

What do we Like to Look at and Why?  
An Examination of the Combination of  
Factors of Nature and Nurture  
to Create the Phenomenon of  
'Perceived Beauty'



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# What do we Like to Look at and Why?

## An Examination of the Combination of Factors of Nature and Nurture to Create the Phenomenon of 'Perceived Beauty'.

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## INTRODUCTION

It is common belief that the opinion of beauty is very varied and subjective to each individual, however it is evident that some ideas of beauty are more popular than others. When we look at something that we perceive as 'beautiful', whether this opinion is 'popular opinion' or not, sometimes we have no logical reasoning or words to explain why we think it is beautiful, but the experience of looking at it is enjoyable, and we are probably experiencing positive emotions as a result. In this way, it is agreed that we 'like beautiful things'. The beautiful thing also has the characteristic of making us want more of it<sup>1</sup> under a relentless, insatiable desire.<sup>2</sup> The phenomena of beauty is universally accepted, and all cultures have the 'ability to say that it exists'<sup>3</sup>, even if no one can put their finger on exactly what 'it' is. Sometimes we can break down a visual into its elements to describe what we are looking at, but even then it may not explain *why* we like them individually, or 'it' as a whole.

My original interest stemmed from a curiosity as to why certain designs are so popular; why some trends don't stop coming back round; and whether the secret to a successful aesthetic could be identified as a logical combination of characteristics. In this dissertation, 'perceived beauty' refers to the positive end of the spectrum of 'taste', with 'perceived ugly' at the opposite end. I am intending to find out if the supposed characteristics of beauty might have a consistent aesthetic core whilst also having a dynamic outer layer that is subject to nurture. Aesthetic characteristics as products of natural origin will be innate\*, universal, unchangeable, and common to all humans on account of being human.<sup>4</sup> Aesthetic characteristics as products of nurtured origin will be moulded by their environment, subjective to each individual, and changing all the time on a general and a personal level.

In order to find the origins of natural or nurtured aesthetic opinions, I will have to explore in depth the natural and nurtured background of humans themselves, with regards in particular to how we form opinions; how we see and what we see, and the direct and indirect impacts that these factors have.

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<sup>1</sup> Stephen Bayley, Author, Critic, Columnist, Consultant, Broadcaster, Debater and Curator; London, email response December 13th 2015

<sup>2</sup> D. Schefer, *What is Beauty, New Definitions From the Fashion Vanguard*, London, Thames & Hudson, 1997

<sup>3</sup> Arseny Finkelstein - *Neuroaesthetics: on Beauty and Creativity in the Brain*, Youtube, (30/10/14) <<https://www.youtube.com/watch?v=K9m86vzHmE8>> (accessed 20th May 2015)

<sup>4</sup>\* "INNATE: *Originating in or arising from the intellect or the constitution of the mind, rather than learned through experience*" Innate Definition, Dictionary, <<http://dictionary.reference.com/browse/innate>> (accessed December 20th 2015)



## CHAPTER 1

### “NATURE”

Chapter 1 will explore the innate characteristics of perceived beauty that are common to all humans universally. I will present evidence throughout history that proves that there are characteristics that are immune to the effects of time; I will give examples of identified characteristics and principles in aesthetics that are commonly accepted as ‘beautiful’; I will talk about how taste is an offspring of the act of seeing, and so explain how we see on a scientific basis. Further to this I will explain how beauty is defined by emotion, and the relationship that unites them. Similarly I will talk about the reward centre activation, and the idea that beauty might be a fundamental part of human instincts.

## CHAPTER 2:

### “NURTURE”

Chapter 2 will examine the perspective that characteristics of perceived beauty are dynamic products of the environment, and attempt to find out where they originate from. I am looking at how opinions are entirely subjective, and that opinions are a result of being conscious beings, meaning that they are always changing. I will explain that meanings come from connotation not denotation, and how semiotics is the study used to understand these meanings; how we are constantly learning and absorbing external information; the influence of culture on taste, and how beauty reflects patterns of cultural change in history; and also how changes happen.

# CHAPTER 1

"Beauty is not in the eye of the beholder [...] it is a real thing based on visible qualities of line, form, light, proportion and grace".<sup>5</sup>

## INTRODUCTION

Some say beauty can be explained by facts, figures and formulas, for example the ancient Greeks, who were 'convinced that an explanation of and definition for beauty was as concrete and discoverable as the answer to why the days got shorter in winter'.<sup>6</sup> Today 'Neuroaesthetics' is the area of research claiming that beauty perception and art appreciation are soon to be explained as bi-products of explaining consciousness: all soon to be products of purely chemical activity of the brain.<sup>7</sup>

This chapter provides evidence, and presents the arguments that strive to explain away the mystery of beauty as a biological phenomena that exists as the movement of matter, and follows set patterns and laws<sup>8</sup>. This side supposes that if culture died, (because it is as mortal as the humans who created it)<sup>9</sup>, the same aesthetics would be appreciated by the human race universally. This stems from beliefs that we are all bound together by the universe, for example: DaVinci said 'the workings of the human body [are an] analogy for the workings of the universe'.<sup>10</sup> This fundamental appreciation supposedly comes from the most prehistoric parts of the brain (where our most basic human instincts are controlled), and are unaffected by age, time, and culture. Questions I will be answering in this chapter include: 'What are the fundamental characteristics of beauty that are independent of time and culture?'; 'How do we process visuals and how does this process determine the success of an aesthetic?'; 'How does emotion contribute to the perception of beauty?'; and 'How is beauty perception related to survival?'.

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<sup>5</sup> D. Schefer, *'What is Beauty, New Definitions From the Fashion Vanguard*, London, Thames & Hudson, 1997

<sup>6</sup> 'The Math Behind Beauty', *Discover*, June 2007, <<http://discovermagazine.com/2007/jun/blinded-by-science>> (accessed November 25th, 2015)

<sup>7</sup> 'Iconic Turn: Prof.Dr.SemirZeki- Neural Concept Formation and Art', Youtube, 23-08-12 <<https://www.youtube.com/watch?v=A9w3n3OzDRQ>> (accessed 20th May 2015)

<sup>8</sup> J.P.Hudson, M.Nadal, F.Mora, L.F.Agnati, C.J.C.Conde, *"Art, Aesthetics and the Brain"* 1st Edition, OUP, 2015, Google e-Book pp.1-3

<sup>9</sup> J.P.Hudson, M.Nadal, *"Art, Aesthetics and the Brain"* 2015 pp.1-3

<sup>10</sup> 'Vitruvian Man', *BBC*, <<http://www.bbc.co.uk/science/leonardo/gallery/vitruvian.shtml>> (accessed November 27th, 2015)

## HISTORICAL EVIDENCE

There is evidence in history that beauty has core characteristics. It is widely accepted that the phenomena of beauty, alongside the phenomena of consciousness, has been wondered about since ancient times by philosophers and religions;<sup>11 12 13</sup> the Ancient Greeks especially, who believed that 'beauty can be described by numbers'.<sup>14</sup> They based their classical sculpture on strict ratios<sup>15</sup>, and these were successfully aesthetic because they agreed with the field of vision of the eye.<sup>\*16</sup>

Fashion is a good example of timeless aesthetics, because it appears to be on a constant cycle- described by the author of 'Fashion Theory' as 'evolution without destination'.<sup>17</sup> Despite constantly 'changing', it always seems to come back to essential characteristics, and it is said that 'there are many changes that fashion will not make'.<sup>18</sup> As much as beauty might be a 'subjectively perceived opinion', some things are bound by limitations that can impose themselves as 'aesthetic laws', such as the human body shape itself.

An explicit example of an 'immutable ideal beauty'<sup>19</sup> is the 'Grecian Goddess'. This is evident in Fig.1. Fig.2. and Fig.3. which show the cycle of this particular fashion over time. Considering the time between each image, it is clear that they resemble the same aesthetic of silhouette and drape, and the appeal has not succumbed to the effects of time or culture.

Another relentless and culturally-independent popular theme in fashion is 'florals' (also seen in Fig.2.), and this is mainly because they are a 'Universal symbol of femininity'<sup>20</sup>. Their aesthetic appeal doesn't seem to waver.

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<sup>11</sup> J.P.Hudson, M.Nadal, "Art, Aesthetics and the Brain" 2015 p.8

<sup>12</sup> 'Consciousness', *Stanford Encyclopedia of Philosophy*, <<http://plato.stanford.edu/entries/consciousness/>> (accessed December 21st 2015)

<sup>13</sup> 'What In the World is Consciousness?', *Wellcome Collection website*, <<http://wellcomecollection.org/whats/what-world-consciousness>> accessed November 29th

<sup>14</sup> Stephen Bayley, 'The Ugly Truth', *Architectural Review*, Vol.233 Issue 1392, p22-23 (02/2013) <<http://web.b.ebscohost.com/ehost/detail/detail?sid=f7de8f33-9a73-45fb-b6e5-095691a38160%40sessionmgr112&vid=0&hid=115&bdata=JnNpdGU9ZWWhvc3QtbGl2ZQ%3d%3d#AN=85335952&db=asu>> (accessed November 29th, 2015)

<sup>15</sup> Stephen Bayley, 'The Ugly Truth', *Architectural Review*, Vol.233 Issue 1392, p22-23 (02/2013) <<http://web.b.ebscohost.com/ehost/>> (accessed November 29th, 2015)

<sup>16</sup> This is explained later in the chapter, as to why certain visuals are 'agreeable' on a scientific basis.

<sup>17</sup> M.Barnard, 'Fashion Theory, A Reader' Oxon, Routledge, 2007 p.48

<sup>18</sup> M.Barnard, 'Fashion Theory, A Reader' Oxon, Routledge, 2007 p.49

<sup>19</sup> H.Koda, 'Goddess, the Classical Mode', The Metropolitan Museum of Art, New York, 2003 pp.1-3

<sup>20</sup> 'Fashion Archives: The History of Floral Fabrics in Fashion', *Startup Fashion*, J.Bucci, 07/02/2015, <<http://startupfashion.com/fashion-archives-floral-fabrics>> (accessed December 10th, 2015)



Fig.1.  
190BC Greek Victory of Samothrace, Marble, ca. (Paris  
Musée du Louvre. Photograph copyright Reunion de Musées  
Nationaux / Art Resource, New York.)



Fig.2.  
1802, Costumer Parisien-Diadème de Roses - Tunique de  
Bal, (New York, 2003, The Metropolitan Museum of Art)

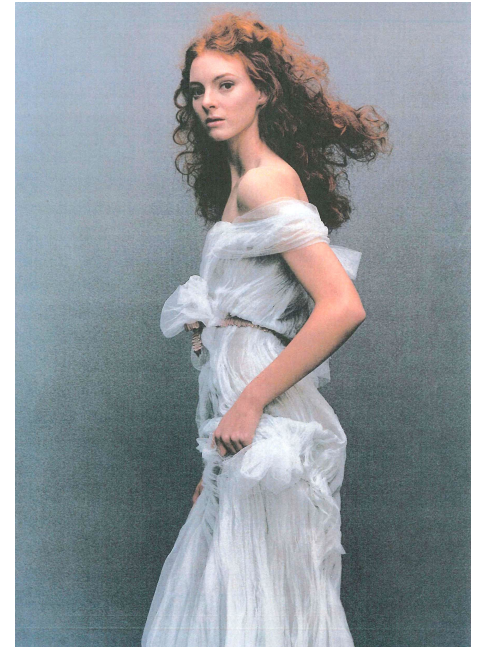


Fig.3.  
SS 1998, Christian Lacroix Evening Gown, white tulle,  
(photograph by Thomas Schenk, courtesy of L'Officiel)

Fig.1, Fig.2, and Fig.3 portray the aesthetic of 'Grecian Goddess' as independent of time, suggesting an innate appreciation, and intrinsic qualities.



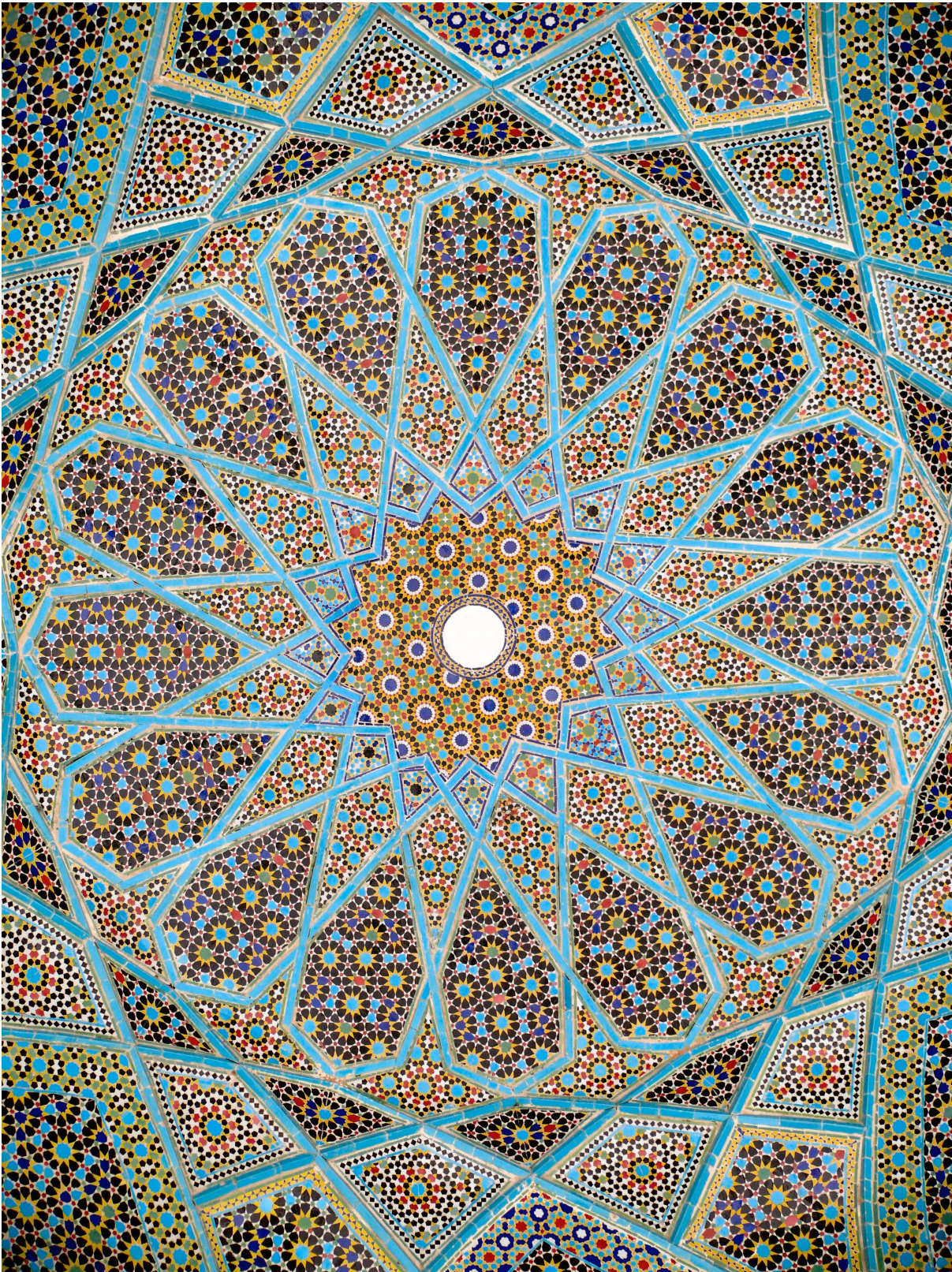


Fig.4.  
Complex Girih patterns with 16-, 10- and 8-point stars at different scales in ceiling of the Tomb of Hafez in Shiraz, 1935. The successful effects of the use of self-similarity are portrayed in this beautiful design.



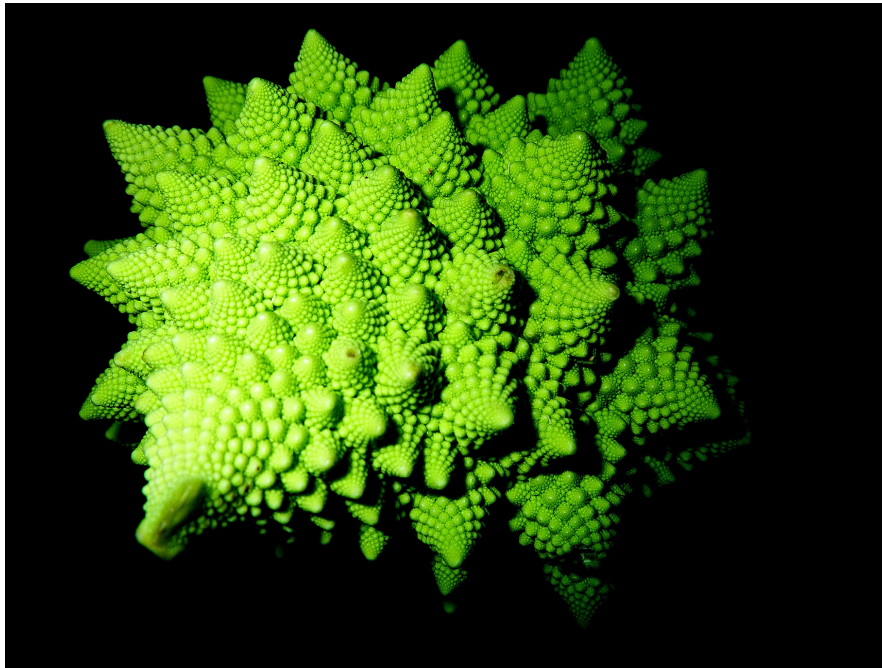


Fig.5.  
Romanesco  
Brocoli,  
displaying  
fractals  
found in  
nature with  
properties  
of 'self-  
similarity'  
and  
'scaling' to  
great  
aesthetic  
effect.

## UNIVERSAL DESIGN PRINCIPLES

Universal design principles profess to explain what we like to look at, sometimes through mathematical theory. Self-proclaimed as 'laws, guidelines, human biases, and general design considerations'<sup>21</sup>, they imply the opposite of subjectivity, and generally they seem to correlate with phenomena in nature. They are all commonly seen throughout nature, art and architecture, and are 'commonly held to have intrinsically aesthetic properties'.<sup>22</sup> Many of them have been used in ancient times before they were even understood, emphasising their subconscious and innate origins.

'Self-similarity' is when 'a form is made up of parts similar to the whole or to one another'<sup>23</sup> One of the most beautiful examples in historic architecture is seen in Fig. 4., on the ceiling of the tomb of Hafez in Shiraz.<sup>24</sup> Self-Similarity is a natural characteristic of 'Fractals'. Fractals are the patterns that 'arise in dynamic systems poised between order and chaos';<sup>25</sup> for example snow flakes which appear to be designed but are completely random; Romanesco broccoli (Fig.5.), rivers, coastlines, mountains, seashells, trees and hurricanes.<sup>26</sup> Today most patterns in all genres of design are founded on the idea of self-similarity.

<sup>21</sup> W.Lidwell,K.Holden, J.Butler, '*Universal Principles of Design, 100 Ways to Enhance Usability, Increase Perception, Increase Appeal, Make Better Design Decisions and Teach Through Design*', MRockport Publishers Inc.; 1st Edition, London, 2007

<sup>22</sup> W.Lidwell,K.Holden, J.Butler, '*Universal Principles of Design*'

<sup>23</sup> W.Lidwell,K.Holden, J.Butler, '*Universal Principles of Design*'

<sup>24</sup> 'Ancient Islamic Penrose Tiles', *Science News*, 01/03/2007, <<https://www.sciencenews.org/article/ancient-islamic-penrose-tiles-0>> (accessed January 15th 2016)

<sup>25</sup> J.Briggs, '*Fractals, The Patterns of Chaos*', Thames and Hudson, Great Britain, 1994 p.2-4

<sup>26</sup> J.Briggs, '*Fractals, The Patterns of Chaos*', Thames and Hudson, Great Britain, 1994 p.2-4



Fig.6. SS11, Alexander McQueen Butterfly Dress, Displaying symmetrical design features

When we look at symmetry, we actually get a dopamine\* region effect<sup>27 28</sup> proving with physical (rather than perceived) evidence that humans enjoy looking at it, increasing the likelihood of perceived beauty. Symmetry is a property found in virtually all forms of nature<sup>29</sup> and asymmetric members of all species in actual fact tend to have fewer offspring and shorter lives because asymmetry represents disease, malnutrition and flawed genes.<sup>30</sup> Alexander McQueen and infinite numbers of designers use symmetry to great success in their work, for example the butterfly dress in Fig.6. draws directly from the aesthetics of nature particularly clearly.

<sup>27</sup> 'Simon Norris - Neuroaesthetics: Science Embraces Art', Youtube, (accessed September 10th 2015)

<sup>28</sup> [Dopamine is a neurotransmitter that helps control the brain's reward and pleasure centres](https://www.psychologytoday.com/basics/dopamine) 'Dopamine', *Psychology Today*, <<https://www.psychologytoday.com/basics/dopamine>> accessed 10/10/15

<sup>29</sup> W.Lidwell,K.Holden, J.Butler, '*Universal Principles of Design*' p.138

<sup>30</sup> W.Lidwell,K.Holden, J.Butler, '*Universal Principles of Design*' p.138



Fig.7. Collage of naturally occurring examples of the Golden Ratio

The golden ratio<sup>\*31</sup> is portrayed in its natural form in Fig.7. It is naturally exhibited in pinecones, seashells, and the human body<sup>32</sup>, (expressed in DaVinci's Vitruvian man<sup>33</sup>) and when translated in to man-made aesthetics it has been successful in 'pleasing visually'<sup>34</sup>. There is mathematical formula describing the golden ratio, and yet it too has been used in ancient design before the formula was known, suggesting our unconscious preference for it<sup>35</sup>.

The Fibonacci sequence is another mathematical formula for design, and it is closely related to the golden ratio. Occurrent in petals of flowers, spirals of the galaxy and bones of the human hand, it extends into poetry and music as well as visuals.<sup>36</sup> It is one of the most influential patterns in mathematics and design and has been for a long time.<sup>37</sup>

It is thus supported that all of these ideas, when used well, increase the probability of the success of a visual aesthetic. They present clear patterns and formulas to prescribe beauty to any design, supporting that beauty does have real, permanent characteristics derived from nature. There is however the speculation that they have been 'selected' from nature as opposed to 'born from' nature, and that they feel innate because they have 'become accustomed to'<sup>38</sup>, but may still be learnt aesthetics.<sup>\*39</sup>

<sup>31</sup> \*The proportional relationship between two lines  $a$  and  $b$  such that  $(a+b)$  is to  $a$  as  $a$  is to  $b$ ; and the ratio between the whole and one of its parts is the same as the ratio between its two parts. 'The Math Behind Beauty', *Discover*, June 2007, <<http://discovermagazine.com/2007/jun/blinded-by-science>> (accessed November 25th, 2015)

<sup>32</sup> W.Lidwell,K.Holden, J.Butler, 'Universal Principles of Design, 100 Ways to Enhance Usability, Increase Perception, Increase Appeal, Make Better Design Decisions and Teach Through Design', MRockport Publishers Inc.; 1st Edition, London, 2007

<sup>33</sup> 'Vitruvian Man', *BBC*, <<http://www.bbc.co.uk/science/leonardo/gallery/vitruvian.shtml>> (accessed November 27th, 2015)

<sup>34</sup> 'The Math Behind Beauty', *Discover*, June 2007, <<http://discovermagazine.com/2007/jun/blinded-by-science>> (accessed November 25th, 2015)

<sup>35</sup> W.Lidwell,K.Holden, J.Butler, 'Universal Principles of Design' p.78

<sup>36</sup> W.Lidwell,K.Holden, J.Butler, 'Universal Principles of Design' p.96

<sup>37</sup> W.Lidwell,K.Holden, J.Butler, 'Universal Principles of Design' p.96

<sup>38</sup> 'The Rule of Thirds', *The Art of Photography website*, <<http://theartofphotography.tv/episodes/episode-121-rule-of-thirds/>> (accessed January 15th 2016)

<sup>39</sup> This is explained in chapter 2



## UNIVERSAL CHARACTERISTICS OF PERCEIVED BEAUTY

### UNIVERSAL LINE INTERPRETATION:

Evidence shows that lines in general are interpreted the same universally. They communicate different energies as part of the visual language:<sup>40</sup> a straight line stimulates a deeply satisfied and resolved feeling<sup>41</sup> and horizontals and verticals introduce the 'principle of balanced oppositions of tensions'<sup>42</sup>. These are results of gravity and horizons (features of the universe that are common to the human species) creating universal significance. Diagonals therefore produce directional impulses through representing imbalance by being neither horizontal nor vertical.<sup>43</sup> A good combination of lines actually creates unity and cohesion, contributing to a good aesthetic<sup>44</sup> and it has further been proven through experimental research by psychologists that we like curves.<sup>45</sup> In this way, it is supposed that if we perceive stability, we perceive safety, which (through instincts explained later in the chapter) means we perceive beauty.<sup>46</sup>

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<sup>40</sup> M.deSausmarez, '*Basic Design: the dynamics of visual form*' (Revised Edition), London, The Herbert Press, 1983 p.40

<sup>41</sup> M.deSausmarez, '*Basic Design: the dynamics of visual form*' p.24

<sup>42</sup> M.deSausmarez, '*Basic Design*' p.24

<sup>43</sup> M.deSausmarez, '*Basic Design*' p.24

<sup>44</sup> M.deSausmarez, '*Basic Design: the dynamics of visual form*' p.24

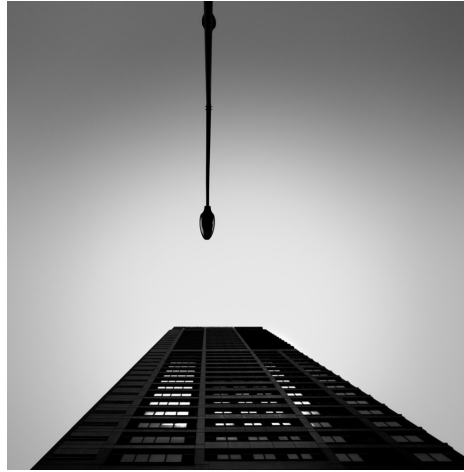
<sup>45</sup> Simon Norris - *Neuroaesthetics: Science Embraces Art*, Youtube, (accessed September 10th 2015)

<sup>46</sup> W.Lidwell, K.Holden, J.Butler, '*Universal Principles of Design*'

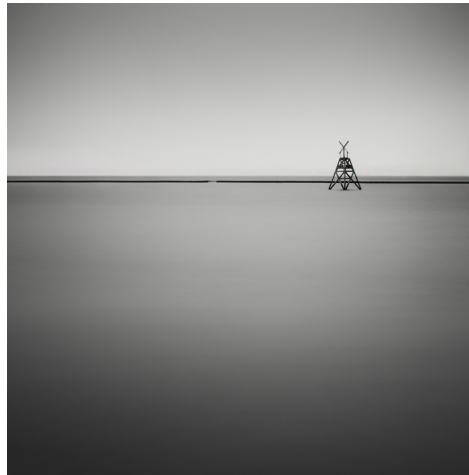
8.



9.



10.



11.



Fig.8.9.10.11. images by Thomas Leong, 'Minimalist Photography' style, Singapore, 2014

#### SIMPLICITY:

We also find beauty in simplicity. Fig.8.

Fig.9. Fig.10. and Fig.11. depict extreme simplicity of line shape and colour.

"Beauty is a sedative, predictable and soothing rather than challenging"<sup>47</sup>.

Ugliness is defined by variety and surprise<sup>48</sup> (although it could be the rarity of simplicity in today's complicated world that makes it so elusive)<sup>49</sup>. Physical overload of information actually confuses the viewer<sup>50</sup> as unnecessary visual information steals attention away<sup>51</sup> and increases performance load<sup>52</sup>.

<sup>47 47</sup> Stephen Bayley, 'The Ugly Truth', *Architectural Review*, Vol.233 Issue 1392, p22-23 (02/2013) < <http://web.b.ebscohost.com/ehost/> > (accessed November 29th, 2015)

<sup>48 48</sup> Stephen Bayley, 'The Ugly Truth', *Architectural Review*, Vol.233 Issue 1392, p22-23 (02/2013) < <http://web.b.ebscohost.com/ehost/> > (accessed November 29th, 2015)

<sup>49</sup> Stephen Bayley : *TASTE: the secret meaning of things* London, Faber and Faber Limited, 1991 (p.215)

<sup>50</sup> Arnheim, R. 'Art and Visual Perception. A Psychology of the Creative Eye. The New Version.' University of California Press, London, 1984 p.48

<sup>51</sup> Arnheim, R. 'Art and Visual Perception', 1984 p.40-44

<sup>52</sup> Arnheim, R. 'Art and Visual Perception', 1984 p.40-44

## AVERAGE OR EXAGGERATED?

There are two contrasting theories of beautiful: “the better we understand information coming into our brain, the better we feel about it,”<sup>53</sup> where ‘average’ is the most attractive; or that there is a ‘transfer of preference to form’ where ‘the more exaggerated version’ is the most attractive.<sup>54</sup>



Fig.12. Thousands of faces blended to find the ‘average woman’, culture specifically, proving that average is attractive.

Exaggerated preference comes from Peak Shift Theory- one of Ramachandran’s 10 principles of art<sup>57</sup>. By abstracting the female body shape and exaggerating it in a direction that takes it way from the male body shape, the sculpture becomes more aesthetically pleasing (Fig.13). This was further proved in an experiment with rats pressing buttons for food, where the rats showed preference to form, by choosing the larger triangle over the smaller triangle.<sup>58</sup>

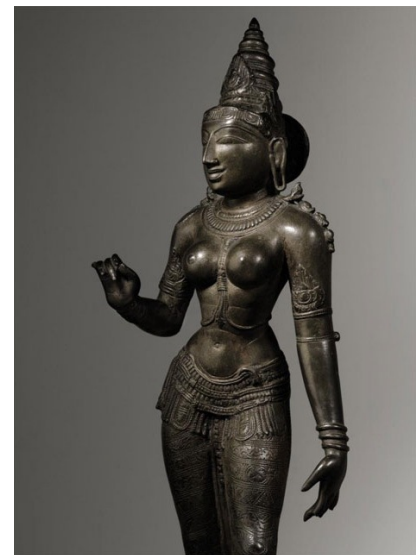


Fig.13. The stereotypical Indian Woman, portraying Ramachandran’s principle of Peak Shift, with exaggerated features that take the female figure further from the male figure.

<sup>53</sup> Simon Norris - *Neuroaesthetics: Science Embraces Art*, Youtube, (accessed September 10th 2015)

<sup>54</sup> Arseny Finkelstein - *Neuroaesthetics: on Beauty and Creativity in the Brain*

<sup>55</sup> W.Lidwell, K.Holden, J.Butler, ‘*Universal Principles of Design*’ p.138

<sup>56</sup> [visual concepts are explained further on in the text](#)

<sup>57</sup> ‘The Cognitive Science of Art: Ramachandran’s 10 Principles of Art, Principles 1-3’, *Mixing Memory Blogspot*, 20/01/2005 <<http://mixingmemory.blogspot.co.uk/2005/01/cognitive-science-of-art-ramachandrans.html>> (accessed November 27th, 2015)

<sup>58</sup> ‘Arseny Finkelstein - *Neuroaesthetics: on Beauty and Creativity in the Brain*’

## BEAUTY IN FRAGILITY

The 'Handicap Principle' correlates beauty with impracticality. Many forms of beauty are fragile and vulnerable: flowers die<sup>59</sup>, peacock's tails are big and clumsy<sup>60</sup> and snowflakes melt. On visiting the V&A exhibition 'What is Luxury', in the piece 'For Fragile Future Concrete Chandelier', (Fig.14) dandelion seed heads were harvested and individually applied to LED lights which shone through the dandelions.<sup>61</sup> The dandelions are the epitome of fragile beauty, dismantled in a breath of air. With regards to a peacock's tail, despite being used to attract a mate for reproduction it increases his visibility to predators, making him vulnerable.<sup>62</sup> It could be the tension of the fragility that increases the attractiveness. This links to our instinct to care for vulnerable babies which we instinctively find attractive.<sup>63</sup>



Fig.14. 1st hand imagery, taken on visiting the V&A exhibition, 'What is Luxury?' September 2015. "Object in Focus: Fragile Future Concrete Chandelier". Here Beauty is seen in fragility.

<sup>59</sup> Stephen Bayley, Author, Critic, Columnist, Consultant, Broadcaster, Debater and Curator; London, email response December 13th 2015

<sup>60</sup> Arseny Finkelstein - *Neuroaesthetics: on Beauty and Creativity in the Brain* (accessed 20/05/2015)

<sup>61</sup> 'What is Luxury? - Object in Focus: Fragile Future Concrete Chandelier by Studio Drift', *V&A exhibitions*, <<http://www.vam.ac.uk/content/exhibitions/what-is-luxury/object-in-focus-fragile-future-concrete-chandelier-by-studio-drift/>> (accessed November 27th, 2015)

<sup>62</sup> Arseny Finkelstein - *Neuroaesthetics: on Beauty and Creativity in the Brain* (accessed 20/05/2015)

<sup>63</sup> D. Schefer, *What is Beauty, New Definitions From the Fashion Vanguard*, London, Thames & Hudson, 1997 p.21

## THE BEAUTY OF 'SEEING'

"A visual art is dependent upon the expressive and constructive use of the specific phenomena of vision."<sup>64</sup>

When we look, visual information is processed by our brains in a scientifically explainable way, common to the functioning of a human being. The act of seeing itself is inherited. Seeing is varied and complex, and there are a number of processes involved, crucial to how we perceive beauty.

What we are looking at has 'psychological force' with magnitude and direction; and variations in size, shape, location and colour, that all interplay with each other to create a dynamic visual experience<sup>65</sup> that communicates as an objective 'visual language'<sup>66</sup>.

First, we see selectively: "Seeing means grasping the outstanding features of objects. The blueness of the sky, the curve of the swans neck."<sup>67</sup> The brain's method of processing is to 'divide and conquer'<sup>68</sup> in order to make sense of the 40 billion bits of sensory information coming in to the brain.<sup>69</sup> Drawing from a wide range of resources, It is thought there are specific areas of the brain for individual elements of visual information to be interpreted,<sup>70 71 72</sup> and after the brain finds these powerful individual visual qualities, they get assigned appropriately for interpretation.<sup>73</sup> In our heads, we have 'ideal objects' constructed to accommodate the viewed objects,<sup>74</sup> for example the concept of a bird<sup>75</sup> or a face. We never see a 'thing', we always see a 'kind of thing' and the "particular gets subordinated to the general."<sup>76</sup> All healthy individuals are born with the strategy of making visual concepts, and some of them are supposedly already pre-disposed to us, for example: "A well-organised line figure imposes itself as basically the same shape, regardless of the associations and fantasies it stirs up in some of them because of their cultural background and individual disposition".<sup>77</sup>

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<sup>64</sup> M.deSausmarez, '*Basic Design: the dynamics of visual form*' (Revised Edition), London, The Herbert Press, 1983 p.13

<sup>65</sup> Arnheim, R. '*Art and Visual Perception*', 1984 p.11

<sup>66 66</sup> Arnheim, R. '*Art and Visual Perception*', 1984 p.43

<sup>67</sup> Arnheim, R. '*Art and Visual Perception*', 1984 p.43

<sup>68</sup> J. Ward, '*The Student's Guide to Cognitive Neuroscience, second edition*', East Sussex, Psychology Press, 2010 p.110

<sup>69</sup> 'Simon Norris - Neuroaesthetics: Science Embraces Art', Youtube, (accessed September 10th 2015)

<sup>70</sup> 'Iconic Turn: Prof.Dr.SemirZeki- Neural Concept Formation and Art', Youtube, 23-08-12 <<https://www.youtube.com/watch?v=A9w3n3OzDRQ>> (accessed 20th May 2015)

<sup>71</sup> J. Ward, '*The Student's Guide to Cognitive Neuroscience, second edition*', East Sussex, Psychology Press, 2010

<sup>72</sup> Arnheim, R. '*Art and Visual Perception*', 1984 p.8

<sup>73</sup> Arnheim, R. '*Art and Visual Perception*', 1984 p.97

<sup>74</sup> J.P.Hudson, M.Nadal, "*Art, Aesthetics and the Brain*" 2015

<sup>75</sup> J.P.Hudson, M.Nadal, "*Art, Aesthetics and the Brain*" 2015

<sup>76</sup> 'Simon Norris - Neuroaesthetics: Science Embraces Art', Youtube, (accessed September 10th 2015)

<sup>77</sup> Arnheim, R. '*Art and Visual Perception*', 1984 p.6

'Inferences' (specialist thought operations) help to complete the visual information based on knowledge<sup>78</sup>. The individual components then get regrouped for analysis: this is called the 'binding problem'<sup>79</sup>. Gestalt Psychologists further explain regrouping by laws of proximity and similarity, whereby close visuals and similar visuals get grouped,<sup>80</sup> for example the 'invisible triangle' in Fig.15.

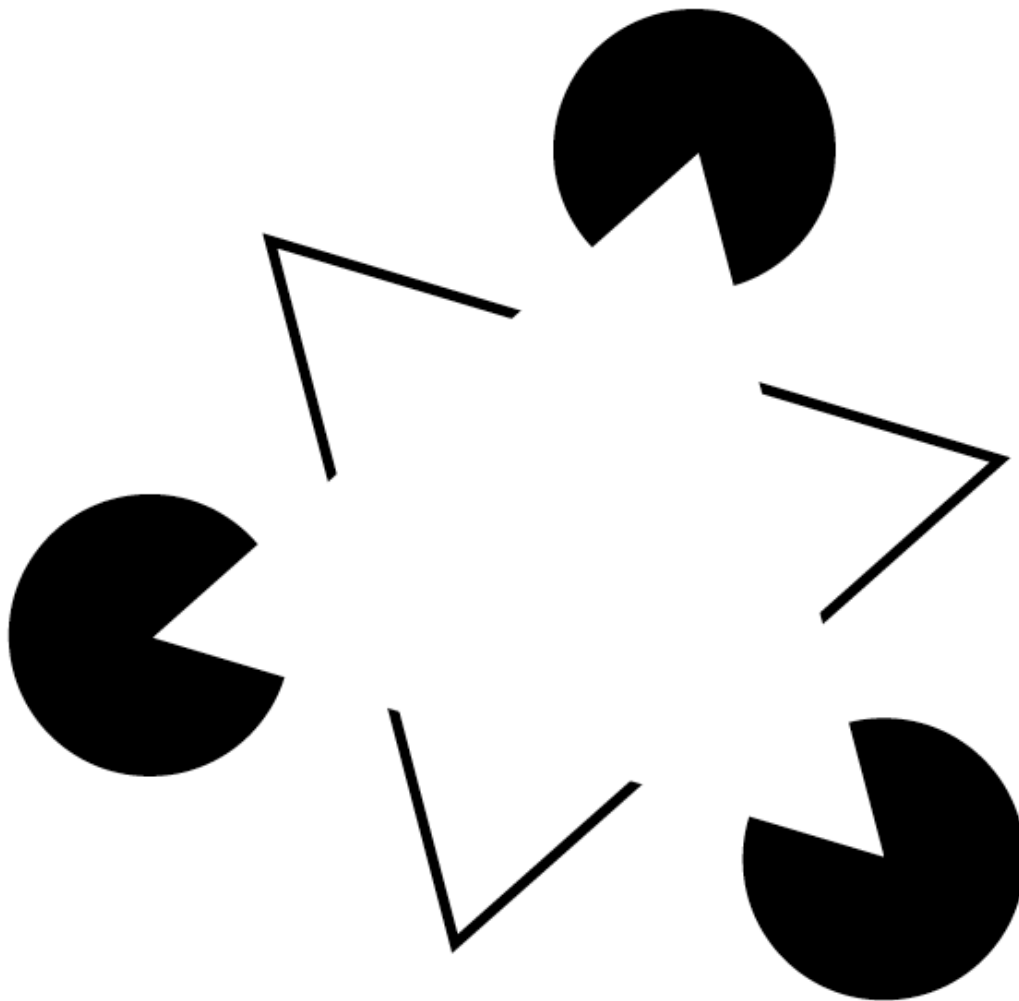


Fig.15.  
'The Invisible Triangle', according to Gestalt Psychologist Theories of inferences.  
The brain spontaneously chooses to see a triangle that's not there.

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<sup>78</sup> Arnheim, R. 'Art and Visual Perception', 1984 p.12

<sup>79</sup> Arnheim, R. 'Art and Visual Perception', 1984 p.112

<sup>80</sup> J. Ward, 'The Student's Guide to Cognitive Neuroscience, second edition', East Sussex, Psychology Press, 2010

## THE BEAUTY-EMOTION RELATIONSHIP

It appears that perceived beauty and emotion are inextricably linked, and emotion actually defines perceived beauty.

Emotions have a purpose in dealing with fundamental life-tasks<sup>81</sup>, and so beauty might have a similar purpose.

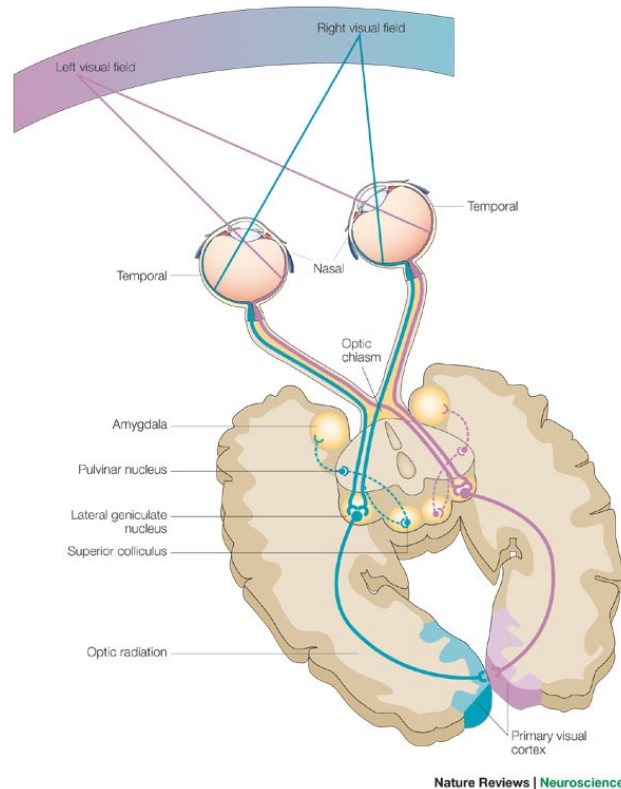


Fig.16. Optic Pathway of Visual Information from the external world through the eye to the brain.

The route of visual information is summarised in Fig.16. from where it gets sent to the emotional part of the brain (the limbic system).<sup>82</sup> If beauty is experienced, the information goes to the medial optical frontal cortex, but with perceived 'ugly' the destination is the Somata Motor area. Next it is thought the 'association area' elaborates on the cognitive processes of emotional labelling.<sup>83</sup> It is not yet certain which brain area imposes the opinion however,<sup>84</sup> or which comes first, the emotion or the aesthetic decision?

<sup>81</sup> 'An Argument for Basic Emotions', Paul Ekman, 1992, <<https://www.paulekman.com/wp-content/uploads/2013/07/An-Argument-For-Basic-Emotions.pdf>> (accessed December 4th, 2015)

<sup>82</sup> J.P.Hudson, M.Nadal, "Art, Aesthetics and the Brain" 1st Edition, OUP, 2015, Oxford p.5-8

<sup>83</sup> J.P.Hudson, M.Nadal, "Art, Aesthetics and the Brain" 2015 p.12

<sup>84</sup> J. Ward, 'The Student's Guide', 2010 p.337

Often we are aware of our emotions, so would presume they are 'conscious', but there are conscious and pre-conscious aspects.<sup>85</sup> 'Somatic markers' link a situation with previous connected emotions, so that physical emotion can be experienced without an emotion to be reported consciously.<sup>86</sup> This supports that the perception of beauty may also work in this subconscious way.



It is supported that perceiving beauty is an innate feature by Charles Darwin who believed that emotions are innate 'automatic responses' (1872/1965)<sup>87</sup>, and Paul Ekman, who proved that six of our emotions are innate and subconscious<sup>88</sup> in one of the most influential ethnographic studies.<sup>89</sup> (Fig.17) These emotions are sad, happy, disgust, surprise, anger and fear,<sup>90</sup> and are thought to be basic. In this way innate emotion may give evidence of an innate perception for beauty.

Fig.17. Sad, Happy, Disgust, Surprise, Anger and Fear. (Paul Ekman's study proving that six of our emotions are innate.) Psychometric Study, 1976.

<sup>85</sup> J. Ward, *'The Student's Guide'*, 2010 p.337

<sup>86</sup> J. Ward, *'The Student's Guide'*, 2010 p.348

<sup>87</sup> J. Ward, *'The Student's Guide'*, 2010 p.335

<sup>88</sup> 'What Faces Reveal about Emotions and Morals. Darwin Thought Key Facial Expressions Were Innate and Universal', *D.S.W.A.Dobrin*, 25/05/2012 <<https://www.psychologytoday.com/blog/am-i-right/201205/what-faces-reveal-about-emotions-and-morals>> (accessed December 4th, 2015)

<sup>89</sup> J. Ward, *'The Student's Guide'*, 2010 p.339

<sup>90</sup> J. Ward, *'The Student's Guide'*, 2010 p.339



Fig.18. MRI imaging showing the activity of the reward centre of the brain with increased blood-flow from stimulation.



### THE ROLE OF THE REWARD CENTRE

As well as as being labelled with a positive emotion, beauty actually stimulates the 'reward centre' of the brain<sup>91</sup>, shown in Fig.18, and creates physical response habits similar to those of food and water<sup>92</sup>, that are essential for keeping us alive. Experiments done with rats (Fig.19.) show us just how powerful the reward centre is, as they would suffer huge amounts of pain in order to stimulate this area.<sup>93</sup> Reward centre stimulation is also an unconscious working of the brain: the 'background machinery that appears to work of its own accord'<sup>94</sup>, tending to be innate functions of the body for things such as breathing. The reward centre is what fuels addictions, and beauty has actually been referred to as a 'drug'.<sup>95</sup> Beauty's power is therefore indisputable.

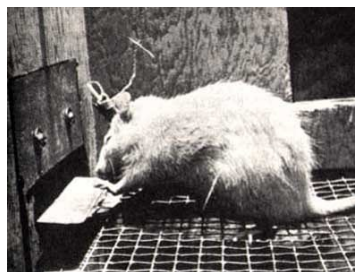


Fig.19. An 'Old's' rat, self-stimulating its pleasure centres

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<sup>91</sup> Arseny Finkelstein - *Neuroaesthetics: on Beauty and Creativity in the Brain* (accessed 20/05/2015)

<sup>92</sup> 'Why Do We Have Emotions? Mental Illness Often Results from Excess Emotion' *Psychology Today*, I.Simons, 14/10/2009 <<https://www.psychologytoday.com/blog/the-literary-mind/200911/why-do-we-have-emotions>> (accessed December 30th 2015)

<sup>93</sup> 'The Wired Society' <<http://www.wireheading.com/wired.html>> (accessed December 6th, 2015)

<sup>94</sup> D.C.Dennet, '*Consciousness Explained*', UK, Viking, 1992 p.23

<sup>95</sup> D. Schefer, '*What is Beauty, New Definitions From the Fashion Vanguard*,' London, Thames & Hudson, 1997 p.35

## INSTINCTS

At the V&A 'What is Luxury Exhibition' it was stated that "craft speaks to deep-seated human instincts"<sup>96</sup> in the context of beauty and luxury.

In general our instincts tend to be subconscious pulls or reflexes that we are born with as part of our genetic makeup, encouraging us to produce new life and avoid danger. In 'fight or flight' mode, the emotion of fear initiates physiological responses to prepare our body to respond to the situation.<sup>97</sup> Since emotion plays a key role in taste, with 'ugly' actually stimulating the 'somata motor' area for movement, the measure of 'beautiful' to 'ugly' is likely to be a survival mechanism too. Furthermore, perceived beauty correlates with desire and love<sup>98</sup> (mechanisms for reproduction). Darwin said that 'breeding good-looking children is a survival characteristic'<sup>99</sup>, and tests have been done on individuals looking at the faces of loved ones, and things they perceive as beautiful, and the same part of the brain fires.<sup>100</sup> Also, the way we are 'attracted' to babies by finding them 'cute' encourages us to look after them<sup>101</sup> and endure the challenges of raising a child; 'shiny' is supposed to ignite our instincts, apparently because of our 'inbuilt desire for water';<sup>102</sup> and we also have an innate preference for wide open space<sup>103</sup> (called 'Savanna Preference'), presumably for the avoidance of danger by our 'fight or flight' instinct. This instinct is stronger in children than adults and is suppressed with age, suggesting that knowledge overrides instincts as we adapt to our environments (continued in chapter 2). These emotions like these are said to operate in the more prehistoric visual-brain routes<sup>104</sup> suggesting their being at our 'core', but the issue arises that instincts might be wasted in modern society, as the actions they stimulate generally (such as fight or flight) can't solve today's problems<sup>105</sup>.

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<sup>96</sup> 'What is luxury' exhibition at the Victoria & Albert Museum, Cromwell Road, London, SW7 2RL, visited September 2015

<sup>97</sup> J. Ward, *The Student's Guide to Cognitive Neuroscience, second edition*, East Sussex, Psychology Press, 2010 p.23

<sup>98</sup> Iconic Turn: Prof.Dr.SemirZeki- Neural Concept Formation and Art'

<sup>99</sup> Stephen Bayley, 'The Ugly Truth', *Architectural Review*, Vol.233 Issue 1392, p22-23 (02/2013) < <http://web.b.ebscohost.com/ehost/>> (accessed November 29th, 2015)

<sup>100</sup> Iconic Turn: Prof.Dr.SemirZeki- Neural Concept Formation and Art'

<sup>101</sup> D. Schefer, *What is Beauty, New Definitions From the Fashion Vanguard*, London, Thames & Hudson, 1997 p.21

<sup>102</sup> 'My Precious: Scientists Discover Why we are Attracted to Shiny Objects', *Daily Mail*, 21/01/2014 <<http://www.dailymail.co.uk/sciencetech/article-2543625/My-precious-Scientists-discover-attracted-shiny-objects-say-key-inbuilt-desire-water.html>> (accessed January 15th 2016)

<sup>103</sup> W.Lidwell,K.Holden, J.Butler, *'Universal Principles of Design'* p.172

<sup>104</sup> J. Ward, *The Student's Guide to Cognitive Neuroscience, second edition*, East Sussex, Psychology Press, 2010 pp.6-10

<sup>105</sup> 'Why Do We Have Emotions? Mental Illness Often Results from Excess Emotion' *Psychology Today*, I.Simons, 14/10/2009 <<https://www.psychologytoday.com/blog/the-literary-mind/200911/why-do-we-have-emotions>> (accessed December 30th 2015)

## CONCLUSION

In conclusion, the main questions I have been looking at are: 'what are the fundamental characteristics of beauty that are independent of time and culture?'; 'how do we process visuals and how does this determine the success of an aesthetic?'; 'how does emotion contribute to the perception of beauty?'; and 'how is beauty perception related to survival?'.

The fundamental characteristics that increase perceived beauty are outlined by 'Universal Design Principles' and Universal visual concepts. They include self-similarity and fractals; symmetry, the Golden Ratio, Fibonacci sequence; the rule of thirds; well organised, cohesive lines; certain types of line; simplicity; averageness; exaggeration of form; and fragility. In general it is found that these characteristics have their roots in nature and the universe, and historical evidence shows their resistance to the effects of time. They are commonly used in design today to great success.<sup>106</sup>

The way we process visuals from a neurological point of view is generally by breaking things down, assigning them categories based on stored information in our brains, and putting them back together again, all in order to understand what we are looking at. Essentially, the better we can understand what we are looking at, the better we feel about it, and this increases our perception that it is beautiful, mainly because beauty is inextricably linked with emotion. It is not yet known whether emotional labels of visuals come before or after an aesthetic decision is made, however they do come hand in hand. This further means that the purpose of beauty might actually be for survival: whether reproduction of fight-or-flight mechanisms. For instance, when visual information represents cues for instincts, such as water, or danger, we have an emotional reaction to them in order to generate physiological functioning's of the body so that we can survive.

Ultimately, we can be presented with visual information that is globally 'appreciated', even if unconsciously by the brain rather than consciously by the rationalisation of the individual. This is because humans process visual information the same for interpretation, (on the foundation of scientific explanation), and some things are proved to be processed more easily and to greater effect than other things. Due to this successful processing, positive emotions can be experienced, encouraging the perception of a beautiful aesthetic. It needs to be mentioned though that the emotions generated by 'function' may be more basic than the emotions generated by social interaction, for example 'jealousy'.<sup>107</sup>

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<sup>106</sup> W.Lidwell,K.Holden, J.Butler, '*Universal Principles of Design*' p.10

<sup>107</sup> E.E.Smith, S.M.Kosslyn '*Cognitive Psychology, Mind and Brain - 1st Edition*' New Jersey, Pearson Education, 2007 p.5-10

# CHAPTER 2

## INTRODUCTION

"There can't be rules of taste".<sup>108</sup> - Addison and Reynolds

This chapter is examining the factors of beauty perception that we are not born with. They are learnt products of the environment and extremely dynamic.

The main questions that I will answer in this chapter are: Can beauty be broken down into characteristics that are specifically products of the environment? If so, what are these factors? And how did they come about, in terms of how we learn and what we learn, as products of our culture and evolution? How subjective actually are we as individuals, since we all exist under the umbrellas of our different cultures? And why might nurture be more important than nature in the context of beauty?

## WE ARE ENTIRELY INDIVIDUAL

Firstly, it is thought that our opinions are subjective, not objective, and taste is illogical and without rules.<sup>109</sup> Objective sensations include pain, and objective is factual, unchanging and reliable. In terms of vision, a measure of 'brightness' in comparison to 'darkness' is an objective, indisputable fact, however 'beauty' in comparison to 'ugly' is a personal preference with high inter-individual variability.

At any one time, what we see is our own interpretation of the world as a product of the observed composition that we are looking at, its context in time and space, its function in an overall pattern, our knowledge, personalities and past experience, the light environment, and our time-specific psychological state. We may not always just see what's in front of us<sup>110</sup> because the brain constructs its own elaborated and interpreted 3D model environment as a normal part of seeing<sup>111</sup>, and it means that the meaning of the observed comes from the observer: "it is the reader of the myths\* who must reveal their essential function"<sup>112 113</sup>

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<sup>108</sup> S. Bayley : *TASTE: the secret meaning of things* London, Faber and Faber Limited, 1991 (p.215)

<sup>109</sup> S. Bayley : *TASTE: the secret meaning of things* London, Faber and Faber Limited, 1991 (p.215)

<sup>110</sup> J. Ward, *The Student's Guide to Cognitive Neuroscience, second edition*, East Sussex, Psychology Press, 2010

<sup>111</sup> J. Ward, *The Student's Guide* 2010 p.103

<sup>112</sup> R.Barthes, *"Mythologies"*, Vintage, London, 2000 p.128

<sup>113</sup> \* 'Myth' is an extension of semiotics to do with connotation, and as explained in Roland Barthes' book 'Mythologies': "It [is what] transforms history in to nature"

## OPINIONS ARE PRODUCTS OF THE VERY DYNAMIC CONSCIOUS BRAIN

It needs to be emphasised how much we differ within ourselves over time, as well as from each other. Bruce Webber said, "I was asked to write about a certain kind of beauty, but that's impossible because my idea of beauty hopefully changes every two minutes."<sup>114</sup> This is because our decisions are made by our 'conscious mind'.

The conscious and the unconscious brain are opposites: consciousness is most importantly 'awareness'. It is our thoughts, and complex functioning of the developed brain, manifested from 'knowledge', and giving us 'executive control'<sup>115</sup>, for example decisions, rationalisation, choices and aesthetic judgements. It can't however access the unconscious brain<sup>116</sup> which runs our biological 'background machinery'<sup>117</sup>, controlling the most basic functions of survival such as heart-rate, breathing and instincts. Sometimes they are in conflict, but consciousness is what makes us human<sup>118</sup> by overriding these instincts that we share with animals.

## MEANINGS COME FROM CONNOTATIONS, NOT DENOTATIONS

It is said that 'only information which is derived from our own experience can be considered valid for us and for our expressive resources'<sup>119</sup>. If something has no meaning to us it is perceived neutrally and emotionlessly, (this refers to how the viewer gives the meaning to the viewed) and effectively has no meaning at all, so how could we perceive it as beautiful? On the other hand, when we know the meaning of a visual, for instance if it has a story, we will 'experience and recall the events of the story in a personal way - it becomes a part of [us]'.<sup>120</sup> To recall emotion we need our own experiences to draw from.

Connotation describes the personal associations that are applicable to the viewed by the viewer, whereas denotation is what we are looking at objectively on a practical and physical level of 'lines and dots and colours and textures'.<sup>121</sup> Basic emotions of satisfaction or resolution may be products of denotation (explained in chapter 1). Emotions are on a spectrum of complexity for different functions of varying importance, and I believe connotation to be where the more relevant and meaningful emotions are stimulated.

The emotions of connotation for instance are more complex as a result of more complex brain functions, and might be modulated by cultural display rules such as the emotion of embarrassment which isn't as basic as 'fear', that is probably modulated unconsciously by the more primitive brain functions.

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<sup>114</sup> D. Schefer, *'What is Beauty, New Definitions From the Fashion Vanguard'*, London, Thames & Hudson, 1997 p.15

<sup>115</sup> 'What In the World is Consciousness?', *Wellcome Collection website*, < <http://wellcomecollection.org/whats/what-world-consciousness>> (accessed November 29th)

<sup>116</sup> 'Consciousness', *Stanford Encyclopedia of Philosophy*, <<http://plato.stanford.edu/entries/consciousness/>> (accessed December 21st 2015)

<sup>117</sup> 'Consciousness', *Stanford Encyclopedia of Philosophy*, <<http://plato.stanford.edu/entries/consciousness/>> (accessed December 21st 2015)

<sup>118</sup> Arnheim, R. *'Art and Visual Perception'*, 1984 p.6

<sup>119</sup> M.deSausmarez, *'Basic Design: the dynamics of visual form'* (Revised Edition), London, The Herbert Press, 1983 p.13

<sup>120</sup> W.Lidwell, K.Holden, J.Butler, *'Universal Principles of Design'* p.186

<sup>121</sup> Arnheim, R. *'Art and Visual Perception'*, 1984 p.43

## SEMIOTICS TO UNDERSTAND THE COMPLEX MEANINGS OF VISUALS

"It is in the nature of man that he wishes to define what he sees and to understand what he does".<sup>122</sup>

Semiotic studies are the way that connotations of visuals can be explained, with an awareness of context, history and culture. The meaning of the subject being perceived can be assumed by making assumptions of what it signifies through 'signs', assuming that it stands for something more than what it is.<sup>123</sup> <sup>124</sup> It provides more intricate explanations of visual meanings, requiring 'understanding' as well as observing, stimulating the connection of more areas of the brain. Art especially will usually have more connotations than just face value<sup>125</sup>: "Pictures and sculptures of any style possess properties that can't be explained as mere modifications of the perceptual raw material received through the senses".<sup>126</sup> The importance of a visual comes from 'its context; its relation in time and space, and the intention behind its use'.<sup>127</sup> An example of connotations creating beauty perception is when we look at something that we know has taken a lot of time, skill and attention to detail, and this knowledge increases our appreciation of it.

In making the assumption that 'luxury' and 'beauty' are somewhat synonymous, the V&A's exhibition 'What is Luxury' gives the definition: '[luxury has] outstanding precision, attention to detail, remarkable finishes, and exceptional production'.<sup>128</sup> These facts enhance the beauty of a visual, but only if we are able to interpret them from the given visual information by what we already know or what is implied. Even with only a handful of denotations, semiotics can reveal layers upon layers of connotations to increase emotional impact and thus the probability of perceived beauty.

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<sup>122</sup> Arnheim, R. *'Art and Visual Perception'*, 1984 p.8

<sup>123</sup> R.Barthes, *"Mythologies"*, Vintage, London, 2000 p.111

<sup>124</sup> A.A.Berger, *"What Objects Mean: An Introduction to Material Culture"*, Left Coast Press Inc, US, 2009

<sup>125</sup> R.Barthes, *"Mythologies"*, Vintage, London, 2000 p.109

<sup>126</sup> Arnheim, R. *'Art and Visual Perception'*, 1984 p.135

<sup>127</sup> Stephen Bayley : *TASTE: the secret meaning of things'* London, Faber and Faber Limited, 1991 (p.215)

<sup>128</sup> *'What is luxury'* exhibition at the Victoria & Albert Museum, Cromwell Road, London, SW7 2RL, visited September 2015

An extension of semiotics is the ability to identify that sometimes things steal meanings from similar looking things, so what we are looking at can be ambiguous. By emulating a visual, a false meaning can be implied, stolen from another visual. For example Swarovski Crystals (Fig.20.) cut to imitate diamonds (which have a lot more worth, history and meaning), tarnishes the meaning of diamonds by creating ambiguity. This emphasises that the context must always be known before judgement.



Fig.20. OPERA ring, "Cosmos" collection, FW 2004/5, Solid Silver and giant Crystal Stone, Daniel Swarovski

## LEARNING IS CONSTANT

Learning is made possible by the brain being 'plastic': a "permanently changing organ in both structure and function, continuously absorbing and transforming information from the environment" (Jenkins et al. 1990; Mora et al 2007).<sup>129</sup> "Neuronal processes are constantly feeding back to alter the processor - the brain and the person attached"<sup>130</sup> meaning that we never stop learning from and adapting to our environment. This is allowed by 'self—organisation', enabling complex systems to spontaneously change. It seems the brain has a 'mind of its own'.

In this way, our brains 'physically mould' to our environments, which are subjects of our cultures, so we can assume that cultural differences are evident by the internal workings of our brains. Can we be left with any innate opinions at all if our brains are so actively adapting all the time?

In learning, information (something that we don't already know) goes from the first, conscious stage of learning (Cognitive), to the Associative stage, and finally to the Autonomous stage (unconscious) where the learnt information or actions seem to be 'naturally part of you' and can be practised with minimal conscious awareness.<sup>131</sup> This is happening all the time, as we develop and adapt as human beings. As a result, the definition between 'human nature' and 'well learnt' behaviours is very blurred, and the reality of the existence of 'human nature' itself may be questioned. Barthes said: "I resented seeing human nature and history confused at every turn, and I wanted to track down, in the decorative display of what-goes-without-saying, the ideological abuse which, in my view, is hidden there".<sup>132</sup> It is thought that 'Myth' (an extension of semiotics to do with connotation,) as explained in Roland Barthes' book 'Mythologies': "[is what] transforms history in to nature".<sup>133</sup>

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<sup>129</sup> J.P.Hudson, M.Nadal, *"Art, Aesthetics and the Brain"* 1st Edition, OUP, 2015, Goolge e-Book p.5

<sup>130</sup> J.P.Hudson, M.Nadal, F.Mora, L.F.Agnati, C.J.C.Conde, *"Art, Aesthetics and the Brain"* 1st Edition, OUP, 2015, Goolge e-Book

<sup>131</sup> 'Phases of Learning', *Teach PE*, <[http://www.teachpe.com/sports\\_psychology/phases\\_learning.php](http://www.teachpe.com/sports_psychology/phases_learning.php)> (accessed January 15th 2016)

<sup>132</sup> R.Barthes, *"Mythologies"*, Vintage, London, 2000 p.2

<sup>133</sup> R.Barthes, *"Mythologies"*, Vintage, London, 2000 p.118



This is enhanced by storytelling: a very compelling way of passing detailed information down generations through a variety of means, including visual. Images and pictures are key in passing down this knowledge and become a visual language.<sup>134</sup> We are creating visual concepts and building knowledge from birth, to the point that we don't question them at all.<sup>135</sup>

In chapter 1 there was the consideration that the Golden Ratio, for example, is an innate beauty appreciation believed to come from 'within us', derived from being part of the larger power of the universe where we believe the design originates. But 'are such patterns considered aesthetic because people find them to be more aesthetic, or because people have been taught to believe they are?'<sup>136</sup> Even the beauty of nature may be less natural than we think, and just be subject to popular opinion rather than being a universal innate beauty ideal, since it has actually been encouraged throughout history. For example John Ruskin was described as 'Victorian's booster of Nature's beauty' (because he 'campaign[ed] manically against the ugly intrusion of the steam railway into the unspoilt, tranquil lake district').<sup>137</sup>

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<sup>134</sup> R.Barthes, *"Mythologies"*, Vintage, London, 2000 p.110

<sup>135</sup> R.Barthes, *"Mythologies"*, Vintage, London, 2000 p.129

<sup>136</sup> W.Lidwell,K.Holden, J.Butler, *'Universal Principles of Design'* p.78

<sup>137</sup>Stephen Bayley, 'The Ugly Truth', *Architectural Review*, Vol.233 Issue 1392, p22-23 (02/2013) < <http://web.b.ebscohost.com/ehost/>> (accessed November 29th, 2015)

## THE EFFECT OF CULTURE ON TASTE

Human characteristics vary on several levels: as a species humans are independent of other species; one culture's characteristics are independent of another culture; and humans are individually subjective, with characteristics independent of each other on a one-to-one basis. Ultimately, between being subjective and being categorised to the definition of being human (as described in chapter 1), we conform to the umbrella of culture that we are bound to.

"Culture systems may on the one hand be considered as products of action, or as conditioning elements of further action".<sup>138</sup>

This statement is true for beauty perception: past taste defines current taste which defines future taste on a feedback loop. The taste of a culture is displayed in distinct patterns, behaviour and symbols that they have selected over time till they become tradition, and embody their specific ideas and values.<sup>139</sup>

"However we try to define beauty for ourselves, we are sculpted by the culture we are bound to."<sup>140</sup> Media is one of the main sources of information transfer whether it manipulates or not,<sup>141</sup> and it creates a common ground of what we know and how we think. The preceding qualities of each culture are currently very varied despite globalisation, and there is 'no real evidence of a Universal standard of beauty'.<sup>142</sup> The taste of the individuals within a culture can be in limbo between self-expressive and conformational: in 'Fashion Theory, A Reader', M.Barnard explains using fashion as an example: "All women desire to wear each year dresses which are sufficiently different from those of last year, yet not identical with those of other women, nor so different as to be undesirably conspicuous."<sup>143</sup>

An explicit example of a controversial cultural beauty ideal is the Kayan tribe in the Thai jungle (Fig.21.) who wear neck rings and 'do so as it is considered beautiful'<sup>144</sup>. Outside the tribe though, it is common belief that they look unusual, and their nickname 'giraffe women' doesn't typify 'beauty'. The UNHCR (UN refugee agency) referred to them as a 'human zoo'.<sup>145</sup>

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<sup>138</sup> J.P.Hudson, M.Nadal, "Art, Aesthetics and the Brain" 1st Edition, OUP, 2015, Oxford p.3

<sup>139</sup> J.P.Hudson, M.Nadal, "Art, Aesthetics and the Brain" 1st Edition, OUP, 2015, Oxford p.3

<sup>140</sup> D. Schefer, 'What is Beauty, New Definitions From the Fashion Vanguard', London, Thames & Hudson, 1997 p.137

<sup>141</sup>\* a very commonly and widely discussed complex topic for future possible research and debate

<sup>142</sup> Arseny Finkelstein - Neuroaesthetics: on Beauty and Creativity in the Brain' (accessed 20/05/2015)

<sup>143</sup> M.Barnard, 'Fashion Theory, A Reader' Oxon, Routledge, 2007 p.47

<sup>144</sup> The 'Giraffe Women' of Eastern Burma Who Wear Brass Rings Around Their Necks as a Sign of Beauty', *DailyMail Online*, E. Innes, 21/04/2014, <<http://www.dailymail.co.uk/health/article-2609467/Pictured-The-giraffe-women-eastern-Burma-wear-brass-rings-necks-sign-beauty.html>> (accessed December 20th, 2015)

<sup>145</sup> G.Lianne, 'A 'human zoo' for Burma's giraffe girls', *Maclean's*, Feb 25th, 2008, Vol. 121. p36 < [http://ptceu-primo.hosted.exlibrisgroup.com/primo\\_library](http://ptceu-primo.hosted.exlibrisgroup.com/primo_library)> (accessed December 30th 2015)



Fig.21. 'Giraffe Woman' of the Kayan Tribe in the Thai jungle, Burma, wearing brass rings as a sign of beauty, 21st April 2014, from an article by Emma Innes

Fig.22.  
Cabanel, Birth  
of Venus,  
1863, Musée  
D'Orsay, Paris:  
depicting a  
more  
curvaceous  
beauty ideal  
for women,  
reflecting  
taste of the  
time.



## BEAUTY REFLECTS CULTURE'S PATTERNS OF CHANGE

We can see the evolution of taste over time through fashion, art and beauty-stereotypes. Fashion has evolved in clear distinctive patterns, as a reflection of history itself<sup>146</sup>, and is a useful tool for tracing and measuring 'the course of shifting political moods, social mores, religious climates and moral codes, the health of commerce, the march of science, and the progress of the arts.'<sup>147</sup>

Art too "is not based on a number of static concepts but changes and extends its boundaries in response to shifts of emphasis in the intellectual and emotional situations of each period in history."<sup>148</sup>

Taste evolves in response to every aspect of the environment, and it provides a useful visual record that we can observe and reflect on.

<sup>146</sup> M.Batterberry, A.Batterberry, 'Fashion, the Mirror of History, 2nd Ed.' Colombus Books, London, 1982 p.1

<sup>147</sup> M.Batterberry, A.Batterberry, 'Fashion, the Mirror of History, 2nd Ed.' 1982 pp.1-4

<sup>148</sup> M.deSausmarez, 'Basic Design: the dynamics of visual form' (Revised Edition), London, The Herbert Press, 1983



The female beauty stereotype has progressed from the fertility image in prehistoric art<sup>149</sup>, for example 'Venus of Willendorf' (Fig.23.) (displaying characteristics of peak shift theory explained in chapter 1), to Venus as portrayed by Cabanel in the 'Birth of Venus' (Fig.22.) to today where 'heroin chic' is a very popular beauty ideal (Fig. 24.)



Fig.23. Venus of Willendorf, created between 28,000BC-25,000BC, 11.1cm high statuette of a female figure, depicting ancient beauty ideals, and characteristics of 'Peak Shift Theory'.

(The topic of 'heroin chic' is a widely discussed and controversial topic, too vast to explore in this dissertation, but probably exists as a culture-specific backlash at the obesity epidemic of today, mirroring a specific time period of its culture).

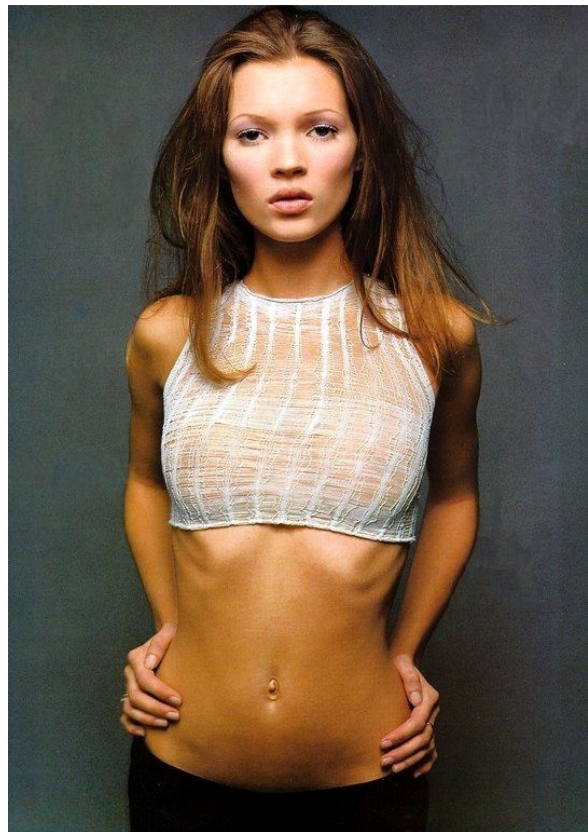


Fig.24. Kate Moss, image source unknown, depicting the 'heroin chic' beauty ideal of modern society.

<sup>149</sup> 'Iconic Turn: Prof.Dr.SemirZeki- Neural Concept Formation and Art", Youtube, 23-08-12 <<https://www.youtube.com/watch?v=A9w3n3OzDRQ>> (accessed 20th May 2015)

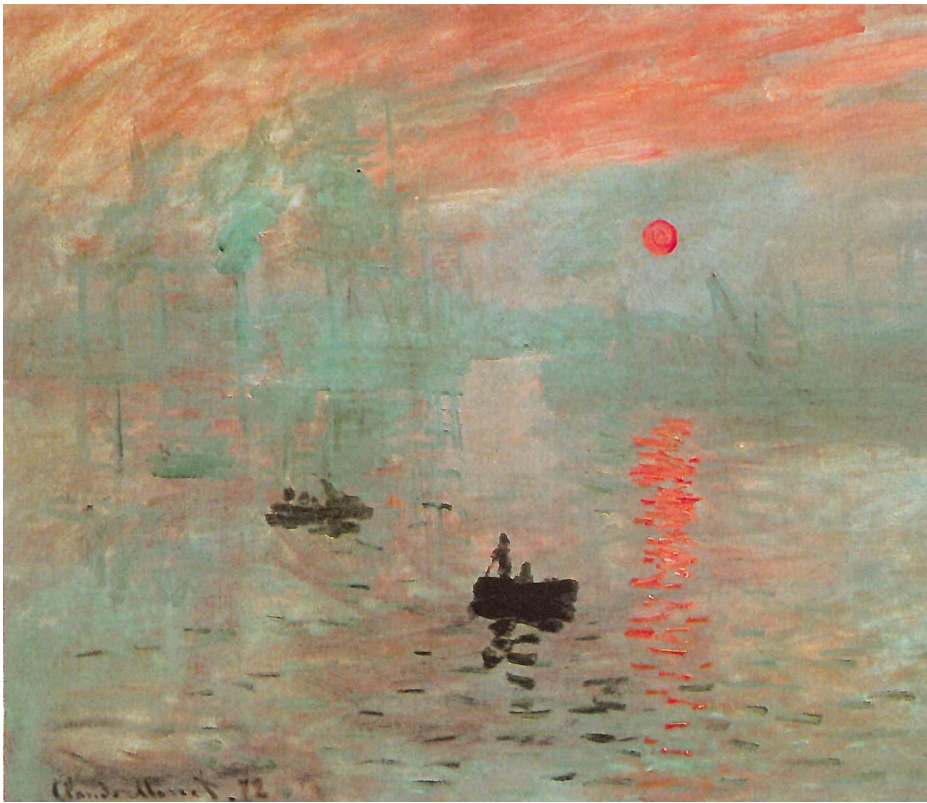


Fig.25. Monet's 'Impressionist Sunrise', 1872, Marmottan Monet, Paris: one of the first Impressionist paintings that was at first ridiculed, but now defines a whole art movement.

Heroin chic was a look that was disregarded as 'retro' but surprisingly didn't vanish as fast as most trends.<sup>150</sup> Some things stay adopted by a culture and some don't in a process of 'natural selection' of aesthetics, that is undoubtedly linked to reproduction. It is supposed that there cannot be any aesthetic certainty as tastes are always changing<sup>151</sup>, and unpredictably, as things that people never expect to be beautiful can become accepted as 'beautiful'.

When an aesthetic is 'too new', it isn't likely to get adopted in to the accepted aesthetics of a culture, because (as described previously) brand new visual information is 'meaningless'. For example, Monet's "Impressionist Sunrise" (Fig. 25) was heavily criticised as 'rubbish', but now the title of the painting defines a whole movement of art. The Eiffel Tower was labelled as 'an ugly, hateful bolted-tin column'<sup>152</sup> and now is a globally endeared landmark. The steam train too was opposed and thought of as ugly,<sup>153</sup> whereas now it is regarded as beautiful, and its functional value overrides its aesthetic controversy.

<sup>150</sup> D. Schefer, 'What is Beauty, New Definitions From the Fashion Vanguard, London, Thames & Hudson, 1997

<sup>151</sup> Stephen Bayley, 'The Ugly Truth', *Architectural Review*, Vol.233 Issue 1392, p22-23

<sup>152</sup> Stephen Bayley, 'The Ugly Truth', *Architectural Review*, Vol.233 Issue 1392, p22-23

<sup>153</sup> Stephen Bayley, 'The Ugly Truth', *Architectural Review*, Vol.233 Issue 1392, p22-23

Evolution has to be a gradual change, but it is a constant change. The Familiarity Effect explains that “people like things more when they are frequently exposed to them”<sup>154</sup>, but this exposure has to be ‘little and often’ to the point that it is almost subliminal.<sup>155</sup> Change is very noticeable, even to young children<sup>156</sup> so it has to ‘fit in to an integrated framework’.<sup>157</sup> At the other end, over-exposure can breed contempt<sup>158</sup>.

Cultural evolution is thought to come from the inner workings of the brain: “everything in the world is a product of the brain and culture, sieved together over the years and adapted together”.<sup>159</sup> Science and technology have made their most significant progress only recently, so we don’t have enough evidence from history to solidify any neural evolution theories into proven fact.<sup>160</sup> It is thought that the human brain changes have taken multiple routes of chance and necessity by natural selection, mostly selecting out extremes over time. Each culture will have taken its own evolutionary route, and their changes been hardwired (at least temporarily) to the ‘plastic’ brain.<sup>161</sup>

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<sup>154</sup> W.Lidwell,K.Holden, J.Butler, '*Universal Principles of Design*' p.70

<sup>155</sup> W.Lidwell,K.Holden, J.Butler, '*Universal Principles of Design*' p.70

<sup>156</sup> Arnheim, R. '*Art and Visual Perception*', 1984 p.44

<sup>157</sup> M.Barnard, '*Fashion Theory, A Reader*' Oxon, Routledge, 2007 p.48

<sup>158</sup> M.Barnard, '*Fashion Theory, A Reader*' Oxon, Routledge, 2007pp.100-110

<sup>159</sup> J.P.Hudson, M.Nadal, "*Art, Aesthetics and the Brain*" 1st Edition, OUP, 2015, Oxford p.6

<sup>160</sup> J.P.Hudson, M.Nadal, "*Art, Aesthetics and the Brain*" 1st Edition, OUP, 2015, Oxford p.5

<sup>161</sup> J.P.Hudson, M.Nadal, "*Art, Aesthetics and the Brain*" 1st Edition, OUP, 2015, Oxford p.4

In Western Culture, it appears that emphasis is placed on the importance of beauty, and that it's acquisition gives us 'competitive advantage'.<sup>162</sup> It seems the definition of beauty is obsessed with fantasy rather than function,<sup>163</sup> for example the V&A's definition: "Making luxury is not concerned with practical solutions but with the extraordinary."<sup>164</sup>

On the other hand the anti-principle suggests that ugly is 'fascinating' and more visually stimulating than 'beauty'<sup>165</sup>. But ugly often has negative connotations, so it may not be wise to just 'find beauty in ugly'. Again it needs to be reinforced that context is needed for any judgement.

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<sup>162</sup> S. Bayley, 'The Ugly Truth', *Architectural Review*, Vol.233 Issue 1392, p22-23

<sup>163</sup> M. Barnard, *Fashion Theory, A Reader* Oxon, Routledge, 2007 p.2

<sup>164</sup> 'What is Luxury' exhibition at the Victoria & Albert Museum, Cromwell Road, London, SW7 2RL, visited September 2015

<sup>165</sup> D. Schefer, *What is Beauty, New Definitions From the Fashion Vanguard*, London, Thames & Hudson, 1997, p.69-75



## CONCLUSION

In conclusion, defining the characteristics of perceived beauty that are 'nurtured' is essentially impossible. There are so many versatile dimensions combining together to influence our taste including the period in time; current mental state, personality and culture of the viewer.

First and foremost, the conscious brain is where opinions are derived, and it is extremely dynamic. The sheer complexity of consciousness means that it cannot yet be explained based on current research and scientific developments, and as a result nor can 'beauty perception'. Furthermore what we see is actually our own 3D interpreted model of what's in front of us, so inter-individual perception is extremely varied because we no one person is purely seeing what's in front of them.

Knowledge, (as part of the higher functioning of the brain), acquired through 'nurture' is what gives rise to more complex emotional responses by having attached connotations. Semiotic studies helps to identify and explain these meanings, and helps to enhance that we should know that what we are looking at may have stolen its meaning from the connotations of something else through visual imitation, before making aesthetic judgement.

Learning means that external information from the environment becomes unconsciously well-learnt knowledge within us all the time. This cycle of learnt information is what should be used as a more powerful measure of judgement, rather than relying on basic information such as instincts. It also may disprove 'human nature'.

Taste is a reflection of the dimensions that combine to create it: the current mental state, personality, culture and time period of the viewer. In this way taste provides a good measure of their change historically, and can be used to identify patterns of change, even if it can't define the characteristics themselves. Fashion shows clear patterns of cultural change, however it is a combination of social psychology as well as purely 'taste', since fashion is how people express themselves, and may not be their epitome of perceived beauty.

Any cultural change in taste must evolve gradually if it is to be successfully accepted, because new visual information is met neutrally and emotionlessly if it can't be comprehended by the viewer based on their own experiences. This cultural change comes from the inner workings of the brain, making inter-cultural changes physical. It is thought that the beauty perception of Westernised cultures is in limbo between being the mythical and extraordinary, or just pointless and deceiving, but either way, the importance of beauty is emphasised.

Nurture will always dominate over nature because no matter what building blocks a human starts off with in the form of genes, they will only be expressed under conditions that give rise to learning,<sup>166</sup> and ultimately no matter where the beginning is, there are infinite and unpredictable possible routes of complex neural development to bring us far from there, and far from 'basic' processes such as instincts.

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<sup>166</sup> J. Ellman, *"Rethinking Innateness: Connectionist Perspective on Development"*, MIT Press, London 1998 pp.4-8

## DISSERTATION CONCLUSION

This dissertation has been a journey of revelations about the reality of what beauty is.

Originally I believed that in looking at a visual, we would be able to break it down in to it's individual components, categorise them to x% nature and y% nurture, and reveal a 'recipe' - for the most beautiful aesthetic. In actual fact, nurture is born out of nature, but the two are inseparable. Our main innate dictator is our genes which are the seed, but they are just the beginnings of numerous possible routes to our characteristics, that may or may not get expressed depending on the chance they are exposed to specific environmental cues.<sup>167</sup>

The allegedly 'innate aesthetics' that we share with nature may or may not be intrinsic (for example symmetry), as there is the probability that even the appreciation of nature is learnt, and maybe we believe we like designs within them because our cultures inadvertently (or intentionally) teach us to like them. For example the Grecian theme as a topic of 'beauty ideals' is a very current phenomenon, since we still pay a lot of attention to Ancient Greece and its philosophers and fashion styles.

There is fundamentally a core to the 'perceived beauty', and it is a result of the basic emotions we experience from simple interpretation of visual information. This happens on a very basic neurological and psychological level, such as categorising information to a visual concept, but it is common to being a human. The crucial part of being human however is that we are 'conscious beings', and consciousness is where the complex, interactive brain activity happens that makes us who we are and makes decisions and takes some executive control over emotions. The conscious brain has the ability to override instincts and instinctive emotions through rationalisation by judging whether they are relevant or not. I think the perception of beauty probably comes from a number of brain areas interacting and all experiencing variations of agreeableness.

The conscious brain is always learning and physically moulding because it is a 'plastic organ', so it is changing on an individual level, on a cultural level, and according to the dimensions of time. This makes 'taste' a very elusive thing to define, however patterns of taste from the past can be observed. They reflect lots of factors such as culture, politics and psychology, making taste a useful visual tool of analysing the past, if not predicting the future. It would be interesting to conduct a broad and more detailed study of the patterns of fashion evolution, for example, to observe that different cultures might be closing in to more globalised versions of 'popular aesthetics.' The learning brain is what makes information 'feel natural', and decreases the probability that there is any such thing as 'human nature' in a healthy, adapting human.

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<sup>167</sup> J. Ellman, *"Rethinking Innateness: Connectionist Perspective on Development"*, MIT Press, London 1998 p.321

Knowledge allows for presence of connotations in visual information. The more that we know, the more meaning we can interpret from the visual information, so in absorbing as much information as possible, and building up an extensive bank of visual concepts, we can adapt as much as possible to our environment, including knowing that visuals need to be in context to be relied on.

It is evident that perceived beauty comes from the viewer not the viewed, and the meaning that translates is only what it can mean to the individual (providing they aren't relying on only instincts.) In the book 'Inspiring, A Sourcebook of Designers', P.Rogers proposes that the secret behind good design is in the designer personalities<sup>168</sup>. It would be interesting to develop this in terms of combining neurological and psychological studies to create detailed personality profiles of successful designers, and see what patterns and correlations of their neurological functions translate in to their work.

The importance of beauty is mainly a method of interpreting what we are looking at, in order to make a decision as to whether it is good or bad. This is done on a scale of 'beautiful' to 'ugly'. Perceived beauty is proved to be physically stimulating<sup>169</sup>, and like any stimulant, it can be abused, so should be used appropriately and in moderation. Moreover, some of our beauty perceptions are influenced by prehistoric workings such as instincts, which, in today's modern society, are redundant (for example fight or flight), and should be overridden by rationalisation with the conscious brain.

It appears that the importance of beauty is emphasised in Western Culture. The idea of beauty seems to be things that 'represent the boundaries of the unreal', and is 'utterly pointless other than promising the extraordinary'. This appears to be a good motivator however, keeping alive peoples appetites for more. Its status is maintained by its scarcity, and if something is too common then it is probably not beautiful anymore. In correspondence with Stephen Bayley, he agreed: "certainly, you can have too much beauty. If everything were beautiful then nothing would be."<sup>170</sup>

I think that even if in the future Neuroaesthetics does explain consciousness as the movement of matter, it will be too dynamic to define or predict. A more scientific explanation of how consciousness interconnects the different brain areas will be interesting however, even if, like fractals, it just provides some 'order amidst chaos'.<sup>171</sup>

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<sup>168</sup> P.Rogers, 'Inspiring, a Sourcebook of Designers', Black Dog Publishing, London, 2004 pp.1-5

<sup>169</sup> 'Simon Norris - Neuroaesthetics: Science Embraces Art', Youtube, (accessed September 10th 2015)

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