

Identifying aesthetic experience

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Aesthetic experience is a combined psychological, neurological, affective phenomenon. Aesthetic experience is not necessarily reducible to positive hedonic tone or positive emotions. It is known to occur when objects or events lose their pragmatic meaning and transcend into a novel symbolic reality. Neuroimaging studies have revealed that distinct cortical areas are activated when observers focus on the pragmatic or aesthetic aspects of art, leading aesthetic experience to be associated with other exceptional brain states such as flow. This article aims to assist art scholars, aficionados or practitioners to identify their own aesthetic experience, by discussing factors that express it.

Key words: pragmatic and symbolic meaning, subject-object aesthetic experience, neuroimaging.

‘n Verduideliking van estetiese ervaring

Slutelwoorde: pragmatiese en simboliese betekenis, onderwerp-objek estetiese ervaring, neurobeeldvorming.

Aesthetic experience is not synonymous with aesthetic preference. Beauty, or aesthetic preference, may be a precursor to the aesthetic experience provided it transcends its biological, psychological and social functions. Beauty thus needs to transcend from its pragmatic (extrinsic) to aesthetic (intrinsic) values. In this article beauty is not referred to philosophically, but rather to that which the viewer prefers in a hedonic way. It is only when objects lose their pragmatic meaning and transcend into a novel symbolic reality that an aesthetic experience is known to occur. Everyday perception is generally oriented toward the identification of objects – thus the pragmatic. Artists engage their craft (stylistic and structural properties) to evoke subjective reactions from the viewer, thus transcending the act of object recognition alone. Aesthetic experience is known to occur when an exceptional object-subject relationship exists.

Experimental psychologists Siobodan Marcović and Ana Radonjić (2008: 252) suggest that the perceptual experience of any everyday visual object can be defined as a complex amalgam consisting of sensory/perceptual descriptions (explicit features such as form, colour, depth), affective/emotional evaluations (implicit features such as hedonic tone, arousal, relaxation) and conceptual/cognitive aspects (recognition of thematic or informational content). They propose, in a ground-breaking way, that art perception alone is possibly the only salient example of how sensory descriptions, emotions and higher cognitive processes are intrinsically involved in the articulation of unique conscious experience. I liken their reference to unique conscious experience with aesthetic experience.

In this article the focus is on aesthetic experience with art, as opposed to, for example, music. Object refers to that which is being viewed or observed – in turn, subject is the person doing the viewing or observing. This article proceeds with a historical review of predominantly empirical studies of aesthetics in art, leading on to a discussion of scholarly approaches to aesthetic experience and how this fascinating phenomenon comes about. The latter part of the article is dedicated to discussing ways of identifying when engaged in aesthetic experience.

Studies of aesthetics in art

Psychologist Joydeep Bhattacharya and neurophysiologist Hellmuth Petsche (2002: 179) suggest that from the early history of civilisation the appreciation of visual art as well as its production have been deeply embedded in human nature. One could argue that it is due to the neural assemblies of the human brain that any art exists at all. The same authors further posit that, despite numerous research developments in aesthetics and cognitive science, the connection between the two remains reasonably unexplored. Awareness of the deep interrelationship between aesthetics and cognitive science is a relatively recent development and is not readily accepted by some art historians. Art historian Ernst Gombrich (2000) challenged the neuroscientists Vilayanur Ramachandran and William Hirstein's (1999) theory of human artistic experience and the neural mechanisms that mediate it. More recently art historian John Hyman (2010) responded with a scathing philosophical critique of both neurobiologist Semir Zeki and Ramachandran's understanding and explanation of visual art.

Ramachandran and Edward Hubbard (2003: 68) suggest that the explanation of aesthetics lies in an understanding of the connections between the visual centres in the brain and the emotional limbic structures (and of the internal logic and evolutionary rationale that drive them). The same authors (2003: 46-69) further suggest that 90 per cent of the variance in art is driven by cultural diversity and only ten per cent by universal laws that are common to all human brains. They emphasise that art is not about realism, but rather involves deliberate hyperbole, exaggeration, even distortion, that create pleasing effects in the brain. To this end they have devised a list of universal laws of art (which borrow insights from ethology, neurophysiology and psychology), each of which can be tested experimentally.¹

The experimental studies conducted by German psychologists Ernst Heinrich Weber and Gustav Theodor Fechner in the last quarter of the nineteenth century pioneered the measurement of how sensations vary systematically as a function of physical stimulation. Experimental psychology can thus be viewed as first attempts to quantify a human experience that could be regarded as essentially qualitative in nature. It was Fechner who, in 1876, first proposed a scientific approach to aesthetics with empirical studies of observable data and a procedure based on experimentation and quantitative measurement. These included, for example, studies on geometric shapes and individuals' aesthetic preferences. Albert Chandler (1928) was one of the first psychologists of art to publish in English on "experimental aesthetics" which included statistical and laboratory experiments involving quantitative measurement. Philosopher Thomas Munro (1948) offers a comprehensive discourse on American, British and German philosophical and scientific approaches to aesthetics and the psychology of art, inclusive of the various data-capturing methods used from 1918 onwards. The methods, at that stage, included amongst others, questionnaires, self-observation and case studies.² Up until the 1950s experimental psychologists had shown very little interest in the study of aesthetics – with noteworthy exceptions such as Rudolf Arnheim, Paul Farnsworth, Thomas Munro, and Max Schoen (Wallach 1959). Munro (1948: 226) referred to the psychology of art as a branch of applied psychology, which in turn was considered to be an outgrowth of the older subject known as "aesthetics".³ Hyman (2010: 245) suggests that philosophers still disagree amongst themselves about ideas on aesthetics that were raised in the fourth century BP.⁴

A tradition in research on art (in the broad sense) developed in the 1960s which emphasised controlled laboratory research. Daniel Berlyne's experiments, which typically included skin conductance, revealed over time that the hedonic qualities of artistic stimuli were traced to

changes in arousal, and that hedonic qualities of art came from biological systems of reward (Berlyne 1967; Berlyne 1971).⁵ In this regard arousal denotes physiological activation that can be measured – besides skin conductance (already mentioned), body temperature and heart rate are examples. Over time this model did not stand firm as a single system of arousal-and-reward – more recent studies “decouple” markers of arousal, for example, electrodermal responses and cardiovascular responses may decouple during the appraisal of an event (Silvia 2005). Recent empirical studies have expanded the context for explaining responses to art – in particular neurocognitive approaches to the psychology of aesthetics (Chatterjee et al. 2008; Höfel and Jacobsen 2008; Brandt 2009), reviews of studies of comparative neurology involved in aesthetic appreciation (Nadal and Peters 2008), neurocognitive approaches to art observation (Fairhall and Ishai 2008) and neurobiological approaches to aesthetics (Zeki and Lamb 1994; Zeki and Marini 1998; Zeki 1998, 2001, 2002; Ramachandran and Hirstein 1999). An overview of studies on aesthetics would be incomplete without investigating the role that emotions play in art, as discussed in the following section.

Art and emotions

Social psychologist Paul Silvia (2005) states that emotions and art are intimately related. Whereas this statement may seem overly obvious, “the study of art and the study of emotions, as areas of scientific inquiry, both languished during much of the last century. It is not surprising that the behavioral emphasis on observable action over inner experience would lead to a neglect of research on aesthetics” (Silvia 2005: 342). In a review of developments vis-à-vis emotional responses to art (but not of art making), Silvia (2005: 342) further explains that both art and emotion resurfaced in psychology more or less simultaneously during the 1960s and 1970s, when psychologists began developing theories of basic emotions where experimental studies were conducted focusing on hedonic qualities in art. Studies of emotional responses to art (which did not include recorded responses of art making) became noteworthy with Berlyne’s *new experimental aesthetics*. Researchers Ariana van Heerden and Marth Munro (2014: 140) mention appraisal theories “where the central assumption is that subjective evaluation of events, not events themselves, is the local cause of emotional experience. With reference to emotional aspects of aesthetics, interest seems to be the emotion most central to the aesthetic experience, however, typically, interest increases with training and knowledge”.

Emotions are interconnected with artistic appraisal. Marcović (2012: 10-11) explains that *complementing* (or reactive) emotions tend to reflect the emotions in real life, whereas *responding* (reflective) emotions are generated by the structure of the artwork itself. “Reflective orientation is evidently more important for aesthetic experience because it connects and unites the diverse contextual relations and the polyvalent meanings into a coherent aesthetic (artistic) whole”. Aesthetic emotions are not oriented to the satisfaction of bodily needs (such as thirst or sexual appetite) but rather to the aesthetic object itself. Being awed, moved, fascinated, enraptured are examples of such, and not reducible to everyday emotions.

Art and cognition

Behavioural neurologists Anli Liu and Bruce Miller (2008: 471) suggest that art, language, and music represent the highest forms of creativity of our species. Art, compared with language and

music in terms of neurological underpinnings, is still largely poorly understood. Core common features of visual art could be described as follows: art begins with a mental image (realistic or improbable, past or present); the artist then manipulates materials to actualise such a mental image. “This aspect of ‘human intervention’ distinguishes natural objects such as flowers or landscape from art, unless they are purposefully exhibited as objects worthy of special consideration (e.g., found art)” (Liu and Miller 2008: 471). Such manipulation is twofold – with the material, as well as in the mind.⁶ Furthermore, they suggest that art is a means of communication (as is language); and that art is original.⁷

Liu and Miller (2008: 471), moreover, describe a framework suggested by neuroscientist Anjan Chatterjee (2003) for understanding artwork by employing two axes. The first axis involves *purpose*. This may be either descriptive (to represent the real world) or expressive (to communicate an internal state): “The entire brain participates in the production of an artistic piece, but research suggests that the process of copying an ‘accurate representation of the real world’ relies strongly on the nondominant parietal lobe, while pulling up internal images activates memory systems in the temporal areas”.

In other words, descriptive art (as in copying) relies on the non-dominant (relating to handedness) parietal lobe, whereas expressive art activates the memory system. In this regard neuroscientists Christopher Belkofer and Lukasz Konopka (2008: 61) suggest that temporal lobe activation (such as in research employing electrical stimulation) may be related to the bubbling up of memories (suppressed or forgotten) that occur in art making. “These implicit memories, which are directly responsible for the formation of various emotional states, are primarily stored in the limbic regions deep within the temporal lobes.” In turn, art making may activate the temporal lobes and in so doing elicit dormant memories, emotions and possible sensations. Chatterjee’s second axis describes the *content matter*, presumed to be perceptual or conceptual: “Perceptually based content includes more sensory information, including light, color, form, texture, faces, and scenes. Conceptually based content, on the other hand, may be abstracted, symbolic, and simplified. This division between perception and concept contrasts the strengths of the dominant versus the nondominant hemisphere” (Liu and Miller 2008: 471).

Calvo-Merino et al. (2008: 913) state that in general neuroaesthetic studies seem to demonstrate an important role of prefrontal areas in aesthetic evaluation. They suggest that at least two broad brain networks may be involved in this process in which one is primarily perceptual, centered on sensory and attentional regions of the brain. The second, centered on the prefrontal cortex, appears to be primarily cognitive and points to hedonic activity. If participants liked a painting (as opposed to disliking), brain activity was found to occur in both visual and prefrontal areas, which included the occipital gyri and fusiform gyri which occur bilaterally in the visual cortex. Like Calvo-Merino et al., Cupchik et al. (2009) report on neuroimaging studies that have revealed that distinct cortical areas are activated when observers focus on the pragmatic (right fusiform gyrus) and aesthetic (bilateral insula) aspects of paintings (the pragmatic and aesthetic aspects are explained more fully in the following section). These researchers attribute the involvement of the bilateral insula in aesthetic perception to subjective experience of emotion and suggest that aesthetic experience is a function of the interaction between top-down (intentional) orienting of attention and bottom-up (constructive) perceptual input (Cupchik et al. 2009: 89-90).⁸ The pragmatic depends on stylistic factors such as, amongst others, recognisable content; linear or painterly dimensions; representational-abstract discriminations; and edges or luminance. This could, for example, activate the lateral prefrontal cortex, parietal lobes or the precuneus. The aesthetic (and more affective) aspects of paintings (that were used in the

experiments) were found to activate the bilateral insula of the brain. Cupchik et al. further report that apropos study findings, soft-edged art works, for example, are associated with the aesthetic (or symbolic) conditions, whereas hard-edged works are associated with pragmatic (everyday) conditions.

It is against this background of preliminary investigation that the aesthetic experience is further examined.

Aesthetic experience

A distinction needs to be made at the outset between aesthetic experience and phenomena such as aesthetic preference. Marković (2012: 2) explains that liking something or the judgement of beauty as belonging to the domain of “everyday experience with everyday objects”, thus the *pragmatic*. An example is when beauty becomes a vehicle for the satisfaction of bodily needs or an aspect of goal-directedness (thus pragmatic). When beauty transcends its inherent function (whether biological, psychological or social) it has the potential to transform into a new aesthetic and symbolic reality. Thus, beauty must transcend from its extrinsic, or pragmatic values to intrinsic, or *aesthetic* values. Gerontologist Robert McCrae (2007), in examining aesthetic chills experienced as transient emotional responses to music or art, suggests that individuals high in *openness* are, amongst other attributes, tolerant of ambiguity and able to make remote and unusual associations. Openness here, is seen “in the breadth, depth, and permeability of consciousness, and in the recurrent need to enlarge and examine experience” (McCrae 2007: 6). This is important when considering the possibility that sad, ugly or disturbing objects may elicit an aesthetic experience with potentially enlarging affect and effect. I agree with Marcović (2012: 9) that for the interpretation of sophisticated symbolic meaning specific declarative knowledge is required which is regarded as expertise (or explicit knowledge). Clinical psychologists Lengger et al. (2007) suggest that aesthetic understandings are based on gradual acquisition of insights attained through education. However, I posit that the ability for creative thinking and openness to experience are equally useful when appraising narratives (implicit knowledge).⁹

Aesthetic experience can be viewed as a psychological process during which a special kind of object-subject relationship exists, when the subject’s attention is fully focused on the object whilst everyday concerns or events are restrained or suppressed (Cupchik and Winston 1996; Ognjenović 1991). The result is a strong experience of identification or unity with the object and an exceptional relationship with the object of fascination and aesthetic appraisal. The primary condition for this relationship is that an object should transcend from the pragmatic (everyday) to the aesthetic (symbolic) stage of meaning. Thus, the aesthetic experience does not emerge automatically – “it is the result of an ecological and social context which specifies the specific subject-object relationship” (Marcović 2012: 13).

Marcović (2012: 12) describes the aesthetic experience as an *exceptional state of mind*, singularly different from everyday mental states. Marković (2012: 1-3) furthermore refers to definitions of aesthetic experience as being qualitatively different from everyday experience, yet similar to other exceptional states of mind. Exceptional states of mind that share characteristics with aesthetic experience are phenomena such as flow, peak experience, “Aha” experience, mindfulness, spiritual transcendence, absorption, presence and the “Ah” experience in art appreciation.¹⁰ Such states strongly resemble descriptive factors of the brain state referred to as flow, in that the person in question is fascinated by a particular object to the exclusion of the

surrounding environment, self-awareness is reduced, and the sense of time either speeds up or slows down. This induces “amplified arousal and attention [which] provide the additional energy which is needed for the effective appraisal of symbolism and compositional regularities in ‘virtual’ aesthetic realities” (Marković 2012: 12). (As with physiological arousal referred to previously, arousal here denotes a change in data readings caused by a trigger, resulting in neural or cognitive activation).

Cupchik et al. (2009: 89) found that since aesthetic perception is inherently self-referential, maintaining attention “on internally generated conditions”, or as autotelic action [my addition], this may be an important component of the aesthetic experience.

Marković (2012: 3) suggests that there are three distinctive characteristics that the aesthetic experience share with such other phenomena:

- The *motivational, orientational or attentive* aspects: during the aesthetic experience there is focus on an object or activity to the exclusion (or suppression) of all else; a loss of self-consciousness; and an induction of a distortion of the experience of time. Cupchik et al. (2009: 84) suggest that aesthetic experience is regarded as a psychological process involving attention focused on the object and the suppression of everyday concerns. These descriptors appear as various “text book” descriptors of the brain state known as flow.¹¹
- The *cognitive* (semantic, symbolic and imaginative) aspects: during the aesthetic experience aesthetic objects and events are appraised against the context of a symbolic or “virtual” reality. Such objects or events then transcend their everyday utility and connotations.
- The *affective* aspect: during the aesthetic experience an exceptional emotional experience takes place where a strong feeling of merging by the observer with the object of aesthetic fascination is discernible. This is referred to as exceptional subject-object experience.

Aesthetic experience has been tested variously, in terms of factorial structures of artworks, which are discussed in the following section.

Factorial structures of artworks present during the aesthetic experience

Both implicit as well as explicit features can be present during an aesthetic experience. In broad terms implicit features could be regarded as subjective, and explicit features as objective. Marković and Dragan Janković (2001) and Marković and Radonjić (2008) conducted experiments in which representative descriptors of connotative meaning were selected from frequently used adjectives that participants chose in descriptions of concepts. They found that explicitly viewed features could include the awareness of shape, colour, size, position or orientation, whereas the implicit domain refers to aspects or value judgements that the viewer brings to the scene (authors’ term – one could interpret scene as “that which is being viewed”, or the object). It is thus the implicit features of a scene that tend to play a dominant role in aesthetic experience.

Implicit factors can be classified in the following three groups: 1) Evaluation or hedonic tone which could contain value judgements such as good-bad; pleasant-unpleasant; 2) Potency or arousal, for example evaluations such as weak-strong; interesting-uninteresting; and 3) Activity or uncertainty, for example active-passive; complex-simple. Examples of adjective pairs in order to define implicit features of art works could include: balanced-unbalanced;

clear-blurred; healthy-sick: interesting-boring; arranged-chaotic; dynamic-static; flexible-rigid, etcetera (Marković and Radonjić 2008: 236). As mentioned in the previous paragraph, implicit features tend to be imposed onto the art work by the viewer.

Explicit features refer to stylistic features of artworks, such as the importance of colour and shape. Other explicit features refer to subjective elements such as the artist's beliefs or the importance of emotions; realism which points to the importance of reproduction; or classicism which refers to composition and impressionism. Examples of adjective pairs in order to define explicit features of artworks could include: oval contours-sharp contours: dominant figure-dispersed composition; light-dark; neat-messy; ornate-plain; realistic-abstract, etcetera. Explicit features tend to refer to directly perceived properties of paintings.

Marković and Radonjić (2008: 249-50) empirically specified a factor that expresses the aesthetic experience: fascinating, irresistible, unique, exceptional and inexpressible. Such definitions indicate that the aesthetic experience exceeds judgements of aesthetic objects (such as paintings) which could be deemed to possess either explicit and/or implicit aspects, which were discussed earlier. The aesthetic experience can thus also be induced by everyday objects such as natural scenes. Indeed, in order to increase the variability of responses, a variety of provocative objects could be included as stimuli – both artistic and non-artistic.

Having discussed factorial structures of artworks present during the aesthetic experience, identifying factors that express aesthetic experience follows below.

Factors that express the aesthetic experience

Calvo-Merino et al. (2008: 912) refer to the aesthetic experience as a psychological state, resulting from a particular type of sensory stimulus. The aesthetic experience can involve two types of evaluation: “[O]ne attributes intrinsic perceptual properties to the stimulus (e.g. ‘it is beautiful’), and the second characterises the observer’s response attitude to the stimulus (e.g. ‘I like it’).” Aesthetics can be approached from two different perspectives: objectivist theories rely on the induction of the aesthetic experience by stimuli (such as the golden section) in order for the perceiver to experience the symmetry, balance, complexity and order of an image; subjectivist theories, on the other hand, maintain that attitudes (such as taste and preference) reliant on familiarity or cultural environment, will produce the aesthetic experience.

Academics in the field of marketing, Annamma Joy and John Sherry (2003), argue that the memorability of aesthetic experience occurs when mind and body are intertwined, referred to as embodiment. They aver that one or the other becomes more prominent, depending on the content, and suggest that embodiment processes can be understood at two levels – these are the phenomenological and the cognitive unconscious.¹² Their research on art museum experiences explored to what extent people see, hear, feel, taste and smell art and found that perception is synesthetic (in which several of the senses are included, resulting in a holistic appreciation of the object). The same authors (2003: 261) propose that the term cognitive include any mental process of multisensory and neural processing – they argue that bodies move, experience through the senses, and act in conjunction with thought and speech within a space, “for people experience themselves simultaneously *in* and *as* their bodies”. In this regard it is useful to consider the contingent nature of a situated experience such as an installation not housed within a museum (which could be considered elitist and in which objects considered to be of value are exhibited

in temperature-controlled environments) but rather in a more democratic outdoor and public setting such as a park, open to the elements.

Phenomenological philosopher Maurice Merleau-Ponty (1962) suggests that perception consists of a physiological event as well as an intellectual judgement, since perceived objects are germane to a context. The ability to perceive thus becomes an acquired body skill. Such skills start evolving at a young age through observation, trial and error, practice and acquired experience. Experience and resultant competence can thus be the result of the body simply taking over – expertise can lead to action without a particular goal ever becoming prominent in a person’s mind. Again, this reminds of the flow brain state, when the body performs an action implicitly once skills and/or expertise have been embedded. Of importance for the context of this article, is that Merleau-Ponty (1962: 383) refers to the virtual body as a dimension of embodied existence which exceeds bodily skills to also include aesthetic activities – creativity and imagination are closely tied to the incarnate body and are placed at the centre of embodied life.

Marković (2012: 4-5) found through correlational analysis, a link between high arousal and aesthetic fascination – the higher the attention and concentration, the more extensive and longer-lasting the aesthetic fascination of the subject towards the object tended to be. It is interesting to note that aesthetic experience is not correlated with the experience of regularity and compositional harmony of paintings. In a previous study Marković (2010) concluded that the object of aesthetic experience needed to be, above all, arousing and interesting. Silvia (2005: 343) also suggests that “stimuli high in complexity, novelty, uncertainty and conflict can increase arousal”. Berlyne (1971) referred to arousal potential in which interest is determined by collative variables such as novelty, uncertainty and complexity and found that the greater the uncertainty, the greater the interest would be. Silvia (2005: 347-50) notes various experiments that tested how appraisals affect interest in art – participants who felt better able to understand visually complex art, found themselves attracted to more visually complex art, even though such art was not necessarily more enjoyable. Participants tended to spend more time viewing images that were higher in complexity, or when additional information such as titles or descriptions of art were offered. For complex pictures, ability to understand the art that was viewed strongly predicted interest. Interest increased as appraised ability increased.

Conclusion

Aesthetic experience is qualitatively different from everyday experience. Rather, it is similar to other exceptional states of mind. I suggest that from an attentional perspective a subject is having an aesthetic experience when, whilst engaging with the object, focus on the object occurs to the exclusion (or suppression) of all else; when the subject experiences a loss of self-consciousness and an induction of a distortion of the experience of time ensues. From a cognitive perspective, likelihood of aesthetic experience is emphasised when the object is appraised against the context of a symbolic or “virtual” reality; when it transcends its everyday utility and connotations and allows the subject to peer into what is *not* known, rather than into what is known. It then becomes an enlarging experience during which the subject could be flooded with metaphoric and symbolic associations. Affectively, an exceptional emotional experience takes place where a strong feeling of merging with the object of aesthetic fascination occurs. Aesthetic experience is not necessarily reducible to positive hedonic tone or positive emotions. Objects that do not elicit positive affect can still embody exceptional subject-object aesthetic experience, where

the after-effect can be both unsettling and exhilarating. The proviso is that the object must be arousing and interesting.

Without the viewer's involvement, some artworks will at best remain pragmatic. This points to an internally generated (autotelic) action. I further suggest that without openness to experience tolerant of ambiguity and able to make remote and unusual associations, the subject may not be drawn to regard certain objects as significant. When openness to experience is prevalent, seemingly eccentric objects can push the subject's threshold of perception and imagination in which the pragmatic translates to the aesthetic (the embodiment of associations that the subject's understanding, or lack thereof, holds). Recall that the pragmatic depends on stylistic factors such as recognisable content or representational-abstract discriminations associated with everyday experience with everyday objects. Some objects defy such comfort. Recall also that the aesthetic experience does not emerge automatically. Rather it is the result of an ecological and social context which amplifies the specific subject-object relationship. The result is a strong experience of unity with the object and an exceptional relationship with the object of fascination – in cognitive terms the object elicits a rich top-down/bottom-up engagement with the viewer. The experience is then truly a combined psychological, neurological, affective phenomenon resulting in novel symbolic reality. As mentioned in the introduction, art perception alone is possibly the only salient example of how sensory descriptions, emotions and higher cognitive processes are intrinsically involved in the articulation of this unique conscious experience. As a definitive statement this, however, requires further investigation and comparison with, for example, music perception and thus remains speculative.

Notes

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| 1 | An example offered by Ramachandran and Hubbard (2003: 55) is that cells in the fusiform gyrus of the brain respond powerfully to individual faces. | 7 | Some art is indeed original but I do not agree that <i>all</i> art is original. Such a debate would require a separate inquiry altogether, proceeding with definitions of what art is. That falls outside of the focus of this article. |
| 2 | In particular, Munro (1948) discusses work done by Chandler, Müller-Freienfels and Plaut. | 8 | There are two general processes involved in sensation and perception. Eric Kandel (2016: 22-3) describes top-down information as cognitive influences and higher-order mental functions such as attention, imagery, expectations and learned visual associations. Bottom-up processing receives information from the senses, which is often ambiguous – the brain then engages top-down processing to resolve what remains unclear. This could be referred to as guessing, based on experience, the meaning of the image in front of one. “Our brain does this by constructing and testing a hypothesis. Top-down information places the image into a personal psychological context, thereby conveying different meanings about it to different people.” |
| 3 | For more on experimental psychology and aesthetics see Dessoir, Fechner, Witmer, Legowski and Thorndike. | | |
| 4 | Aesthetics, in this article, refer not to philosophical concepts of beauty as such, but rather to visual art and responses thereto. | | |
| 5 | Berlyne referred to the primary reward system, which generated positive affect whenever arousal potential increased. He postulated that complexity, novelty, uncertainty and conflict contributed to arousal and appeal. The second system of reward was the primary aversion system, which generated negative affect whenever arousal potential increased (Silvia 2005: 343). | 9 | Art expertise is discussed in an interesting article by Augustin and Leder (2006). |
| 6 | In this article various authors refer to “mind”. Mind connotes the brain. | | |

- 10 Exceptional states of mind tend to elevate mood, inspire creativity and promote a sense of inner well-being. They are also often the result of intrinsic motivation and autotelic experience.
- 11 Many researchers have written on flow. I suggest Csikszentmihalyi (1997). I have published on this topic variously, and suggest Van Heerden (2010) for an introduction to the concept.
- 12 Joy and Sherry (2003: 261) refer to Kant's ideas that the aesthetic experience was only possible when bereft of basic bodily desires such as thirst or sexual appetite – and made the distinction between seeing and hearing, on the one hand, and other sensations that make it difficult to be objective, such as tasting, touching and smelling.

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