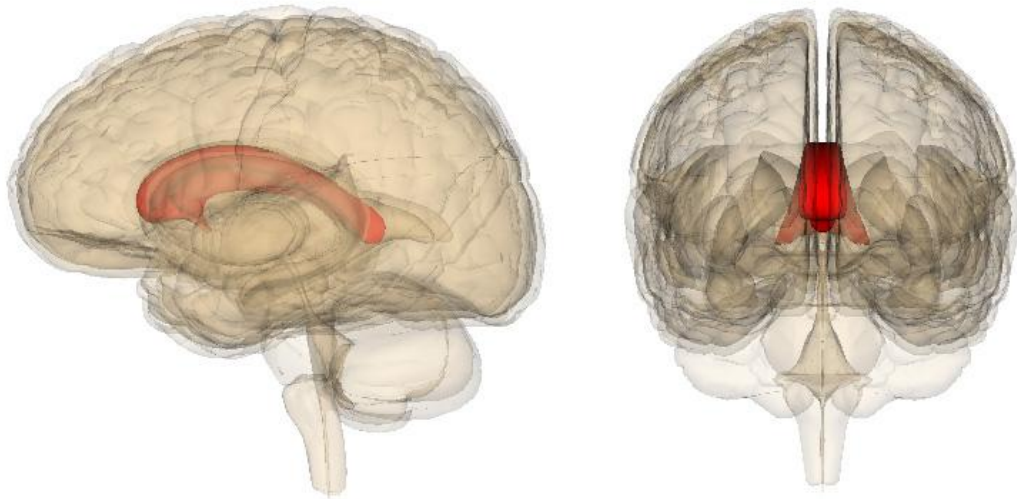


Figure 4: The *corpus callosum* (the red area); viewed from the left side, and viewed straight on, showing how it sits between the two hemispheres of the brain. This is not anatomically accurate, rather a 3D diagrammatic representation.<sup>32</sup>

Split brain patients have had the *corpus callosum* separated to control epilepsy (35). These patients presented researchers with the opportunity to isolate more accurately what each hemisphere was doing. This gives a ‘relatively pure picture’ (35) of how one hemisphere responds on its own, because stimuli presented to one side, say the left eye, cannot be transferred through the *corpus callosum* to the other hemisphere. For example, language is based in the left hemisphere predominantly. In experiments, if an image is shown to a split-brain subject in the left visual field, they will not be able to name what they have seen as the image will have been registered in the right hemisphere, which in most patients cannot ‘speak’. As communication

<sup>31</sup> There are some ‘interesting exceptions’ to this but these are not relevant here (18).

[http://commons.wikimedia.org/wiki/Image:Corpus\\_callosum.png?uselang=ko](http://commons.wikimedia.org/wiki/Image:Corpus_callosum.png?uselang=ko)

<sup>32</sup> Images are from *Anatomography* maintained by Life Science Databases (LSDB). Retrieved from: [http://commons.wikimedia.org/wiki/Image:Corpus\\_callosum.png?uselang=ko](http://commons.wikimedia.org/wiki/Image:Corpus_callosum.png?uselang=ko)

between hemispheres has been largely stopped, the speaking left hemisphere cannot name what it has just seen, but the patient can *point* to something with the left hand as that is controlled by the right side of the brain (35).

**‘WE HAVE TO INHIBIT ONE IN ORDER TO INHABIT THE OTHER’<sup>33</sup>**

The *corpus callosum* has ‘complementary but conflicting tasks to fulfil’ (210)<sup>34</sup>, they are:

1. ‘To share *information*’, and,
2. ‘At the same time keep the worlds where that information is handled separate’.

This important role of the *corpus callosum* will be discussed later in the section on Schiller - with reference to his *play impulse* - and with reference to the painted surface in the section on art practice. The relationship between the hemispheres is competitive, but also requires a form of cooperation from each with the other. And ‘co-operation requires the correct balance to be maintained’.

McGilchrist says:

Creativity depends on the union of things that are also maintained separately – the precise function of the *corpus callosum*, both to separate and connect; and [...] division of the *corpus callosum* does impair creativity (42).

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<sup>33</sup> McGilchrist says this in reference to the two hemispheres: ‘we have to inhibit one in order to inhabit the other’ (210).

<sup>34</sup> There are other subcortical structures involved, such as the cerebral commissures (210).



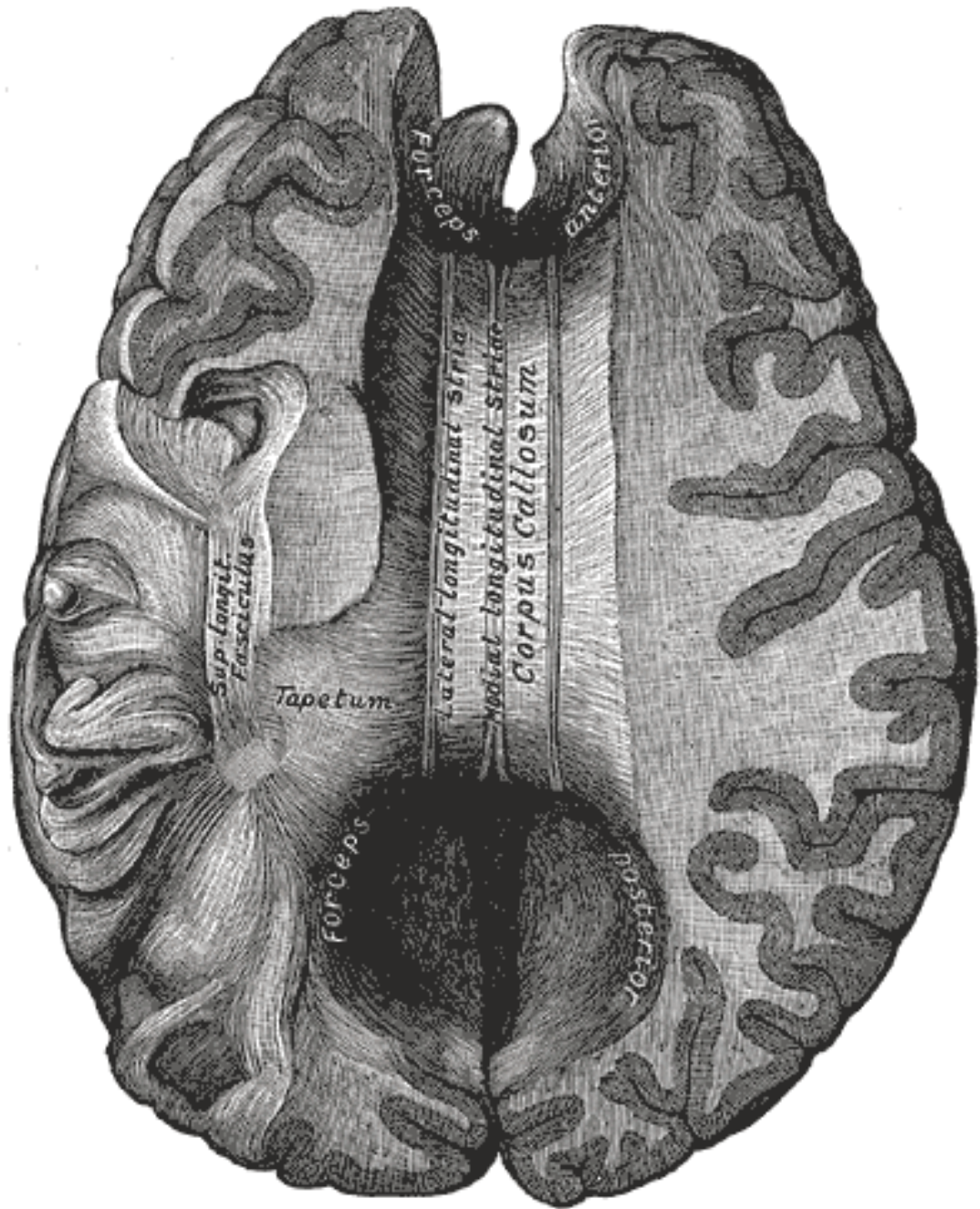


Figure 5: Henry Gray's anatomical drawing of the human brain showing the two hemispheres and the *corpus callosum* running between them.<sup>35</sup>

<sup>35</sup> *Gray's Anatomy: Descriptive and Applied* (Philadelphia: Lea & Febiger, 1913) 932 Lapsed into the public domain. Retrieved 28 July, 2013 from: <http://en.wikipedia.org/wiki/File:Gray733.png>



## THE TWO HEMISPHERES: TWO OPPOSING REALITIES

Our ability to stand back from the world of experience is what enables us ‘to plan, to think flexibly and inventively’ (21). We need ‘to inhabit the world of immediate bodily experience’ (21) and also need to rise above that. McGilchrist makes an analogy with the horizontal and vertical axes in a graph (see figure 3): to live on the ground without being able to rise is ‘to be like an animal’— the horizontal axis (21). And the opposite is ‘to be a detached eye’— the vertical axis (22).

The right hemisphere is largely responsible for ‘the complexity and immediacy of experience’, maintaining ‘the broadest experience of the world as it comes to us’ (22). In contrast, the left hemisphere allows us ‘to control or manipulate experience’ as it helps us maintain distance (22). The function of the attention of the right hemisphere: seeing myself in a ‘broader context’ (25), requires a more ‘open, receptive, widely diffused alertness to whatever exists’ outside the self (25) ‘from our surroundings’. As a result ‘the right hemisphere sees things whole, and in their context’ (27).

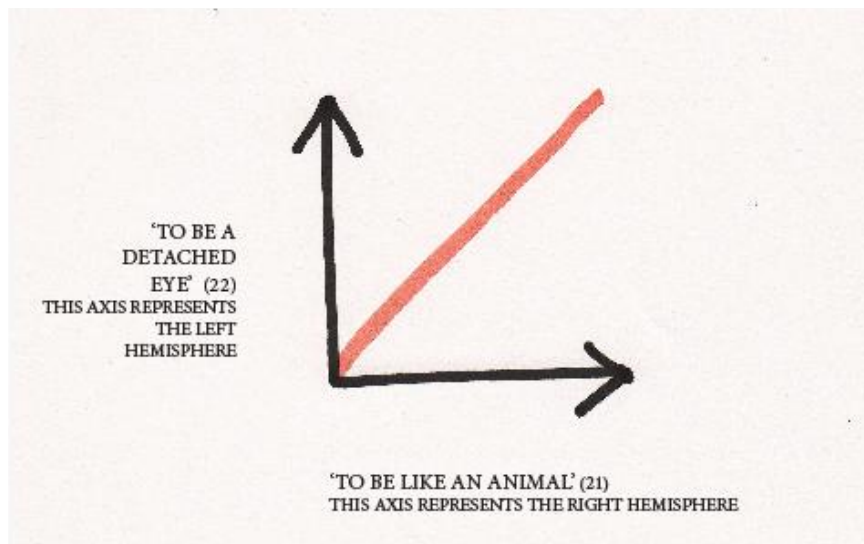


Figure 6: McGilchrist's analogy of the horizontal and vertical axes of a graph. We need ‘to inhabit the world of immediate bodily experience’, and also to rise above it – ‘to be a detached eye’ (21).

The function of attention of the left hemisphere is ‘to focus attention narrowly and with precision’, this is ‘the world of ‘me’ – just me and my needs, as an individual competing with other individuals’ (25) consequently the left hemisphere ‘sees things abstracted from context’ (28).

In humans, animals and birds, the two hemispheres ‘attend to the world in a different way’ and this is consistent in all (26). McGilchrist gives the example of the bird eating a seed to illustrate this. The bird manages different strategies by using different eyes. Each eye corresponds with the opposite hemisphere. The right eye (left hemisphere) is used for picking up the seed, the left eye (right hemisphere) for keeping a look out for predators or mates.

#### **ABSTRACTED OR IN CONTEXT**

The left hemisphere is more closely interconnected within itself and within regions of itself, than the right hemisphere (42). This is seen ‘as a reflection at the neural level of the essentially self-referring nature of the world of the left hemisphere; it deals with what it knows the world it has made for itself’ (42). Whereas the right hemisphere brings together in consciousness different elements from ears, eyes and other organs and from memory (42). The right hemisphere is ‘attuned to apprehension of anything new’ (40)

<sup>35</sup>, whereas the left hemisphere ‘will identify by labels rather than context’ (49). The left hemisphere abstracts, taking things out of their context, and has the capacity to categorise once the abstraction is done, and this is the key to its ‘intellectual power’ (50). This is how the left hemisphere *re-presents* the world. <sup>36</sup>

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<sup>35</sup> The link between the right hemisphere and what is new or emotionally engaging exists not just in humans but already in higher mammals (40). ‘Anything that requires indirect interpretation, which is not explicit or literal, that in other words requires contextual understanding, depends on the right frontal lobe for its meaning to be conveyed or received’ (49).

<sup>36</sup> The right hemisphere’s supposed language ‘inferiority’ (51) is due largely to positive inhibition by the left hemisphere; if the left hemisphere is ‘sufficiently distracted, or incapacitated, the right hemisphere turns out to have a more extensive vocabulary’. (51)

The right hemisphere distinguishes ‘individuals of all kinds, places as well as faces’ (51) because of its capacity for ‘holistic processing’; appreciates things in their context. The right hemisphere has ‘an affinity with whatever is living’, (55) ‘for what exists before and after – and beyond ourselves, namely nature’ (56). It prioritises ‘existing things [...] in ‘the lived world’ (56). In contrast, the left hemisphere is concerned with ‘utility’- in what is has made and ‘the world as a resource to be used’. (55)

37

Because of the right hemisphere’s openness to the interconnectedness of things, it is interested in others as individuals’ (57) and is therefore important for a capacity for empathy and identification with others.<sup>38</sup>

#### **EMOTIONAL ASSYMETRY**

There is evidence that in all forms of emotional perception, regardless of the type of emotion, and in most forms of expression, the right hemisphere is dominant (59).<sup>39</sup>

The right hemisphere is more connected to the limbic system<sup>40</sup>, therefore more involved in the experience of emotions of all kinds, than the left hemisphere. ‘The right frontal pole also regulates the hypothalamic-pituitary axis which is the neuroendocrine interface between the body and emotion’ (58).<sup>41</sup>

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<sup>37</sup> The left hemisphere is ‘superior at identifying simple shapes and figures, which are easily categorised, whereas complex figures, being less typical, more individual, are better processed by the right hemisphere’ (52); with ‘abstract categories and types’; the impersonal (54).

<sup>38</sup> ‘This capacity emerges in primates along with self-recognition and self-awareness, and is closely linked to it’ (57). Patients with damage to the right frontal lobes, but not the left, ‘suffer a change of personality whereby they become incapable of empathy’. (58)

<sup>39</sup> As the right hemisphere has a ‘capacity for emotion’, and apprehends the world within ‘the context of the body’ (67) it is superior in the emotional realm to the left hemisphere (69).<sup>39</sup>

<sup>40</sup> The limbic system is a complex system of nerves and networks in the brain, involving several areas near the edge of the cortex concerned with instinct and mood. It controls the basic emotions (fear, pleasure, anger) and drives (hunger, sex, dominance, care of offspring). Retrieved 30 July, 2013 from: <http://oxforddictionaries.com/definition/english/limbic-system?q=limbic+system+>

<sup>41</sup> This allows a ‘subjective appreciation of the body’s physiological condition’ (58).

‘The left hemisphere is attached to language *per se*’ (70), using it to manipulate and order ideas or things, but the right hemisphere is responsible for understanding what others mean, understanding meaning in context for example, the moral of a story or the point of a joke. Those with right hemisphere damage do not understand implicit meanings. (71) ‘More explicit reasoning is underwritten by the left hemisphere, less explicit reasoning (such as is often involved in problem solving, including scientific and mathematical problem solving) by the right hemisphere’. (65)<sup>42</sup> Especially the sort of problem solving that happens specifically when we are ‘not concentrating on it’; [this] is associated with the right hemisphere.<sup>43</sup>

‘The left hemisphere likes things that are man-made [...]. They are not, like living things, constantly changing and moving, beyond our *grasp*.’ (79) As a result, the left hemisphere tends to reinforce whatever it is already doing. He likens this reflexivity to ‘a hall of mirrors’ and says it ‘only discovers more of what it already knows, and only does more of what it is already doing’ (86).

## CONCLUSION

We need both hemispheres to experience ‘a human world’; however they provide fundamentally opposing views. Opposite is a diagram summarising the differences between the ways in which the two hemispheres attend to the world. The brain is not just how we deal with the world it also brings the world about.<sup>44</sup>

The next section will deal with the close reading of Schiller’s *Letters*; a review of the construction of his *play impulse*.

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<sup>42</sup> ‘Problem solving, making reasonable deductions and making judgements may become harder if we become conscious of the process’ because the left hemisphere comes into play, seeking to make things explicit (65).

<sup>43</sup> The right anterior temporal area, specifically in the right anterior superior temporal gyrus (65)

<sup>44</sup> A central theme of McGilchrist’s thesis is the importance of ‘our disposition towards the world and one another, as being fundamental in *grounding what it is that we come to have a relationship with*, rather than the other way around’ (5). ‘Our view of the world we actually experience, phenomenologically [...] is determined by which hemisphere’s version of the world comes to predominate’ (10). See appendix 3.

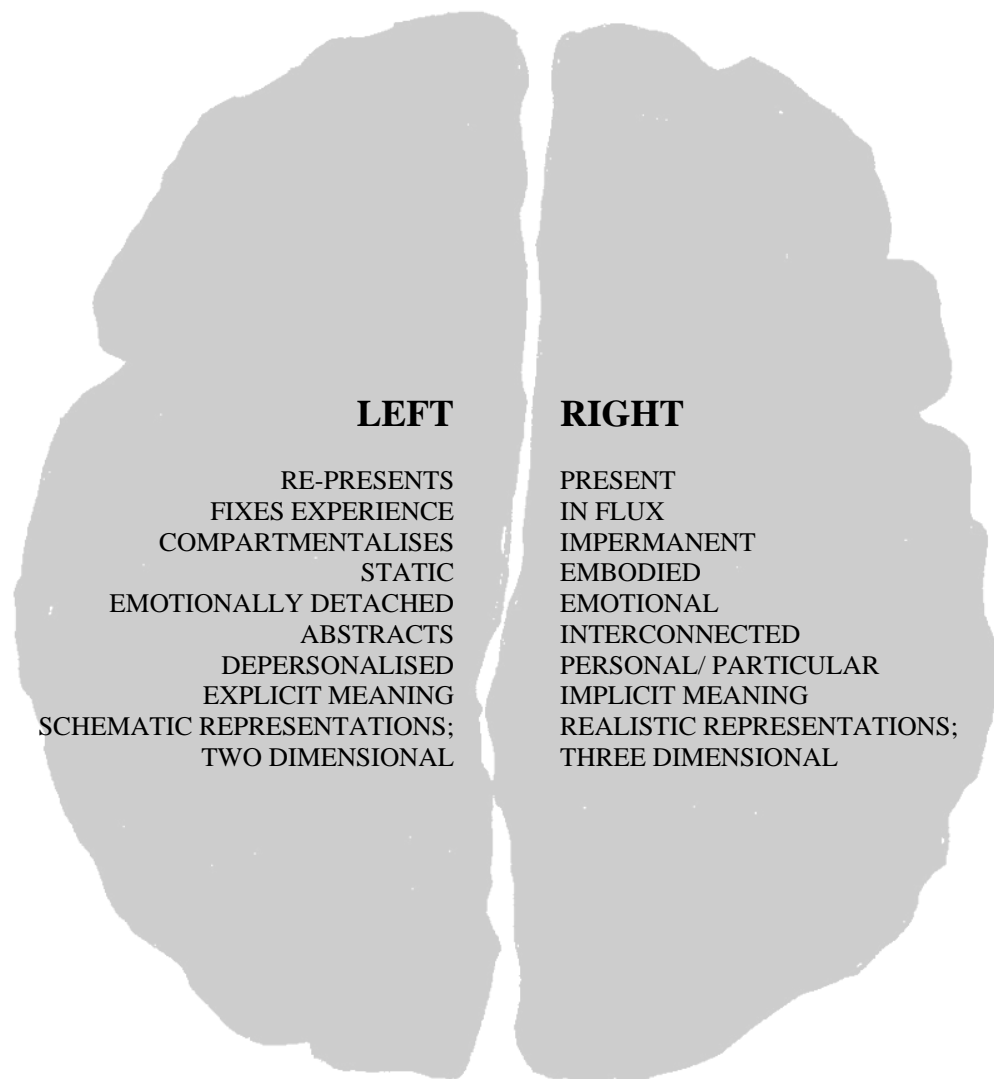


Figure 7: Diagram of the Divided Brain: showing nature of attention each hemisphere contributes to our understanding of the world. This is based on Iain McGilchrist's text (McGilchrist, 2009, 93) as outlined on pages 21 – 31 of this thesis.

## SCHILLER: THE *PLAY IMPULSE*

44

### A TWOFOLD CONCEPTION OF MAN: THE SAVAGE AND THE BARBARIAN

Reason demands unity, but Nature demands multiplicity, and both systems of legislation lay claim to Man's obedience. The law of the former is impressed upon him by an incorruptible consciousness, the law of the latter by an ineradicable feeling (32).

Schiller begins to construct his theory from the following duality<sup>45</sup>: On the one hand, Man is *in* nature – 'no better than with the rest of her works' and yet unlike 'the rest of her works' (and it is 'just this that constitutes his humanity') he has the capacity of 'retracing again, with his reason' what Nature 'has made of him'; he is capable of 'remodelling the work of need into a work of his free choice'. In this way he elevates himself from physical or 'blind necessity' and differentiates himself from animals (27-28).

Schiller says 'Reason demands unity, but Nature demands multiplicity, and both systems of legislation lay claim to Man's obedience'; that reason is impressed upon us by 'incorruptible consciousness'; the law of Nature by 'ineradicable feeling' (32). So here are two extremes, in opposition. The terms he uses to describe Man at these extremes are:

- *the savage* whose 'feelings rule his principles' and
- *the barbarian* whose 'principles destroy his feelings.'

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<sup>44</sup> As this is a close reading of the translation of the primary text, there will be many direct quotes from Schiller, (2004). References to page numbers will stand alone in parentheses unless they refer to another text.

<sup>45</sup> Schiller is quick to make this clear, in the third paragraph of the First Letter: 'I will, to be sure, not conceal from you the fact that it is Kantian principles upon which the propositions that follow will for most part be based' (Schiller, 2004, 24).

He warns that when ‘Reason introduces her moral unity’ she must not ‘injure the multiplicity of Nature’; that with the impact of Nature’s ‘multiplicity’ on society, there should be ‘no rupture in its moral unity’. Somewhere in the middle is the ‘triumphant form’ between ‘uniformity’ (overly influenced by Reason) and ‘confusion’ (overly influenced by Nature) (34).

Schiller’s savage ‘despises Art and recognizes Nature as his sovereign mistress, the barbarian derides and dishonours Nature’ (34). Reason, he associates with ‘incorruptible consciousness’ - with the unity of thought; with principles. And ‘ineradicable feeling’ is associated with being under the influence of Nature. As such, Reason is associated with unity and Nature with multiplicity.

In letters five to nine, Schiller criticises the society of his age, and describes the exemplary, balanced and ‘splendid humanity’ of the Ancient Greeks <sup>45</sup>(38). He discusses the tension between the individual and the State with reference to ‘the drama of the present day’ – post revolutionary France; the Reign of Terror (35). Saying that all societies in the ‘process of civilization [...] must fall away from Nature through over-subtlety of intellect before they can return to her through Reason’ (37). He sees the State losing sight of the individuality of its members, while struggling to maintain the ‘abstract life of the whole’ (40).<sup>46</sup>

‘Nature everywhere combines, intellect everywhere separates.’ (90)<sup>47</sup>

According to Schiller it was ‘culture itself’ that wounded ‘modern humanity.’ He says ‘enlarged experience and more precise speculation made necessary a

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45He describes the Ancient Greeks as ‘combining fullness of form with fullness of content, at once philosophical and creative, at the same time tender and energetic, we see them uniting the youthfulness of fantasy with the manliness of reason in a splendid humanity’ (38).

<sup>46</sup> He says: ‘And so gradually concrete life is extinguished, in order that the abstract life of the whole may prolong its sorry existence, and the State remains eternally alien to its citizens because nowhere does feeling discover it. Compelled to disburden itself of the diversity of its citizens by means of classification and to receive humanity only at second hand, by representation, the governing section finally loses sight of it completely’ (40).

<sup>47</sup> This is a quote from a footnote on that page.

sharper division of the sciences' and 'the more intricate machinery of States made necessary a more rigorous dissociation of ranks and occupations' breaking the 'essential bond of human nature' (39). He says 'the character of the time must first [...] recover from its deep degradation; in one place it must cast off the blind force of Nature, [the violence of the Reign of Terror] and in another return to her simplicity, truth and fullness' [recover from the 'tyranny of conformity'] (47)

#### PERSON AND CONDITION

In the next step of the construction of the *play impulse*, Schiller says that Man perceives that there is something 'that endures and something that perpetually alters'. The enduring he calls his *person*, the changing his *condition* – in other words 'the self and its determinations' (60).

For Schiller, Man perceives in two ways: with his 'rational nature' and his 'sense faculty', and:

'...to remain perpetually himself throughout all change, to turn every perception into experience, that is, into unity of knowledge, and to make each of his manifestations in time a law for all time, is the rule which is prescribed for him by his rational nature. Only as he alters does he *exist*; only as he remains unalterable does *he exist*' (62).

Only through reason, as he abstracts his experience – re-traces or represents it – does '*he*' exist in time, that is, 'when he subjects the diversity of the world to the unity of his ego' (63). When he is under the influence of his feelings - his senses – '*he*' no longer exists, but he '*exists*' (that is, he is alive to the external world). 'So long as he only perceives, only desires and acts from mere appetite, he is still nothing but *world*'; (63) that is, he no longer has a sense of time, and he is unaware of a sense of *self* as separate from the 'confusion' of the 'world' or nature.



## THE IMPULSES

In the ‘Twelfth Letter’ Schiller first mentions the word ‘impulse’, he feels this aptly describes the way these opposing forces ‘impel us to realise their object’ (64). He calls the first of these impulses the *sensuous* which is concerned with setting the human ‘within the bounds of time and turning him into matter’ (64). The condition ‘of merely occupied time [he calls] sensation’ (64), because under the influence of this impulse alone - of sensations - man ‘perceives what is present’ and in such a state, he is unaware of time. As Schiller put it ‘*he* is not, for his personality is extinguished so long as sense perception governs him and times whirls him along with itself’ (65).

48

He calls the second impulse the *formal*, when his rational nature, ‘strives to set him at liberty’ by ‘maintaining his person throughout every change of circumstance’ (rather than being enslaved by his senses) (66). This impulse allows man to fix time (67); allows ideas to form; for him to represent the world — imposing his reason on the unity of sensations. In summary: for Man there are ‘two fundamental laws of his sensuous-rational nature’:

- ‘The first insists upon *reality*’; he is to ‘turn outward everything internal’.
- ‘The second insists upon *formality*’; he is to ‘give form to everything external’. (63,64)

By the end of the ‘Twelfth Letter’, Schiller has produced several sets of oppositions. Opposite is a summary in point form, to re-consider before moving on to the next stage of his argument: how to reconcile these oppositions?

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<sup>48</sup> In a footnote Schiller says ‘Everyday language has for this condition of absence-of-self under the domination of sense-perception the very appropriate expression *to be beside oneself* – that is, to be outside one’s ego’ (footnote 1, on page 65)

**SCHILLER'S OPPOSING FORCES**  
**'IMPEL US TO REALISE THEIR OBJECT' (64)**

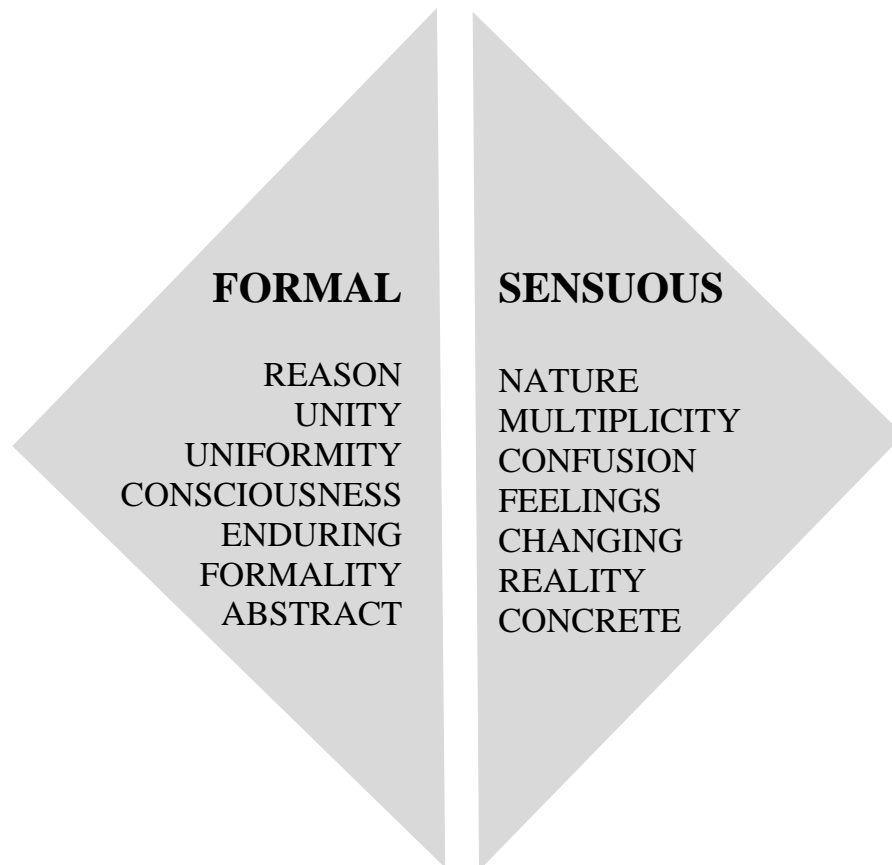


Figure 8 Chart of Schiller's 'forces'

## CULTURE

In a footnote in The ‘Thirteenth Letter’, Schiller suggests that there is only one solution to create unity between the ‘primary and therefore necessary, antagonism of the two impulses’ that is the ‘unconditional subordination of the sensuous impulse to the rational’.

<sup>49</sup> However the result would be ‘mere uniformity, not harmony’. He is suggesting another way: ‘subordination [...] but it must be reciprocal’. Both principles, he says, ‘are therefore at once mutually subordinated and co-ordinated – that is, they are and react upon each other; without form no matter, without matter no form’ (68).<sup>50</sup>

For Schiller it is the role of culture to define the limits of each impulse, ‘to watch over them’ (68); to ‘uphold’ the rational impulse against the overly sensuous, and the and vice versa.

## THE PLAY IMPULSE

He should feel because he is conscious of himself, and should be conscious of himself because he feels (70).

We have now reached the conception of a reciprocal action between the two impulses, of such a kind that the operation of the one at the same time confirms and limits the operation of the other [...] (70).

In the ‘Fourteenth Letter’ Schiller introduces the concept of the *play impulse*. He says that so long as Man satisfies only one of these oppositional impulses, or both

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<sup>49</sup> Because the ‘material’ often stands in the way of reason, there is a tendency to think of the ‘material simply as a hindrance, and to represent the sense faculty as necessarily opposed to reason because in this particular matter it stands in our way’

<sup>50</sup> He attributes this idea to Fichte (*Foundation for the Whole Theory of Science*, Leipzig, 1794)

alternately, he cannot hope 'to be' - that is, to be human, in the fullest sense. However, he says there are times 'when [Man] had this twofold experience at the same time, when he was at once conscious of his freedom and sensible of his existence, when he at once felt himself as matter and came to know himself as spirit, he would in such cases [...] have a complete intuition of his humanity' (73). That is he would be conscious of his freedom to reason and thereby distance himself from the flow of experience, and *at the same time* be conscious of his feelings; of his sensuous nature; of his physical existence. This experience of being under the influence of both oppositional impulses at the same time, in oscillation, would be 'regarded as a 'new impulse' (74) – the *play impulse*.

In proportion as it lessens the dynamic influence of the sensations and emotions, it will bring them in harmony with rational ideas; and in proportion as it deprives the laws of reason of their moral compulsion it will reconcile them with the interest of the senses (75).

Schiller says this experience of the two opposing impulses in equilibrium, is like 'an oscillation between the two principles, so that at one moment it is *reality*, and at another *form*, that is predominant' (81). 'Reality', being the material life of the senses, and 'form', being the capacity to reason.

It is necessary to leave Schiller at this point <sup>51</sup> to refer back to McGilchrist to draw parallels between the two texts.

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<sup>51</sup> His aesthetic theory could be the subject of further research.

## THE PARALLELS

Though 214 years separate them, as do the contexts from within which they write, a close reading has established the following major parallels between these texts.

1. Both theses describe human existence as being shaped by separate oppositional, antagonistic ways of being. Schiller's '*impulses*' – formal and sensuous; McGilchrist's two hemispheres of the brain and the very different ways of attending to the world.
2. We need both extremes to deliver 'a recognisably human world' (McGilchrist, 2009, 3); as we need to be in reality, in nature (on the ground, on the *x* axis of the graph) *and* to rise above that to re-present the world (be on the vertical or *y* axis, like 'a detached eye').
  - Schiller's formal impulse corresponds with McGilchrist's left hemisphere (the *y* axis). Both are responsible for abstracting experience, representing, being outside the flow of experience; interested in fixing, compartmentalising and the explicit, unifying existence with the intellect.
  - Schiller's sensuous impulse corresponds with McGilchrist's right hemisphere (the *x* axis). These are similar because they are concerned with the changeable, real, external world, where Man is embodied and in flux, and interconnected with the multiplicity of nature.
3. Both theses call for co-operation, or reciprocity between, the antagonistic oppositions.
  - Schiller sees this as being possible if 'a reciprocal action' or 'play' between opposites 'of such **a kind that the operation of one at the same time confirms and limits the operation of the other**' (Schiller, 70). So that 'at one moment is it *reality*, and at another *form*, that is predominant' (Schiller, 81). He describes such a relationship so that both are '**mutually subordinated and coordinated**', but it must be reciprocal – 'that is, they are and react upon each other' (68).
  - McGilchrist describes 'the precise function of the *corpus callosum* [as being] to **both separate and connect**' the two opposing hemispheres

of the brain (McGilchrist, 42)<sup>52</sup>. That ‘**we have to inhibit one in order to inhabit the other**’ (McGilchrist, 210). In other words, ‘at one moment’ it could be the left hemisphere ‘and at another’ it is the right hemisphere, ‘that is predominant’ (to use some of Schiller’s words). This ensures the possibility of an oscillation from one hemisphere to the other. In both cases, one extreme defines and limits the other.

- So when there is an oscillation between them, neither is dominant, or if so, it is momentary, and therefore both are felt at virtually the same time and are evident.
4. Both McGilchrist and Schiller warn against dismissing the sensuous (right hemisphere) as being ‘passive’. Schiller contradicts the distinction made by some that the mind is only active when it is reasoning (Schiller, 94).<sup>53</sup> McGilchrist says the left hemisphere tends to ‘see the workings of the right hemisphere as purely incompatible, antagonistic as a threat to its dominion’ (McGilchrist, 206). Reason will dominate the *sensuous impulse* (the right hemisphere) if left unbalanced, as it ‘tends to reinforce what it is already doing’ (McGilchrist, 86).
  5. Both warn against ‘over subtlety of intellect’ – or a left hemisphere dominated world<sup>54</sup> – and insist that the *sensuous impulse* (the right hemisphere) allows us to connect with Nature; the external world; ‘the complexity and immediacy of experience’ (McGilchrist, 22) and with others (McGilchrist, 57; Schiller, 98)<sup>55</sup>.
  6. Finally, Schiller sees the role of culture as being able ‘to establish an interchange or reciprocity’ between impulses, so that they ‘co-ordinate’

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<sup>52</sup> The *corpus callosum* is a band of neural tissue which connects the two hemispheres; allowing them to ‘communicate’; many of the fibres that connect the two hemispheres in fact inhibit the other to avoid overlap. See pages 23 -26 of this thesis.

<sup>53</sup> Schiller says: ‘Certainly each impulse exists and operates within the mind, but the mind itself is neither matter nor form, neither sensuousness nor reason, a fact which does not always seem to have been considered by those who only allow the human mind to be active when it proceeds according to reason, and where it contradicts reason declare it to be merely passive’ (94).

<sup>54</sup> This is like McGilchrist’s ‘hall of mirrors’, in other words. In another long footnote in the ‘Thirteenth Letter’; Schiller says: the ‘bad influence of an overwhelming sensuousness’ is obvious to us, but ‘overpowering rationality upon our knowledge and our conduct is not so evident’.

<sup>55</sup> “The determination which he received by means of sensation must therefore be preserved, because he must not lose hold of reality (98)”

(Beiser, 2009, 145). McGilchrist is in accord with <sup>56</sup> Schiller when he says of culture:

thus its business is twofold: first, to secure the sense faculty against encroachments of freedom; secondly, to secure the personality against the power of sensation. The former it achieves by the cultivation of the capacity for feeling; the latter by the cultivation of the capacity for reason' (Schiller, 69).<sup>57</sup>

There is final connection to be made - with art practice. In summary, the *play impulse* and the *corpus callosum* both provide the potential for co-operation between opposing impulses and hemispheres respectively. Passing through this intermediate phase – or intermediary space – opposing drives find equilibrium if an oscillation is created. The oscillation is dependent on opposites defining each other through limitation so that neither is dominant as both are evident at the same time – in other words, they are in balance. And this is necessary for a recognisably human world.

Can something similar be said about the surface of a painting? There is a potential for the painted surface to allow such oppositions to exist in equilibrium. The next section will show how this might be achieved in practice.

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<sup>56</sup> As he sees the culture of the Western world as dominated by the left-hemisphere; that modernism reflects and has helped create this world – whose nature shows ‘an excess of consciousness’, ‘depersonalisation and alienation [...]’; disruption of context; fragmentation of experience’ (McGilchrist, 397). This world he describes dominated by the realm of left hemisphere, does equate with the world of Schiller’s *formal impulse* as he describes it.

<sup>57</sup> So ‘the role of culture is to establish an interchange or reciprocity between reason and sensibility, where both faculties are co-ordinate with each other’ (Beiser, 2005, 145). The term ‘co-ordinate’ brings to mind McGilchrist’s metaphor of the graph.

## ART PRACTICE

Taking the development of my practice as a framework, this section will be concerned with applying Schiller's *play impulse* as a methodology for art practice (with reference to McGilchrist's theory). The surface in a painting can be, metaphorically speaking, equivalent to the *play impulse*, when an oscillation is created between two dimensional (2D) and three dimensional (3D) elements on the same picture plane; in other words when abstract and figurative passages are played against each other.

## MODERNISM AND MONDRIAN'S BINARIES

The picture plane was the contested ground between abstract and figurative painters in the 20<sup>th</sup> Century (Greenberg, Fer)<sup>58</sup>. For Modernist painters this surface became a conceptual concern. The material nature of it – the flatness of the painted picture plane – was seen as subject matter in itself.

This is significant here because the approach of abstract painters such as Mondrian was one of *negation* – negation of the figurative. Briony Fer in *On Abstract Art* (1997) says:

Mondrian thought in terms of binary oppositions between the determinate and the indeterminate, the inner as opposed to the outward appearance of natural phenomena, the constant as opposed to the capricious, equilibrium as opposed to disequilibrium, masculine as opposed to feminine. (1997, 40)

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<sup>58</sup> Three-dimensionality [was] the province of sculpture, and for the sake of its own autonomy painting has had above all to divest itself of everything it might share with sculpture (Greenberg, 1992, 756).



Fer quotes Mondrian as saying his aim was to find a pure new structure – ‘new plastic’ – ‘by reducing the corporeality of objects to a composition of planes that gave the illusion of lying in one plane’ (Fer, 1997, 40).

<sup>61</sup> Corporeality, or as she puts it, ‘the three dimensional quality of bodies in space’ is seen as negative, as threatening the ‘purity’ of the 2D picture plane.

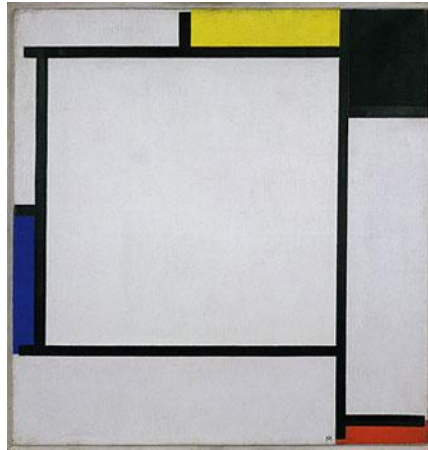


Figure 9: Piet Mondrian, *Tableau 2*, 1922. Oil on canvas, 21 7/8 x 21 1/8 inches. <sup>62</sup>

Mondrian’s thinking on binary oppositions succinctly illustrates the difference between abstract and figurative painting; defines them as opposing positions. It is clear that these binaries correspond with Schiller’s *impulses* and McGilchrist’s hemispheres (see pages 44, 45). Similar qualities are common to the *formal impulse*; the left hemisphere; abstract painting practice. And similar qualities are common to the *sensuous impulse*, the right hemisphere; figurative painting practice. <sup>63</sup>

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<sup>61</sup> Fer quotes Mondrian from his essay *The New Plastic in Painting* published in the magazine *De Stijl* in 1917 – 1918.

<sup>62</sup> Piet Mondrian © 2003 Mondrian/Holtzman Trust c/o hcr@hcrinternational.com. Piet Mondrian Composition A with Black Red Grey. Retrieved from [http://pastexhibitions.guggenheim.org/mondrian\\_to\\_ryman/](http://pastexhibitions.guggenheim.org/mondrian_to_ryman/)

<sup>63</sup> In fact McGilchrist explicitly states:

‘The right hemisphere tends to represent the world realistically, with visual detail and in three dimensions, with depth’ (78); as experienced, and the left ‘tends to represent the visual world schematically, abstractly, geometrically, with a lack of realistic detail, and even in one plane’ (78).

Thinking of abstract and figurative as opposing positions in painting practice, we can think of the **surface** as being the place of resistance and tension between the two oppositions (see figure 11, page 45). All three of these sets of oppositions are connected and separated by an *intermediate*<sup>64</sup> phase or space.

THE FORMAL IMPULSE > THE *PLAY IMPULSE* < THE SENSUOUS IMPULSE

THE LEFT HEMISPHERE > THE *CORPUS CALLOSUM* < THE RIGHT HEMISPHERE

ABSTRACT PAINTING > THE *SURFACE* < FIGURATIVE PAINTING

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<sup>64</sup> Defined as ‘coming between two things in time, place or character’ Retrieved from <http://oxforddictionaries.com/definition/english/intermediate?q=intermediate+>

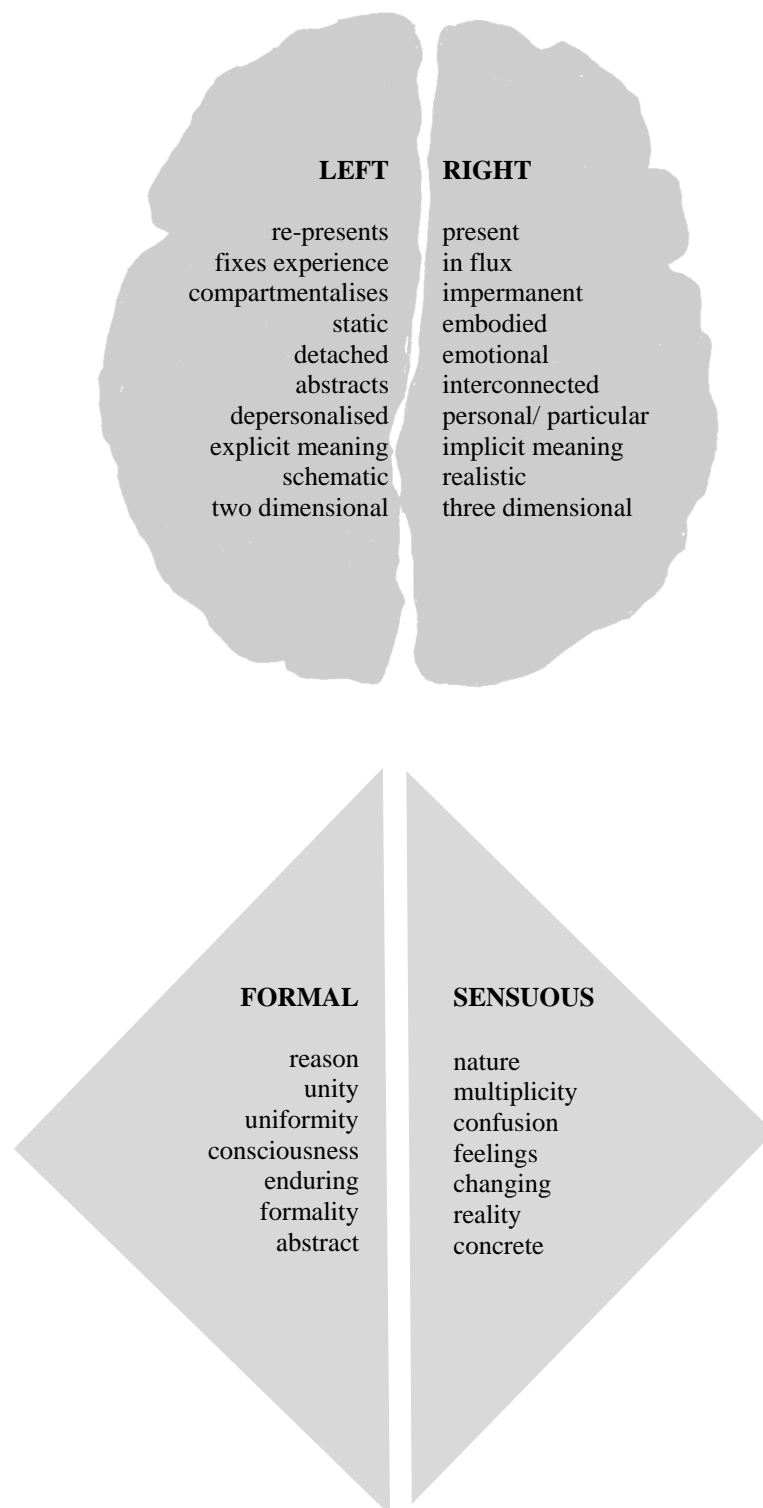


Figure 10: Diagrams for McGilchrist's theory from page 30, and Schiller's from page 35.

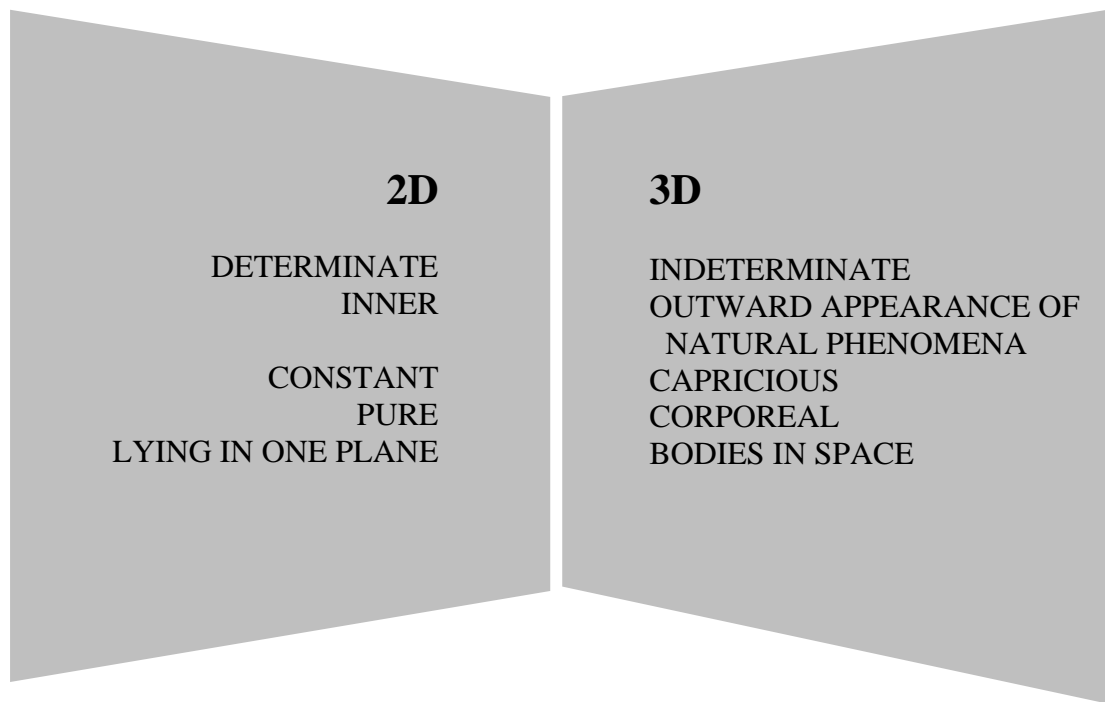


Figure 11: 2D and 3D diagram based on Mondrian's binary oppositions to show the opposing qualities of abstract and figurative painting. These correspond with the other diagrams in Figure 10, reproduced here from earlier sections for comparison.

## EXPERIMENTS ON THE SURFACE

### *Medium*

- A liquid (e.g. oil or water) with which pigments are mixed, with a binder, to make paint.
- The middle quality or state between two extremes.

65

Taking the first definition of *medium*; in my painting practice the surface is activated by oppositions<sup>66</sup> – playing 2D against 3D – and this is made possible by the use of a transparent alkyd medium. *Split* (figure 12) shows the quality of surface achieved. The medium<sup>67</sup> contributes in the following ways:

- Glazes can be made that vary in transparency.
- Colour can be built up using these thin glazes and this maintains the luminosity of colour and gives it ‘depth’ – the under painting, and other colours show through.
- This works well with masking tape to make very precise edges.<sup>68</sup>
- Using very soft, wide brushes the paint can be blurred, even more viscous paint (when less of the medium is used).
- The surface remains shiny and reflective even after drying.

### 2D AND 3D DEFINED BY THEIR OPPOSITION TO EACH OTHER.

In these earlier paintings the following oppositions are set up to create a play between the flatness of the painted surface and its potential to represent the illusion of depth:

- abstract/figurative
- geometric & linear/irregular & natural
- hard edged/soft focussed
- opaque/transparent

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<sup>65</sup> Definition retrieved from <http://oxforddictionaries.com/definition/english/medium>.

<sup>66</sup> This shall be explained in more detail later

<sup>67</sup> The brand name is LIQUIN (original).

<sup>68</sup> As it is quick drying, the tape can be removed and other parts already painted are protected.



Figure 12: *Split*, 2011. 60 x 100 cm. The under-painting is evident but veiled by the reflective surface. Deliberate brush marks are used (some horizontal, some vertical) again to draw the eye to the surface, and this is partly what gives the illusion of the surface as a veil or screen, with something 'corporeal' behind it.

NOTE: in all of my paintings the materials used are oil paint on linen unless stated.



Figure 14: Top, *Untitled*, 2001. 100 x 150cm. Figure 15: Bottom, *Highlights*, 2005. 60 x 60cm

The illusion of depth is dependent on a contrast with its opposite; lack of depth, (mere surface). And the surface is made obvious when contrasted with the illusion of depth. Both are needed, to define the limits of the other.

In *Highlights*, (figure 15) a black plane slips over the bottom left hand corner, and hints at something larger out of frame (see figure 13). The hard edges<sup>69</sup> that echo the frame of the support play against the soft focus of the highlights and shadows in both of these paintings. They help the eye read the surfaces as different.

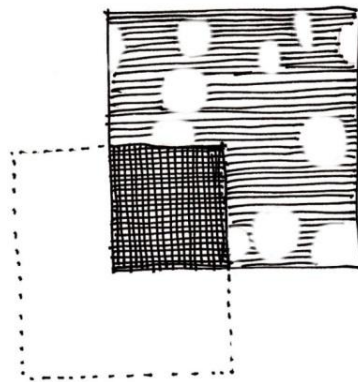


Figure 13: Diagram for composition of *Highlights*.

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<sup>69</sup> These are made with masking tape





Figure 16: *Pink*. 2004. 100 x 100cm.

*Pink* (figure 16) looks abstract at first glance. But there is a disruption; a shift in the tone in the border, at the top on the right, which could be read as a subtle shadow. This shows something at odds with the squared, uniform, regularity of the surface. The under-painting was painted in orange: the border (top and to the left), and a very subtle and out of focus tree top was painted at the bottom of the painting using large very flat brushes to blur the paint (see diagram, figure 17). Then a layer of almost opaque pink was painted over the whole canvas so that the orange under-painting was obscured; making the tonal changes and colour shifts very subtle.

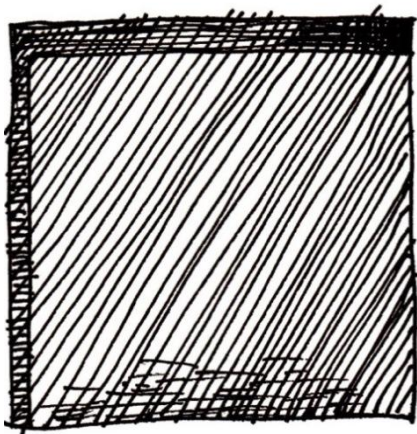


Figure 17: Sketch showing the disruption by the ‘figurative’ elements in *Pink* (fig 16).

The self-defining ‘tools’ of modernist abstract painting are at work here – edges made with masking tape; all surface no depth. However unlike an abstract painting where all content is removed, content is implied in *Pink*, albeit in a minimal way:

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- the expressive use of colour as it appears in nature (in the petals of a peony, see figure 19) – is a move away from the un-modulated single colour one finds in a Barnett Newman ‘zip’ painting for instance (see figure 18).
- the shifts of tone in the shadow on the border imply there is a light source, and therefore another dimension or space.

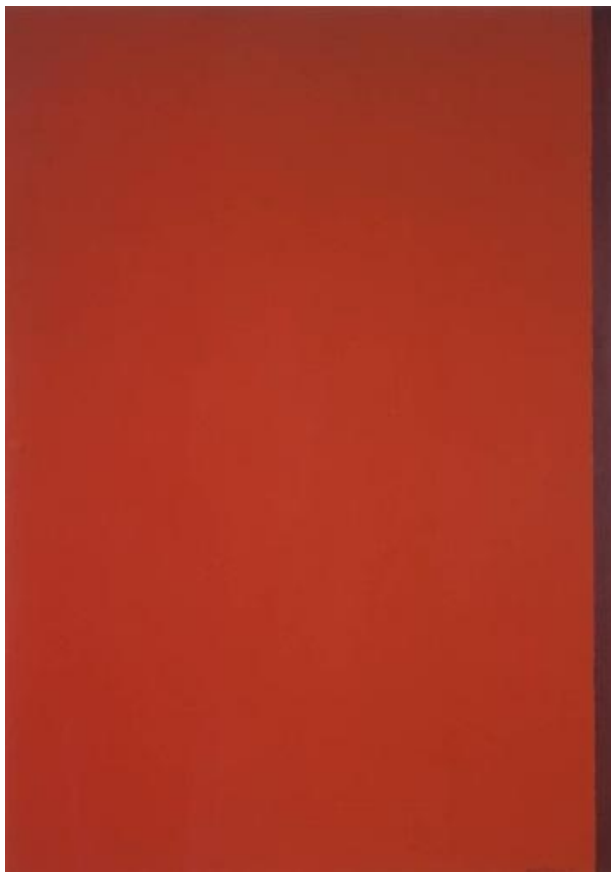


Figure 18: Barnett Newman, *Eve*, 1950. Oil on canvas, 238.8 x 172.1cm. Copyright Tate, London, 20

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<sup>74</sup> Subject matter, figurative elements are other words for content.

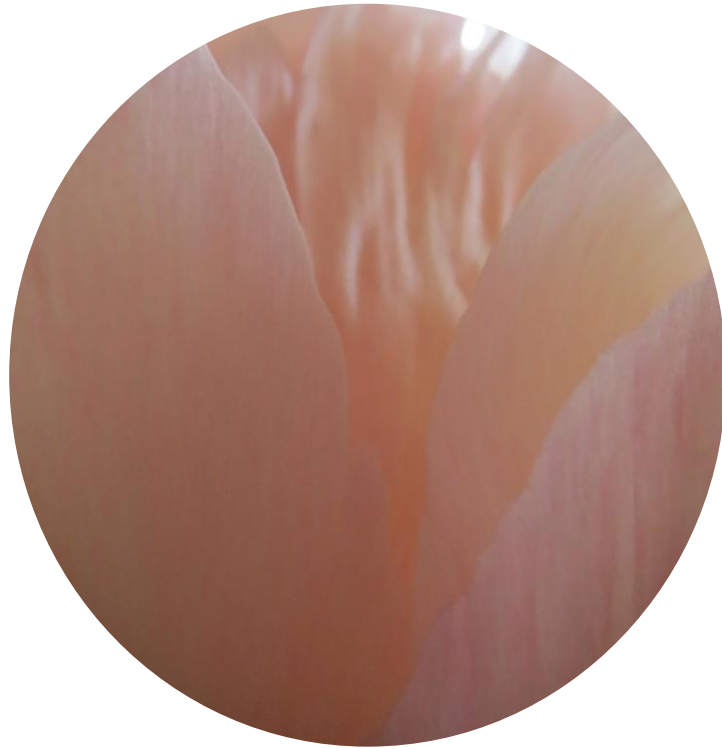


Figure 19: Study from nature (for colour reference). The colour in *Pink* – in fact not one pink but many pinks – was observed in a peony. Here is Schiller's 'multiplicity' of nature.



Figure 20: A scan of a study for a painting



Figure 21: Gary Hume. *Innocence and Stupidity* (1996) .

<sup>75</sup> Gloss paint on two aluminium panels  
Two panels, each 2210 x 1700 mm.

#### FIGURE AND GROUND OPPOSITIONS: AN OSCILLATION

The study for a painting in figure 20 is a found image. It is an example of how even subtle tonal shifts create contrasts which play against each other; as in *Pink*. The original reproduction was cropped to show the most minimal representation of this tension between the abstract and figurative elements in a painting.

The flatness of the surface/ perspective lines indicate depth  
Man-made architecture/nature (the sky)  
Finite (building)/infinite (sky)

This image is equivocal. The active edge that defines the two oppositions also keeps them separate. They are therefore in balance and an oscillation is achieved. Gary Hume uses this device; playing off silhouetted forms against the background.

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<sup>75</sup> © Gary Hume. Photo: Stephen White

Retrieved from <http://www.tate.org.uk/context-comment/blogs/work-week-innocence-and-stupidity-gary-hume>

In Hume's painting *American Tan IX* (figure 22), the surface is highly reflective, but there is no sense of depth or illusion here. There is a raised ridge running around the edge of the figure, this is in relief – stands off the picture plane. It is as if paint has been poured into that edge, as if the figure were a vessel for the yellow paint and an opaque silhouette at the same time. Figure 23 is a study for a painting; to take the form of the silhouette and take it one step further by introducing the illusion of depth without losing the sense of everything playing on one plane – the surface.

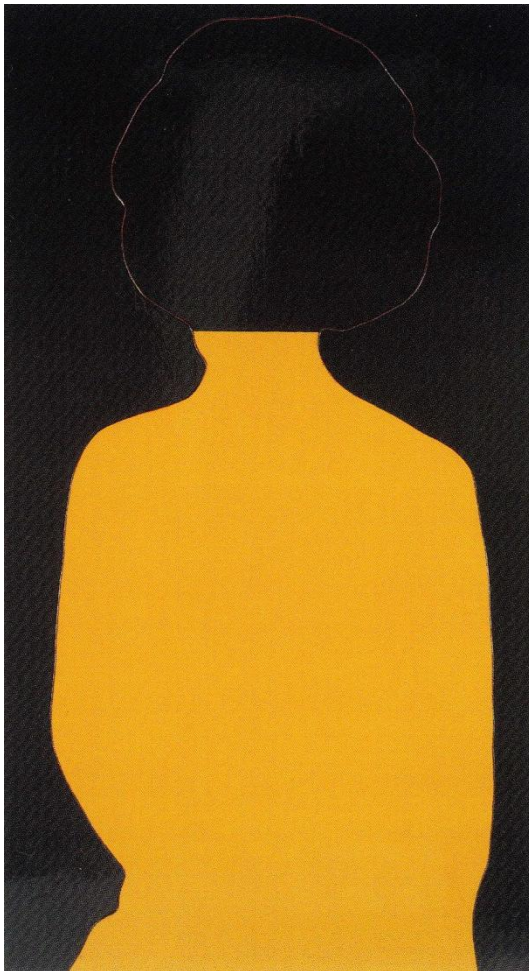


Figure 22: Gary Hume's *American Tan IX*, 2006-7. Gloss paint on aluminium. 208 x 117 cm (copyright the artist). The postcard from the Gary Hume exhibition at Tate Gallery 2013.

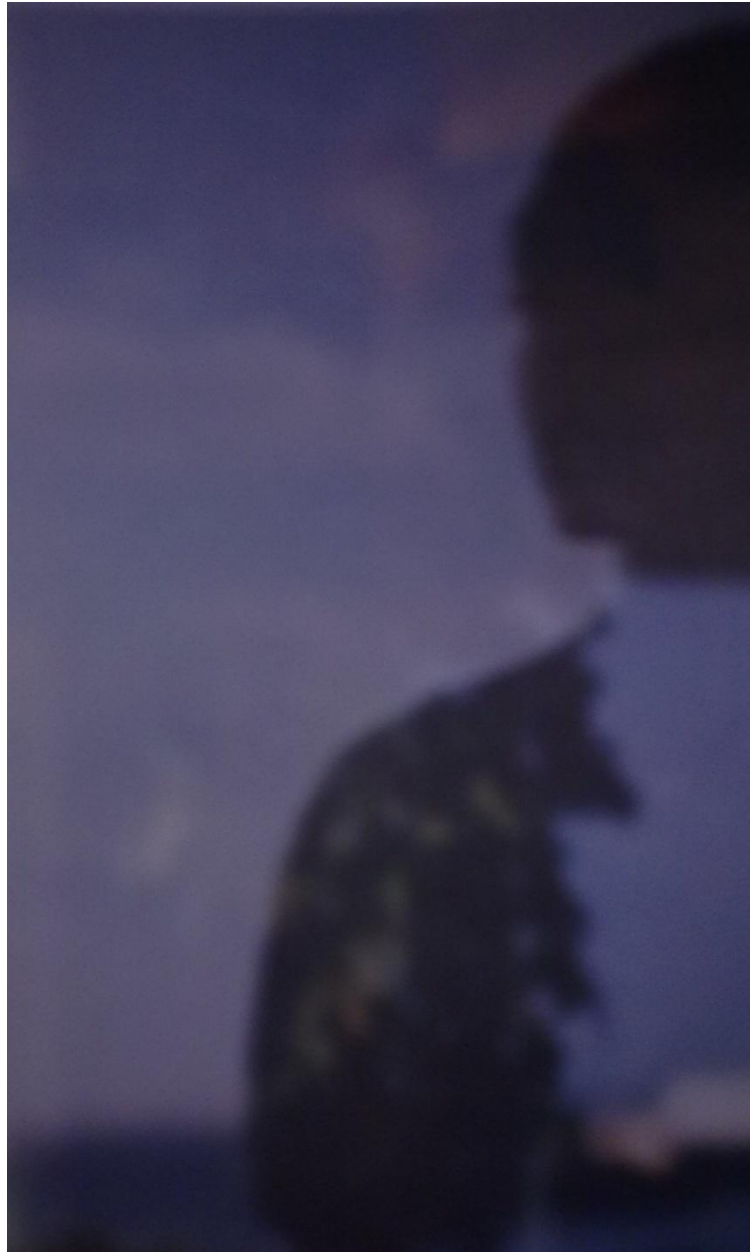


Figure 23: Taking Hume's silhouette: this is a study made from a clipping from a magazine. The figure is a silhouette on the surface; a flat reflection of a figure on glass. The surface of the glass is both reflective and transparent at the same time so the scene through the glass is visible too. The figure and the landscape are evident, connected but separate, on the same surface.





Figure 24: Study for the painting - *Tilt*, 2012 (figure 25). This is a tiny part of a photo, (out of focus flowers against the edge of a red vase) . I photographed this again so that the image was even more degraded and out of focus.

*Tilt* and *Angle* (figures 25 and 27) were made with the same idea in mind, adding the tipping of the picture plane; the shape of the picture plane itself acting as a second reflecting surface. The colour is saturated but modulated, like the colour of the flowers in reality. The two images, the flowers and the coloured square reflecting them, are held at the surface in play; the edge of the tilting plane playing off the organic irregularity of the out-of-focus flowers.

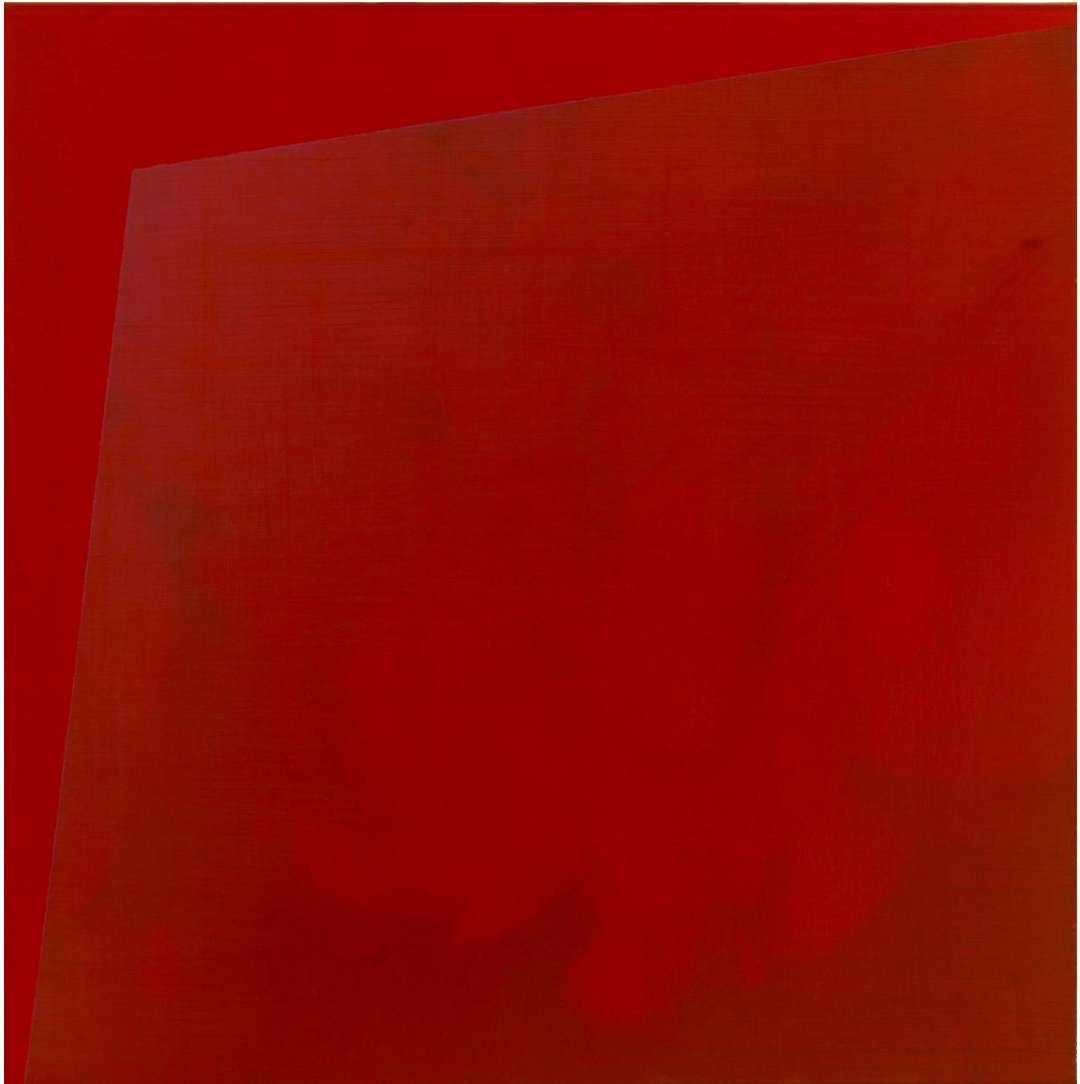


Figure 25: *Tilt*, 60 x 60 cm.

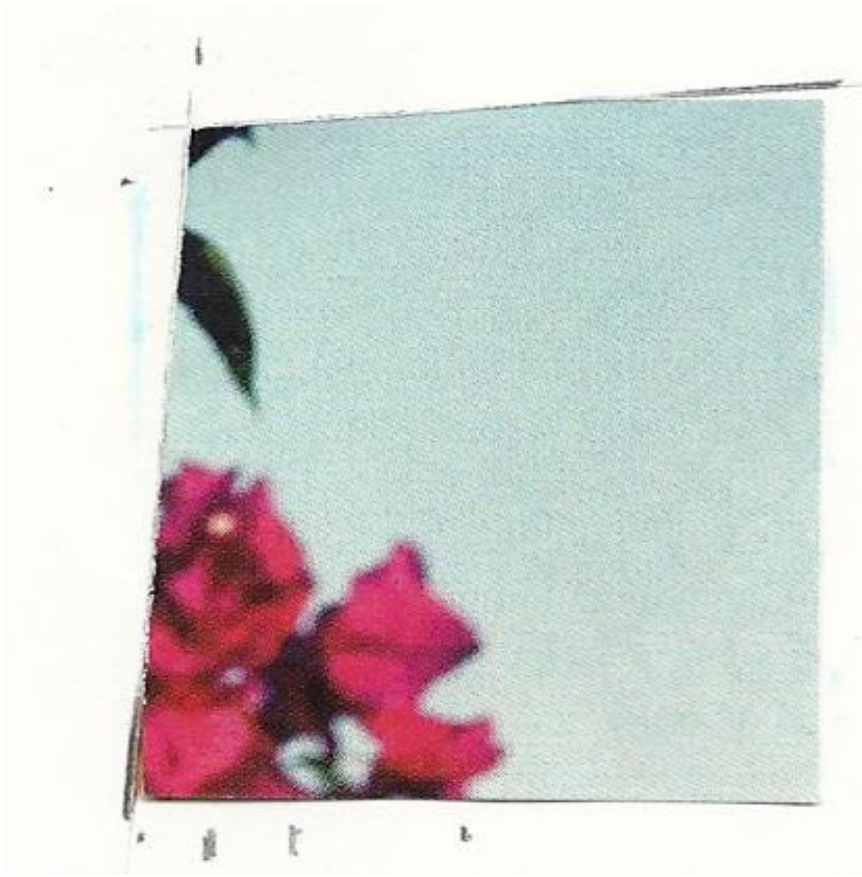


Figure 26: Study for *Angle*.

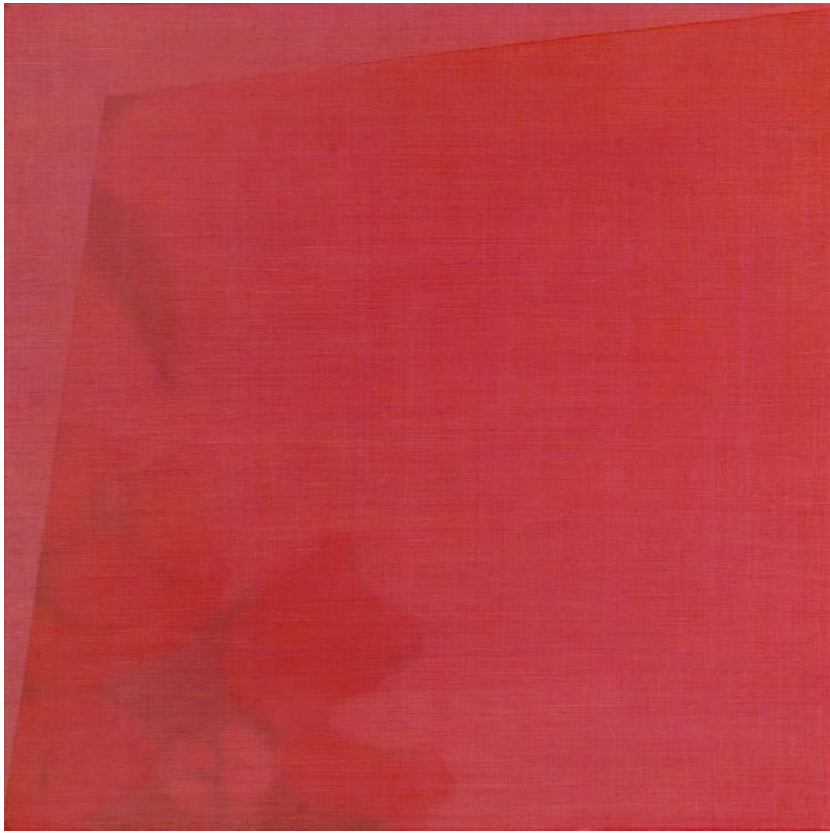
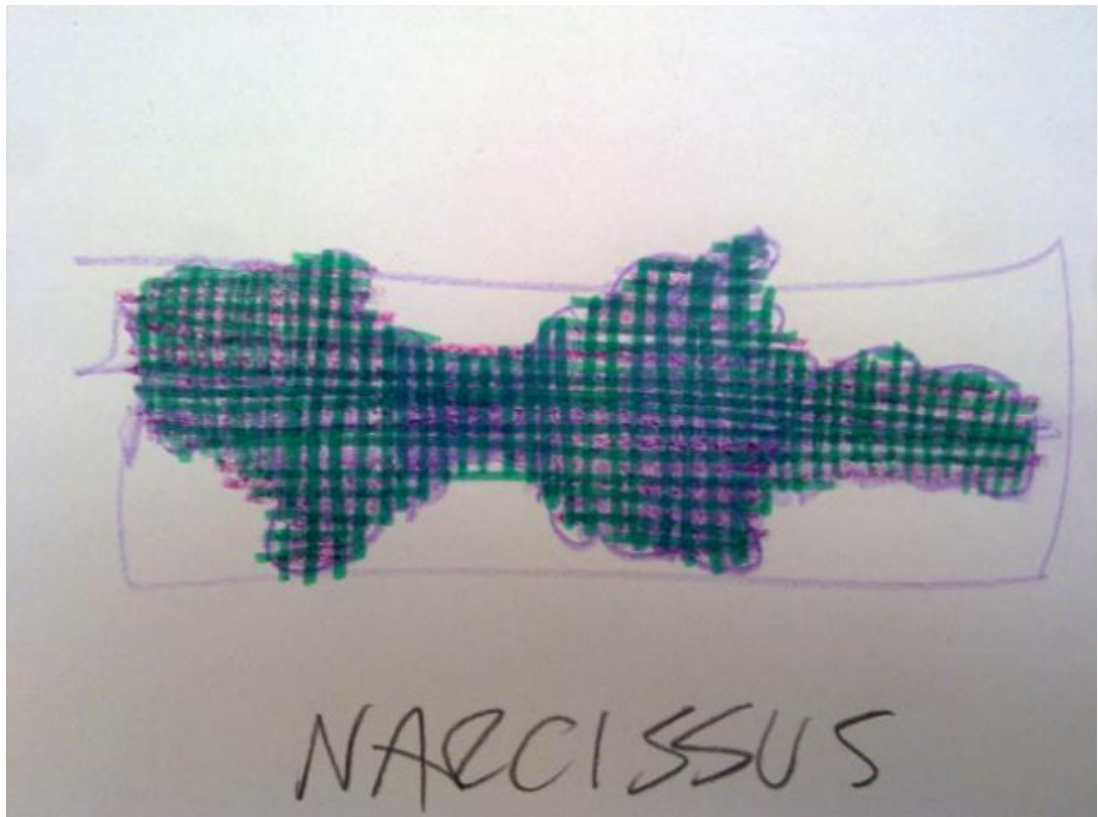


Figure 27: *Angle* , 2011.40 x 40 cm.

GEOMETRIC/LANDSCAPE 1. *Reflect (pond)* 2012. 100 x 150cm.



Figures 28: study for *Reflect (pond)* 2012. 'Narcissus' was a working title. The study shows the idea of using complementary colours to describe the shape of the trees and their reflection.



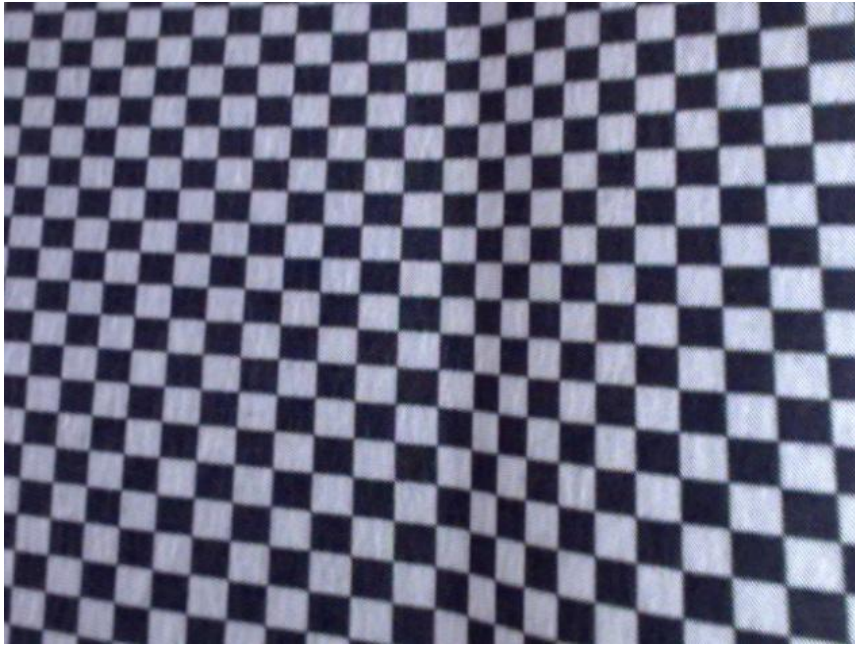


Figure 29: A photocopy of a print of some floor tiles was bent to create a curve, and this was paired with a separate image of a landscape.

Figure 30: A photo of trees reflected in a pond, this picture contains some of the irregularity and instability of nature; the water is still enough to reflect the trees.

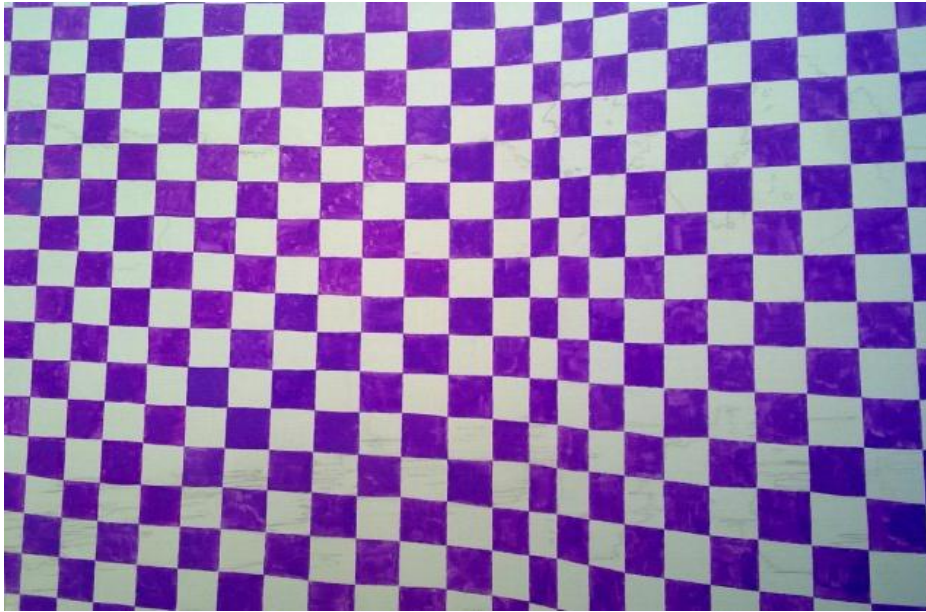


Figure 31: The under-painting of the ‘checkerboard’; man-made pattern; in un-natural colours.

Figure 32: An complementary colour is painted against the purple of the checkerboard pattern, so that the figure and ground start to ‘vibrate’.

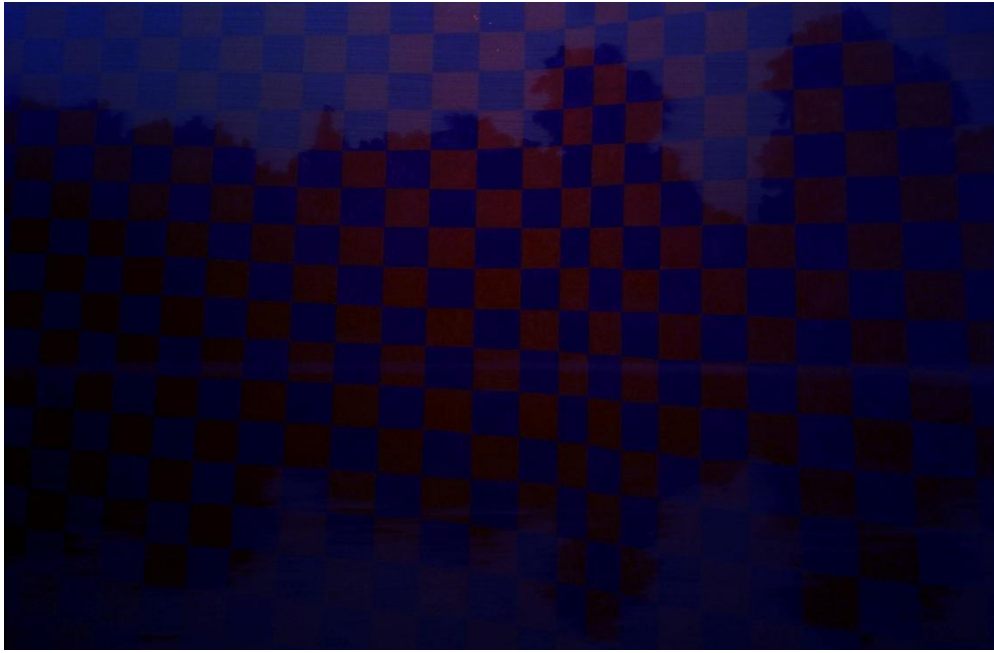


Figure 33: The silhouette is created by painting a layer of cream glaze to indicate the sky and its reflection. A blue transparent glaze is painted over the image. The final glaze of a burnt sienna (warm brown) is applied to the whole image, with large flat brushes, so that the surface now appears to have a gauze or film of fabric over it. The surface becomes 'transparent'; giving the illusion of depth. However, the surface is also visible - the brush marks in the thin glaze and its reflective quality, draw attention to, and therefore make visible, the surface and the play 'beneath' it. The final painting is too dark to reproduce here successfully .



GEOMETRIC/LANDSCAPE 2: *Berlin (green)* 2012. 70 x 140 cm.

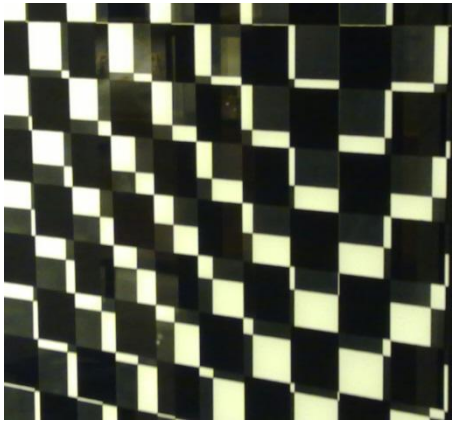


Figure 34: (Top left) A study of a photo taken of a shop window in Berlin. The grid was painted on glass and there was a mirror sitting behind it, so the surface of the glass showed the grid and showed *through* to the reflection of the grid in the mirror underneath; two images on one surface.

Figure 35: (Top right) A found image of trees in silhouette against the sky. The original image was lost, but very similar to this one (used for another painting). The important thing about the quality of the image was that this was in silhouette and clearly from nature.

Figure 36: (Above) Detail showing brush marks in the glaze and how the colour intensifies when each positive shape of the checkerboard overlaps one 'underneath'.



Figure 37: *Berlin (green)* 2012. 70 x 140 cm. A found image of leaves in silhouette (similar to figure 35) is painted over the right hand side of the painting, but only on the positive shapes, not the spaces in between. The effect is one of introducing another reflection, as if the combined checkerboards were now fused on one surface, much like the image on page 57 (figure 23).

## PRACTICE: IN SUMMARY

Thinking about the second definition of *medium*<sup>76</sup>: If abstract painting can be thought of in terms of a *negation* of the figurative<sup>77</sup>, my practice seeks a *negotiation* between abstract and figurative painting; to find co-operation between the two. The resulting to-ing and fro-ing at the surface of the painting is like Schiller's *play impulse* at work. The function of the surface is similar to that of the *corpus callosum*, connecting the opposing elements of painting practice – allowing communication – and keeping them separate at the same time. The oppositions are held in balance because they define each other and set limits for each other precisely because they are **both** evident at the same time in oscillation. So rather than the painted surface being *either* 'a blind wall'<sup>78</sup> (Fer, 1997, 154) *or* the illusion of a window into a three dimensional space, it can be both.

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<sup>76</sup> The middle quality or state between two extremes.

<sup>77</sup> Ferguson says 'any reference or association with what is not purely formal undermines the painting by introducing depth' (Ferguson, 2007, 45). Formal means in this instance, the physical means of painting, not a reference to Schiller's use of the word, in fact it has almost exactly the opposite meaning in painting practice and theory.

<sup>78</sup> Briony Fer quotes Russian critic Nikolai Tarabukin, who called Rodchenko's monochrome 'a blind wall', 'suggesting an unyielding screen which shut down the aesthetic possibilities of the object' (Fer, 1997, 154).

## CONCLUSION

Schiller's *play impulse* is embodied as a methodology in this thesis. An oscillation between the two different texts allows the reader to experience the *play* that is possible between them. Their differences remain evident; Schiller in his time and context; McGilchrist in our time, his context. However, there are strong parallels between the theories. Both speak of the duality of human nature; the need for balancing of the opposing impulses that shape existence. Both stress the importance of culture to limit each impulse and create reciprocity between the two; as we need both to have a 'recognisably human world' (McGilchrist, 2009, 3). There are implications here for art practice and theory; and other cultural activities; perhaps the subject of further research.

A reciprocal reframing has been accomplished. Applying McGilchrist's concepts from neuroscience to Schiller's *play impulse*, has provided a new way of looking at Schiller. Though it was written 214 years previously, Schiller's *play impulse* illuminates McGilchrist's concept of the bi-hemispheric nature of the brain; shows a way for artists and art theorists to see into this alien field of neuroscience.

This practice based research has established, through testing it in practice, that the *play impulse* works successfully as a methodology for painting practice; as a way of creating a balance between theory and practice; abstract and figurative painting.

Applying these findings to art theory and aesthetics, may be the subject of further research and could have wider implications for art practice and theory; and for future collaborations between neuroscientists and art theorists and philosophers.



# APPENDICES

## APPENDIX 1

‘Philosophers spend a good deal of time inspecting and analysing processes that are usually – and perhaps must remain - implicit, unconscious, intuitive; in other words, examining the life of the right hemisphere from the standpoint of the left’ (McGilchrist, 2009, 89).

## APPENDIX 2: A NOTE ON HEGEL’S *AUFHEBUNG*

McGilchrist says of ‘the apparently antagonistic relationship of the two hemispheres’ (91): it is neither that the products of one hemisphere negate the products of the other, nor that in some bland sense they merely ‘complement’ one another. Their incompatibility permits instead, in a dialectical synthesis, something new to arise<sup>1</sup>. He suggests the model of Hegel’s conception of *Aufhebung*;<sup>2</sup> (206). McGilchrist explains *Aufhebung* as a ‘dialectical synthesis’ ‘where something new comes into the process, not negating the earlier stages, but transforming them’ (McGilchrist, 2009, 203).

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<sup>1</sup> There is also an intra-hemispheric difference as well as the inter-hemispheric difference that of the relationship of the frontal lobes ‘the most highly evolved and most distinctively human of all regions of the brain.’ It exists to ‘exert control over’ other parts of the brain. The frontal lobes ‘achieve what they achieve largely through what is normally described [...] as *inhibition* of the posterior part of the same hemisphere.’ However, the inhibitory effect of the frontal lobes on the posterior of the left hemisphere is more ‘black and white’ in this process. In the right hemisphere this process might be described as more of a ‘modulation’, rather than an inhibition. He describes modulation as a ‘process that resists, but does not negate. It is best thought of as the imposition of necessary distance, or delay, enabling something new to come forward’ (91).

<sup>2</sup> So that ‘what is offered by the right hemisphere is offered back again and taken up into a synthesis involving both hemispheres’ (206).

Schiller profoundly influenced Hegel.<sup>3</sup> And it is clear when reading McGilchrist's thesis; influenced as it is by this model, that there are similarities here. However, if we take *synthesis* to mean 'the combination of components or elements to form a connected whole'<sup>4</sup>, Schiller's *play impulse* - the concern of this thesis - describes the stage before such a reconciliation; when opposites are in balance, both evident, at the same time. It is because we are aware of the opposing impulses that act upon us, at the same time, that an oscillation can take place between the two, *before* the possibility of synthesis (if that is indeed possible). When having the experience that the *play impulse* describes - both impulses at work yet in balance - we feel human in the fullest sense of the word.

### **APPENDIX 3: 'HALL OF MIRRORS'**

Contemplating McGilchrist's comment about the self-reflexivity of the left-hemisphere being like a 'hall of mirrors', I took photos of reflections between two mirrors (strictly speaking, one mirror reflecting another). The first photograph (page 71) shows the first set of self-reflecting reflections (perhaps 4) as this is taken at an angle so that only one end of the mirror was in frame. The second photo shows, (bottom right) by focussing on the centre of the mirror rather than the edge of it, the distortion that the reflected windows undergo; just a reflection of a reflection of a reflection, until the 'reality' of the straight lines of the window frame and the wall are distorted.

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<sup>3</sup> Schiller profoundly influenced subsequent thinkers such as Schelling and Hegel and contributed to the development of German Idealist philosophy (Audi, 1995, 818).

<sup>4</sup> Definition retrieved from <http://oxforddictionaries.com/definition/english/synthesis?q=SYNTHESIS+>





#### APPENDIX 4

James Elkins in his introduction to *Beyond the Aesthetic and the Anti-Aesthetic* (Elkins, 2013)<sup>5</sup> says that the ‘pedagogic division drawn between aesthetics and anti-aesthetics within art institutions’ is implicit but definitely at work (Elkins, 3). As a result of this division, some contemporary practices are ‘enabled by refusing to engage the pertinence of the theoretical and historical formations that attempt to account for them’ and some theorists are refusing to engage with some contemporary practices (Elkins, 15).

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<sup>5</sup> Retrieved 21 July, 2013 from page 15:  
[http://www.academia.edu/3106019/Beyond\\_the\\_Aesthetic\\_and\\_the\\_Anti-Aesthetic\\_introduction](http://www.academia.edu/3106019/Beyond_the_Aesthetic_and_the_Anti-Aesthetic_introduction)

## APPENDIX 5: MONDRIAN'S LINE IN BINARY OPPOSITIONS

An excerpt from Briony Fer's book *On Abstract Art* (1997).

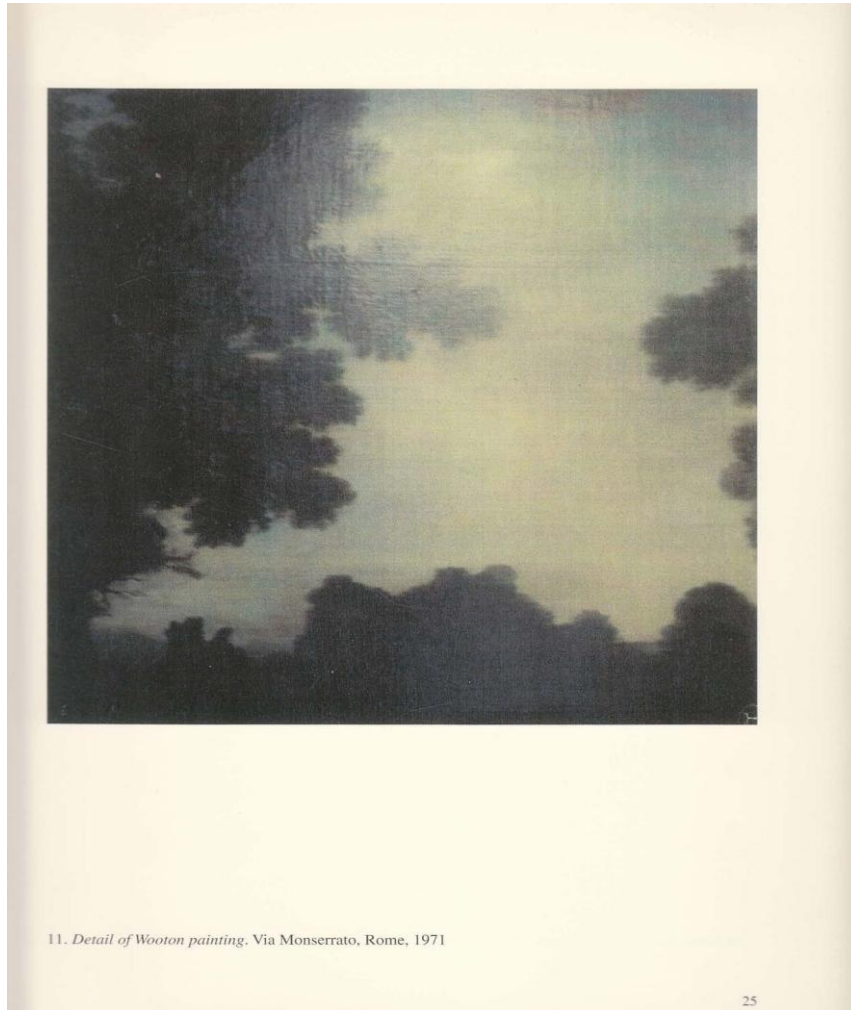
Mondrian's 'aim was to find a 'new plastic' or 'new structure', by reducing the corporeality of objects to a composition of planes that give the illusion of lying in one plane. All the antinomies – the indeterminate, the natural, the capricious, the feminine – all the negative terms focus in this term of corporeality, the three-dimensional quality of bodies in space. It is corporeality which threatens to pollute the 'purity', taken here as a term of resistance, allowing a composition which has the illusion of lying in only one plane' (40).



Piet Mondrian. *Chrysanthemum*, 1908–09. Charcoal on paper, 25.4 × 28.7 cm.

Solomon R. Guggenheim Museum, New York, 61.1589. © 2007 Mondrian/Holtzman Trust  
Retrieved from <http://www.guggenheim.org/new-york/collections/collection-online/artwork/2999?tmpl=component&print=1>

APPENDIX 6. AN EXTRACT FROM A RESEARCH JOURNAL ESSAY, 2013.



A scan of a page in *Cy Twombly Photographs: 1951-1999*, showing *Detail of Wootton painting* (27cm x 26cm); part of a painting by John Wootton (1682 – 1764). This photo was taken in Via Monserrato in Rome, where Twombly lived. (Roscio, s.d.,25)

This is a scan of one page in a book of Cy Twombly's photographs.<sup>6</sup> Looking closely at the scanned image; past its surface; the scanned shadows of the curve of the page; the page number and caption; we find the image of an image in a square format. One step further and we see the weave of canvas and the painterly marks of a painting; just part of a painting.

Twombly has photographed a work of art. So the scan on the next page is an image of an image of an image of an image - a scan, a book page, a photograph, and a painting of a portion of the visible world.

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<sup>6</sup> The photograph was taken in 1971.

This is a methodology for practice constructed out of looking, choosing, examining, recording, framing (at the time within the viewfinder), perhaps cropping again. When I look at the image overleaf, I consider that it has been made by focusing on the visible - through the camera, but through two other minds as well, including my own. With each new mind that encounters it, the representation will be adjusted, as that person's particular and personal beliefs and understandings of the world, conscious and otherwise, add to the work.

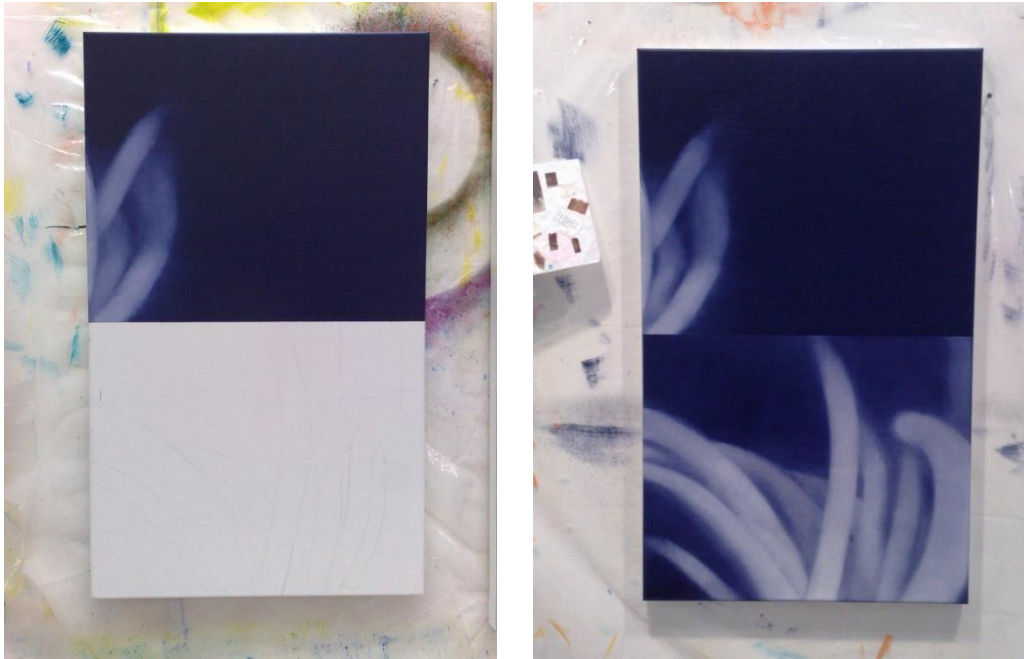
As a visible object it is directed outwards to the viewer, but also backwards; time has elapsed. At least 207 years have happened between the painting and the photograph; 42 years between Twombly's photo and the scan. There is a re-focusing with each iteration; with each iteration there is a transformation. This photograph is a work of art made from looking at a work of art; from looking at the visible world from different 'angles', and yet the idea remains transparent and evident even up to the final image.

There is an intention at work with each iteration, but the image is also made by incorporating the incidental and unbidden, even the accidental. The reflection on the surface of the canvas in the original painting by Wootton is there. Perhaps it was this point of play - of surface against depth - that caught Twombly's attention in the first place?

This is a good way of explaining the process or methodology of my own practice. This iterative process corresponds with, and has also informed my choice of methodology for my MRes thesis.

Twombly reframes part of Wootton's painting and directs us to look at it differently; to look at this object from the past in a new way. Can McGilchrist's thesis contribute to a review of Schiller's *play impulse* in the same way?

## APPENDIX 7



These under-painting shows how a fragmented image is painted using masking tape to define the edge. Once the paint is dry the other area is masked off and painted and a sharp line distinguishes between the two. The photograph of the final painting *Split*, 60 x 100 cm (page page 45) shows the reflective, transparent surface. The shine draws attention to the surface and thereby adds to the illusion that there is depth behind the picture plane. The transparency of the glaze is set against the un- modulated colour of the 'zip' of blue<sup>7</sup> on the right hand side to show the opposition of 2D and 3D at the surface.



Figure 1: (left) Collage study for *Split*. A found image of magnified feathers was cut in two and re-arranged.

<sup>7</sup> A reference to Barnett Newman's 'zip' paintings.

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