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THE STUDY OF MUSIC AESTHETIC THEORY, AESTHETIC OPPOSITION, AND PLURAL PLEASURE

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Abstract: This article aims to ellaborate three concepts, namely music aesthetic, aesthetic opposition and plural pleasure. These three concepts in the study of art and literature are often used to understand how humans create, develop, respond to, and enjoy music, understand aesthetic opposition, and plural pleasure. The results of the study show that human behavior is always related to music as an effort to seek individual pleasure and plural pleasure. Musical phenomena is able to be understood by exploring aesthetic opposition, namely through formalism and intuitionism, unity versus diversity, spontaniety versus reflection; interval versus morphology; smoothness versus roughness; attraction versus repulsion; parameter variation versus strategy variation; simplicity versus complexity, sensation versus communi-cation. The pleasure towards music is considered only as a short cut to other bigger goals. However, human behavior in relation to music is also biological expression. In addition, there are unique aesthetic pleasure alongside utilitarian pleasure. From modern cognitive neuroscience perspective, the aesthetic beauty notion cannot be realize in a nonutilitarian manner and is not easily reconciled with biology unless aesthetic beauty is based on plural pleasure.

Introduction

Theory of modern aesthetic first appeared in the 17th and 18th centuries beginning with a reasessment of the so-called 'inferior cognitive faculty' in Gottfried Wilhelm Leibniz and Christian Wolff's work and culminating in Alexander Baumgarten's comprehensive aesthetic epistemology which he called as "the metaphysic of beauty", a planned project that covers pschology, semiotics, mediology (rhetoric and poetry), ontology and ethics (Berndt, 2019: 21). In his two books, *Metaphysica* (1739) and *Aesthetica* (1750/58), Baumgarten expands this epistemology to be distinctive since it is developed based on literaly examples drawn from dense poetic passages in lyrics and classical epics (Berndt, 2019: 21).

However, the most influential writer in aesthetic field is the German philosopher, Immanuel Kant (1724-1804). Kant laid down two pillars in aesthetic science in the West (Berger, 2009). First, he distinguishes aesthetic beauty from other forms of beauty. Aesthetic beauty is not another kind of beauty distinguished: for example, art is not a sublimation of food, sex, warmth, or any combination of other pleasures present. Second, Kant argues that aesthetic emotion are 'disinterested' in aesthetic beauty, there is no beneficial or ulterior motive underlying this experience. A mother's appreciation of her daughter's beauty cannot be considered as an aesthetic appreciation simply due to the mother's experience is discreditable by her pride as a parent. For Kant, aesthetic emotion has no pratical purpose (Huron, 2016: 233).

Dialogically, Baumgarten establishes an aesthetic relationship with racionalist philosophy and ancient methodology. Retrospective references to rhetoric and poetry, now commonly known as 18th-century-proto-aesthetic theory, allowed him to understand

aesthetic judgement genre. It is due to Baumgarten not only analyzes how aesthetic experience – faced by the world richesness is abundant, being structured – but also considers how subject can develop their natural talents in such a way that they can understand the world well, better, and in the best way (Berndt , 2019: 21). In Baumgarten's view, aesthetic experience leads to knowledge of a more complex world than logical cognition. The increase of art aesthetic experience becomes philosophy subject that is relevant epistemologically and later revolutionized the epistemology. In a sudden, art opens the alternative way for human understanding on world and ideal way.

The first aesthetic theory in the modern era was born mainly motivated by the necessity to prove that aesthetic is indeed philosophical subject, namely a subject that deals with the question of aesthetic judgement correctness. In order to answer this question, Baumgarten relied on traditional philosophical works in shaping and defining concepts and terms (Berndt, 2019: 22). In his philosophy, he distinguished between some series of concepts of truth with various metaphysical premises. In the journey, he created a new concept adapted to aesthetic experience: aesthetic-logical truth (*veritas estetikaologica*). The first opposition in this system had to do with the distinction between object and subject. Baumgarten put objective metaphysics (*metaphysica obiectiva*) as opposed to subjective metaphysics (*metaphysica subiectiva*).

Through the idea of objective truth, Baumgarten continued in the ontological field. In the context of a truly modern aesthetic theory, this truth no longer seems interesting; it 'untimely' position is a disturbing consequence, particularly when measuring the modern era by Kantian aesthetics parameter. In Baumgarten's defence, it must keep in mind that even Hegel's aesthetic fully takes into account the object, so that constructing an aesthetic theory lies in the ambiguity between subject and object. Similarly, Baumgarten's contrasting subjective truth definition, which he understands as logical truth in a broader sense and thus also referred to as intellectual truth (*veritas mentalis*) or influence truth, correspondence, or comformity (*veritas afficientiae*, *correspondentiae et conformitatis*). He summarizes this distinction in *Aesthetica* as follows: "Metaphysical truth may be called objective truth; representation of things that are objectively true in a certain soul, subjective truth" (Baumgarten, 2007: 424).

Baumgarten positions logical truth (*veritas logica*) and aesthetic truth (*veritas aesthetica*) on the side of subjective truth. While logical truth is firmly embedded in rational epistemology, and aesthetic truth is something completely new and philosophically Baumgarten calls it the real truth or material (*veritas realis, materialis*). These terms do seem to contain logical contradictions (*contradictions in adiecto*), even paradox (L'etoile, 2016). However, Baumgarten relies on "aesthetic-logical" concept to save him from the paradox. He put this aesthetic-logical truth on the side of subjective truth, between logical and aesthetic truths, in which the composite is tasked with reconciling reasons and senses. This logical-aesthetic truth not only has logical elements that can be brough into discursive expression, but also has aesthetic elements, namely real or material elements, which are completely nondiscursive (Berndt, 2019: 22).

However, semiologically, aesthetic truth is lower than logical truth (since it is nondiscursive) and higher than it (since it is more complex). Above all, aesthetic truth is strictly independent, and perhaps even autonomous. By analyzing his aesthetic experience, Baumgarten points to the vanishing point of this kind of aesthetic autonomy in the Kantian sense. Both can be easily explained with reference to plastic art: the discursive element, for example, of a painting fromVincent van Gogh's sunflowers series, is the fact that it is a sunflower painting which the truth is guaranteed by botany; while the nondiscursive elements are the reality or materiality of a sunflower painting, for example canvas texture, colour formula, contour and colour choises, brush strokes.

The media that Baumgarten references are not ancient paintings or sculptures. In contrast, Baumgarten's aesthetic epistemology is based on literary texts, thereby

simultaneously creating a modern literary theory. This reference media is clear in the sense that logical and aesthetic phenomena are relatively easy to separate from each other in literary texts. Semantic and grammatical aspects are responsible for logical truth, while all pre-predicate phenomena that appear in nondiscursive parts of literary texts refer to aesthetic truth. Such phenomena are the sensual dimensions of literarylanguage, particularly figures and speech figures and their performatives, phonetic and rhythmic elements in particular, as well as graphic visual figures.

If literature is used as a reference by Baumgarten in building an aesthetic epistemology, therefore in music, Kant's aesthetic idea is developed by the famous Austrian music critic Eduard Hanslick (1825-1904). In *Vom Musikalisch- Schönen* (On Beauty in Music) in 1854, Hanslick proposes a very influential view of core concepts in cognitive science. Hanslick challenges the later prevailing belief that music can represent or express feelings (Croce, 2005). He says that the sensation can be imaginatively perceived by the listener. In this case, contemplation process in aesthetic affects aesthetic emotion emergence. In short, aesthetic judgement precedes and leads to aesthetic feeling. Hanslick's view has become a definition in itself and a major parameter in the debate concerning musical aethetics. All the major philosophers in musical aesthetics have been involved with Hanslick's ideas, for example Susanne Langer (1942), Peter Kivy (1990), Roger Scruton (1997), Jerrold Levison (1990, 2003) and Stephen Davies (1994) (Huron, 2003). 2008:151).

Theory of Music Aesthetic

Most aesthetic scholars have followed a rationalist approach that emphasizes the interpretation of existing theories and critical philosophical discussion. Apart from this philosophical tradition, aesthetic questions have also been addressed by scholars oriented towards scientific experimentation. In fact, experimental aesthetics emergence coincided with the beginning of modern experimental psychology. One of the founders of modern experimental psychology is Wilhem Wundt (1832-1920) who conducts a number of experiments related to aesthetic experience. Wundt says that stimulus complexity and aesthetic beauty evoked by an optimal and complex art object that is not very simple, but also not very complicated (Huron, 2008:152).

Aesthetic experiments were also carried out by another early experimental psychologist, Gustav Fechner (1801-1887). In his book entitled *Vorschule der Esthetik* (Basic Aesthetics), Fechner suggests that 'half of aesthetic' came from learned associations (1876:89-90). Lullabies, for example, can evoke comfort feeling solely since the learned associations between songs and formative experiences are entertained by the singer. A German immigrant who emigrated to the Unite States, Max Meyer (1873-1967), conducted a key experiment showing that listeners preffered family music to unfimilar one. Meyer (1903) shows that listening to music adapted from novels that are played repeatedly tends to increase psychological satisfaction (Cros, 2016). Meanwhile, the Gestalt psychologists conducted several relative experiments which resulted in a number of empirical demonstration of various perceptual principles. They suggest that the principles of psychological satisfaction can be observed, both in the visual art and in the musical art (Huron, 2008:152).

In experimental music aesthetic is always associated with harmony and dissonance perception (Johnson, 2021). The ancient Greeks observed that tunable sonorities seem to involve component tones which the frequencies are related to simple integer ratio. Hermann von Helmholtz (1877), Carl Stumpf (1883), and Robert Lundin (1947) say that the psychological conditions for consonance and dissonance as well as harmony and dissonance preferences stem from culture arising from exposure relative frequency to different sound combinations and prevailing attitudes to the voices in it from a certain social environment (Adorno, 1997). In the 1970s, there were a lot of evidence pointing to

psychological and cultural factors influencing the assessment of singer's sonority. Regarding the psychological basis, significant breakthroughs have occured in the 1960s through the work of Donald Greenwood (1961), Reinier Plomp, and Willem Levelt (1965) who suggested that dissonance can be traced to mechanical disturbances in the hearing organ. Regarding the enculturation influence and familiarity on stimulus preferences, mainstream psychology remains ignorant to Meyer and Lundi's pioneering works. Experimental research conducted by Wilson (1976, 1079) unkowlingly redefined what Zajonc (1980) later dubbed the "mere exposure effect". Over the past century, more than 200 experiments have shown that familiarity has a marked impact on preference, particularly when listeners are not aware that the sound is familiar (Huron, 2008:152).

Among several empirically renowned volumes on the aesthetics science, perhaps the most comprehensive effort is found in the work of Canadian psychologist, Daniel Berlyne. In his 1971 book, Aesthetics and Psychobiology, Berlyne expanded on Wundt's observations concerning the relationship between complexity, passion, and beauty. In particular, Berlyne connects Wundt's observation with contemporary neurophysiological research on beauty. Berlyne proposes how the phenomenal pleasure experience is associated with passion and complexity. He distinguishes two effects that trigger beauty; first, the source of beauty arises from a moderate increase in passion. Second, the beauty that arises from the inhibition or reduction of a high level passion (Huron, 2008:152).

More recent experimental investigations have been introduced by Vladimir Konecˇni and colleagues which emphasize general assumption concerning aesthetic experience. For example, Mozart's *sonata-allegro* movement does not result in a less pleasant experience for the listener. Similarly, Nicholas Cook (1987) conducted an experiment to evoke coherence or beauty from longer duration songs more than two minutes. In this regard, Konecˇni and Cook identify large-scale structures that occur accross cultures. For example, Ollen and Huron (2004) conducted a musical repetition patterns analysis drawn from 50 cultures, and found a cross-cultural preference for early repetition, for instance the pattern: AAABAABA extracted from ABAABAAA pattern. The pattern was thought to be consistent with the twin's goal of increasing predictability while avoiding habituation. Despite its long history, the experimental tradition in aesthetics has had relatively little influence among aesthetic philosophers. This is due to in musical aesthetic, the empirical approach has been neglected or irrelevant. Among many music schollar, the empirical notion of musical beauty is considered naive, and indeed, some claims justify this view (Huron, 2008: 152-153).

In contrast to the limited impact of experimental aesthetic on maistream musical aesthetic, the cognitive revolution has proven an inspiration to a number of aesthetic philosophers (Lamont et al., 2016). Before discussing the relationship between cognitive science and aesthetic, we can distinguish two different conceptions of cognitive science. Prior to cognitive revolution, Anglo-American psychology was dominated by behaviorism, a perspective that emphasized sensation, motor behavior, and learning. Influenced by linguistics and computer science, cognitive psychologist juxtapose themselves with behaviorism by emphasizing the mental life imaginative aspects. For example, if one views emotions as a type of reflex, cognitive psychologists tend to view emotions as stemming from cognitive judgments, namely emotions evoked by conscious or unconscious evaluations depending on the underlying conceptualization. According to this view, judgment precedes emotion (Huron, 20008:153).

Until the mid-1990s, cognitive science was considered contradict with more biological approaches to understanding the mind. Early cognitive science also ruled out the emotion role. However, over the last two decades, the science of mind have merged with what Joseph LeDoux calls "the unified kingdom of consciouness and emotion". Cognitive science has moved from a strictly cognitive perspective to embrace insights from ethology, evolutionary psycology, psychophysiology, genetics, biochemistry, and neuro imaging. The cognitive perspective remains as important component of contemporary cognitive science, but no

longer occupies the core to the exclusion of other perspective. In short, cognitive science is becoming less and less cognitive (Huron, 2008:153).

This cognitive field transformation has impact on aesthetic cognitive science. We can discuss concerning two approaches. First, the cognitive approach. Second, the cognitive neuroscience approach. This distinction is important since there are two cognitive aesthetic approach which opposites to the one in cognitive science (Busoni, 2012). The traditional cognitive view holds that cognitive judgment precedes emotion. A person's consciousness or unconciousness evaluation is a direct source of emotion generated. This view is consistent with Hanslick argument that sensations are interpreted imaginatively, and that subsequent contemplative processes lead to the emotion possibility. Music simply evokes emotion after passing through cognitive and interpretive filters. Music and aesthetic evaluation meaning precedes the music influence (Huron, 2008:153).

This cognitive experts' view has been popular in literary aesthetic field. English literature scholar, Christopher Butler (2004) says that cognitive perspective is related to the pleasure generated by narratives. However, cognitive approach appears to be more useful in literary accounting and representative arts than abstract art or instrumental music. Art forms with narrative content are seen as pleasure expressions generated by cognitive and emotional conceptions (Huron, 2008:153-154).

Cognitive conceptions have been critized by psychologists and philosophers. Experimental studies have proven that at least one's emotion can emerge without cognitive judgment. Criticisms of cognitive perspective on emotion have been echoed by several music philosophers, most notably Malcom Budd (1985) and Geoffrey Madell (2002). Experimental evidence showing that emotion can be evoked without cognitive judgment can be seen in the emotion that arise through conscious reflection such as when a husband is being jealous by his wife due to he was caught on a phone bill that her husband used to call his ex-lover. However, emotion can also arise without conscious intervention thought such as in a startle response when someone slams a door or hears a voice tone that indicates aggression (Huron, 2008:154).

Such automatic unconscious responses can also be observed in behaviors that are usually thought of as "higher level" mental process such as symphathy and empathy. Some philosophers, such as Roger Scruton, have argued that responding sympathetically to sadness is not similar to sadness feeling. However, the view of modern neuroscience theory seems to contradict this claim. For example, a person witnessing other person cutting his finger can produce negative feeling for the person whose finger is injured. Modern neuroscience findings suggest that some complex emotion can be experienced by a person with little or no cognitive mediation. In short, cognitive neuroscience implies that there are cognitive and noncognitive pathways to arouse emotions (Huron, 2008:154).

If neuroscience modern discoveries are connected with highly advanced music technology development, the music aesthetic theory has also undergone dramatic changes, since music technology, particularly electronic music, has changed the way human respond to and enjoy music. Along with basic philosophy of organized sound, technology has changed temporal organizing nature of music. In particular, film sound recording advent led to temporal plane expansion by composers, which allowed for micro-control of time in music, which in the future, composers will be confronted with not only the entire sound field, but also the entire time area (Roads, 2015). The split-seconf frame concept, as in established film technique, will probably becomes the measurement of time basic unit, so that no rhythm is beyond the reach of composers.

Manipulating film sound on micro-timescales is impractical, however magnetic tape media, which became available in the 1950s, made splicing details more managable. The tape splicing opens a pathway to previously inaccessible regions of the microphone. Composers such as Stockhausen, Koenig, Xenakis, Davidovsky, and Parmegiani began to explore the microtemporal boundaries of organization. At a typical band velocity of 38

cm/second, 1 cm fragmen represents a microtemporal interval of about 26 ms. Digital audio technology is very useful for accurate sample editing on a time scale of one millionths of a second (Roads, 2015).

Not only can be sound edited on a micro scale, the time support may also vary; sound duration is no longer fixed, and the sound can be played in reverse. Varispeed tape loop allows for unlimited time extension with pitch shifts. Pioneering electromechanical devices such as Gabor Kinematic Frequency Converter have shown that one can also strech or decrease a sound duration without changing its pitch (Roads, 2015). Today, the digital domain provides a powerful set of tools for changing times. These ranges from simple granulation techniques that "freeze" the sound to experimental techniques such as dictionary-based chases in which the time and frequency bases in the sound can be changed on a grain-by-grain basis. These technical advances aesthetic implication is that the temporal support of a given sound can be composed more or less freely. It also means that we can realize arbitrarily complex rhythmic structures with ultra-fine precision.

The possibility of manipulating sound on any time scale has opened up various transformations. Manipulation on micro-timescales, in particular, enables new compositional processes, which include: (1) sound merging and separation through particle density manipulation; (2) time stretching and shrinking of sound patterns with or without pitch change; (3) lamination of multiple sound layers with microtemporal delay patialization on micro timescales; (4) precise polymetric rhythm, created by combining multiple particle streams; (5) pulses and tones with multiple formant streams, each with a time-varying frequency and spatial trajectory; and (6) microsurgery to extract chaotic, harmonic, very loud, very soft, or other components in a sound and reattach it with changes.

The basic idea of multiscale composition is that all levels of temporal organization can be composed independently at all steps in the composition process. At each step, for example, we can vary the synthesis scope, editing, or transformation operations by applying them on an appropriate time scale, from macro shapes, to sections, phrases, individual sound objects, items, and even individual samples (Roads, 2015).

This contrasts with a compositional strategy which plans a high-level structure or a low-level process and later, for the sake of consistency, limits the composer's freedom afterward. This plan usually begins with a preconceived macro form or a formalized generative process. In contrast, the multiscale approach to composition recognizes the fact that composition comes together in stages and at multiple levels. In order to work in the widest possible zone of creativity, composers want to navigate freely across timescale boundaries, to reevaluate and modify strategies at each stage. This means not only making corrections, but also opportunistically taking advantage of the insights gained in the re-evaluation, perhaps elaborating on ideas that emerged in the initial process (Cros, 2016). All timescales can be planned and arranged, however these plans need not be rigid, and can adapt as the compositional terrain shifts. For generating, deleting, rearranging and changing sounds on any timescale at any step, this is a multiscale approach to composition.

Aesthetic Opposition

One of the ways to define and understand music phenomenon is the binary opposition method, namely using and placing a partner with the opponent. High cannot be understood outside the context of low, neither can near and far, large and small, and so on. Similarly, certain aesthetic tendencies can be seen as their opposite, and examining these tensions can sometimes lead to the insight gain. We can explore certain aesthetic opposition that arise in composing music, among others through the theories of (1) formalism versus intuitionism; (2) coherence/unity versus discovery/diversity; (3) spontaneity versus reflection; (4) interval versus morphology; (5) smoothness versus roughness; (6) attraction versus repulsion in time; (7) parameter variation versus strategy variation; (8) simplicity versus complexity in synthesis; and (9) sensation versus communication.

First, formalism versus intuition. The comosition embodies an ancient dualism: formalism/intuitionism. Formal process models are natural for musical thinking. While listening, some people enjoy the sensual experience of sound, while others set up cognitive expectations. Since the dawn of musical notation, composers have been able to manipulate musical material as symbols on paper, apart from the act of producing sound in time. Therein lies the fundamental divide. Since formal symbols can be arranged in an abstract way, such manipulations have been closely identified with musical structures organization. As Schillinger (1946) pointed out, one can create a music generator from any mathematical formula or data set one finds. Lejaren Hiller's pioneering experiments with automatic composition in the 1950s proved that computers can model arbitrary formal procedures (Roads, 2015). Music, however, is more than an abstract formal discipline, which ultimately translates into perceived sound. Therefore, music remains rooted in acoustics, auditory perception, and psychology.

Computers translate every human movement into formal operations. The system is coded in programming language logic and executed according to machine hardware algebra. An important question is: "At what musical structure level does such formalism operate?". We consider a pianist practicing on a digital piano, which is a type of computer music system. He does not worry that his performance triggers a flurry of memory access and data transfers. Familiarity with the piano sound makes interaction seem direct and natural. However, this is a great illusion. With a change in formal logic, the same equipment that produces piano notes can also synthesize granular clouds, as demonstrated in the Creatovox instrument (Cross & Tolbert, 2016).

Applied to different strata ofcompositional organization, formal algorithm can be a powerfull discovery tool. Algorithm function to generate sound grains that can manage millions of microscopic details. Other algorithm can quickly switch through variations, offering composers a wide range of options to choose from. Interactive performance systems try to balance programmed automation with spontaneous decisions and expressive movement. Many composers combine algorithmic and intuitive strategies (Roads, 2015). While formal algorithm allows interaction with machines, strict formalism in composition means imposing limits on one's self. Formalist composers follow a systematic plan from start to finish. The plan must ultimately translate into the real world of acoustics, psychoacoustics, musical cognition, and emotional responses.

Second, coherence versus diversity. Coherence must have a relationship with the listener's subconscious perspective. However, is this the only function? Does not that bring things out or new into a wider coherence? In academic theory, formal coherence is one of the most proud characteristics of musical composition. In general, coherence signifies "logical integration and consistency." This quality is not always easy to measure in practice. In its most obvious form, coherence manifests itself as a limitation in compositional material selesction and consistency in the operations applied to that material.

One way to ensure formal consistency is to place composition under the regime of an algorithm. In this case, the operation ensures that the piece always falls within the boundaries of the formal rules. Such an approach results in a neat package, free of anomalies and logical inconsistencies. The resulting composition can be proven to be formally consistent, even if it is boring or incomprehensible (Roads, 2015). The problem is that the generative process harshness does not guarantee the work musical coherence. In order to reaffirm, music is not a purely formal system; rather it is based on acoustics, auditory perception, and psychology. Musical coherence appears to be a poorly understood psychological category (Li et al., 2019). It is one of those ubiquitous terms in aesthetic discourse that everyone uses subjectively and no one has ever studied it from a scientific point of view.

Therefore, we can focus on other criteria in the way of writing. Creativity is at least as important as coherence. The legal profession's definition of a new invention as an "unclear

extrapolation from previous work" is a reasonable starting point. Novelty depends on the historical and cultural context. What was not clear to composers in 1913 was shown by Paris premiere of Stravinsky's brilliant musical invention, The Rite of Spring (Roads, 2015). Like coherence, the unity notion is often emphasized as an aesthetic ideal, and "the oneness of all things" is a common theme in spiritual teachings. What we find equally profound is the endless differentiation in nature. Every snowflake, every blade of grass, every living thing is unique. We speak of the human body as one thing as if it were not an incredibly diverse and ever-changing community of trillions of different cells with their own lives that house more and more microbes. Such diversity is the fantastic discoveries of nature product. In addition to embracing diversity as an end in itself, we need to accept the idea that unity can emerge from diversity. The clearest example in the music domain is the well-established notion of variations on a theme, in which case multiple variations echo a common theme, however this principle can be extended to all spans of time and dimensions of musical organization.

Third, spontaneity versus reflection. In electronic music new examples of respectable opposition in music-making, testing improvised performances the immediate spontaneity on stage with carefully reflective process of studio-based composition. It is not a matter of which one is better than the other; they are different worlds—like the difference between acting and drama writing. Intuitive decision making occurs in both domains, as does planning. The main difference is the live timescale associated with live performances (Roads, 2015). On stage, there is no turning back. In the studio, activities can be canceled and revised.

There are other important differences in operation larger scope in studio environment, namely: (1) Studio decision-making can consider the entire time range, from macro to micro. For example, one can adjust a single item until it has the right morphology, or filter the entire composition in one operation. (2) The timing support of any sound can be modified arbitrarily: stretched or collapsed with or without pitch correction, reverse playback or shuffled in time by granulation process. (3) Due to revision possibility, the composition does not have to go through the composition. For example, the end can be placed before the middle; or, based on how it ends, can initially be modified. (4) An arbitrary number of independent musical threads can be precisely superimposed through mixing (Roads, 2015). Such skill on stage can be enchanting, eliciting a rousing reaction from the audience even though the compositions performed are simply normal. However, in a studio setting there is a prime selection for composers looking for as much creative control space as possible. This is not to say that studio-based reflection is without downside risks. Indeed, an ever-present danger in studio work is overproduction, which results in contrived results.

Fourth, interval versus morphology. Atomism forces us to give up the idea of sharply defined and statically defined solid boundary surfaces. A classical aesthetic places great value on works of art that conform to certain simply defined proportions, ratios, and numerical intervals (Roads, 2015). This aesthetic has been imprinted throughout the history of music, especially in the realm of tonal relationships. This is also implied in the rhythm metric treatment, with duration value scales based on two- and three-beat divisions. Interwoven with interval thinking is the notion of scale. Each continuous musical parameter (spatial position, filter settings, etc.) can be further subdivided into arbitrary scales and later manipulated in an interval relationship. The 20th century saw the introduction of serial, spectral, and minimalist aesthetic theories, all of which were intervals. The main difference between them is in terms of which intervals and scales are the most important (Roads, 2015).

However perceptual reality is more complicated than interval thinking simplification. The most acoustic instruments instantaneous frequency is constantly changing. Noise is everywhere. The difference treshold limits all perception aspects. Masking and other

nonlinear effects complicate perception. Training and mood greatly affect listening to music. Considering all sound materials and procedures mean shifting the aesthetic focus from sharply defined intervals towards ever-changing and blurred boundaries (Lamont et al., 2016). It is not a matter of avoiding or excluding interval structures, but rather accepting plasticity: allowing rigid structures to metamorphose into liquid structures and back again. Through the use of microsonic processing, we can dissolve solid notes into a more pliable material that cannot always be measured at certain intervals.

In this flowing structure, item density quality – which determines the material transparency – becomes great importance. The increase in item density induces tone fusion, lifting the cloud into the foreground. The decrease in density induces evaporation, dissolving the vocal cords constantly into the rhythm of the evaporated background texture. Keeping the density constant, a change in the item characteristic itself induces a change.

Fifth, smoothness and roughness. The classical geometric shapes are lines and planes, circles and spheres, triangles and cones. The intervals organization depends on the stable material; the pitch in a chord should not suddenly become unstable and fall apart in the middle. Electronic sound synthesis techniques can produce a very smooth and stable continuity; a prime example is the pure sine tone. However, this same technique can also be programmed to produce intermittent and non-stationary textures, which tend to be extreme towards chaotic noise bands (Roads, 2015). The pitch continuity determinants are stable, rounded waveforms and item length or pitch duration. In contrast, the noise signals determinants are irregular, jagged waveforms and short item durations. This contrast between fine and coarse timbre can serve as a tension element in a composition, similar to the tension between tonic and dominant or consonance and dissonance. As in classical music opposition, the transition between the two extremes acts as a bridge.

Sixth, attraction versus repulsion in time domain. The attraction and repulsion universal principles govern the universe appearance, as well as atomic particles inner structures. It manifests itself in physical biology in terms of pleasure and pain experiences, and in the psychological experiences of love and hate, lust and disgust. It governs individual human relations, as well as relations between tribes and cultures. We can apply the attraction and repulsion principles in music through coalescing or diverging process to certain points on the timeline. For example, Igor Stravinsky (1947) used appeal as a means to organize the time structure of a composition. Varèse (1966) thought that it was possible to adapt repulsion principle as an organizing principle. When these sound masses collide, penetration phenomenon or repulsion is likely to occur (Roads, 2015). Temporal attraction can take three forms: attraction to a point, attraction to a pattern, and attraction to a meter. When many items or impulses are attracted to a certain point in time, the clustering results in a swarm or explosion. The opposite of attracting sound to a point is repulsion of sound or silence.

Interest in a pattern refers to a strong tendency to repeat a certain rhythmic motif. Ancient musical isorthism exemplifies this phenomenon. A pattern impulsion refers to the absence or avoidance of order in motif figuration. The attraction metric is the tendency to align with a regular beat. Powerful metric beats attract metric responses. It is easy to sync multiple layers on top of a regular pulse. The opposite of attraction metric is repulsion metric, found in nature rich in ametric rhythms (Roads, 2015).

Seventh, parameter variation versus strategy variation. Each sound synthesis technique is controlled by a number of parameters. Consider the frequency modulation (FM) technique pioneered by John Cowning (1973). The timbre of many computer music pieces of the 1970s and 1980s depended on variations in several FM parameters. We have been witnessing a similar phenomenon with respect to granular synthesis since the late 1990s (Roads, 2015). As a strategy, parameter variation maintains consistency within a predetermined variation space, potentially leading to monochromatic tones. As an alternative to this rather limited situation, the synthesis method itself can be the subject of

variation. Switching to a different synthesis technique (or source sound) changes the variable set of parameters, which can be a refreshing contrast.

Parallel situations arise in the show using an algorithmic composition program controlled by several variables. This is a common strategy in live shows. Here the composition process is based on parameters variation of one algorithm. This tends towards a limited range of motion, as no development can occur that cannot be derived from a predetermined set of parameters (Chambers, 2013). The switch to a different algorithm, with different parameters to control, is an escape from this finite cage. Another strategic change is to increase or decrease to control different levels of the structure. The juxtaposition revitalizes the senses by breaking the closed cycle of permutations and combinations on a single time scale.

Eighth, simplicity versus complexity in sound synthesis. Certain basic sounds, such as pure and magical sine waves, can be made expressive with just a touch of vibrato and tremolo, and perhaps a slight reverberation. However, most of the other interesting sounds are somewhat complicated in their time-varying behavior. In creating such a sound, one question is whether to embed complexity in a complex synthesized instrument, or whether to use a simple instrument in a complex way (Roads, 2015). Rather than designing the equivalent of a large Wurlitzer organ controlled by dozens of parameters, we seem to prefer a different and simple small instrument.

Ninth, sensation versus communication. Sound waves speak directly to perception. They can be likened to direct tactile sensations, if touch could penetrate into the inner ear. Within a fraction of a second after the eyes, nose, ears, tongue or skin are stimulated, a person knows that the object is familiar. Such recognition by psychologists is called preattentive perception, which occurs so accurately and quickly, even when the stimuli are complex and the context in which they occur varies (Roads, 2015). Musical experience is a cognitive response to perceptual reactions. Music directly touches emotions and associations, whereas intellectualization is a side effect. Traditional musical language follows a familiar grammar (Perone, 2004). In creative music, where the grammar is unfamiliar, the surprise is often finding familiarity.

In this music, the role of the composer is to create a pattern of acoustic sensation in the form of a code. Code organizes sensations into meaningful structures. The intellectual and emotional challenges experienced by composers in creating these structures may be deep and intense. However, they are independent of what the listener is experiencing. The composer could not hope to explain the mindset brought into the concert hall by the listener. The acoustic sensation is inevitably filtered by the listener through the narrow filter of subjective mood and personality. This interpretation triggers a circle of emotion and reflection that is unique to each person.

Music can be seen as a form of communication in the sense that it can serve as a medium for sharing meaningful emotions and gestures. An “ideal” musical communication would imply a direct transmission from composer to listener. However, music perception is not a point-to-point transmission. Music stimulates listeners with organized sensations. Every piece of music is like a boulder of complex shape, with designs engraved on it and in it, which humans can decipher in a thousand different ways without ever finding the right answer.

Plural Pleasure

The idea that the art main attraction is to generate pleasure (hedonism) has not yet become a popular idea among Western aesthetic philosophers. However, cognitive neuroscience has recently given new life to the old idea. Perhaps the most important achievement of cognitive science is the invention favored by the mind and body in general which creates a series of specialized structures (Lowe, 2007). Many debates among aesthetic philosophers assume that empirically it can be said to be wrong if the mind is

unified and homogeneous. Since the mind is capable of propositional hinking, it is easy to suppose that musical experience must arise from propositional thinking. Due to thoughts form associations, musical experience must emerge to describe associations (Huron, 2008:154).

In modern cognitive neuroscience, such claims are considered cumulative rather than mutually exclusive. For each stimulus given by the mind, the modular system applies propositional, associational, representational, empathic, and narrative mental processes simultaneously (Ferrándiz, 2008). While a person's experience of seeing beauty and ugliness can be involved in cognitive appraisal, not all such experiences require cognitive appraisal. In short, cognitive assessment is considered adequate, although in practice it is not necessary to experience musical beauty (Huron, 2008:154).

The parallel mental processes idea has changed human understanding of pleasure phenomenon. There are many human behaviors that can arouse pleasure, such as scratching an itch, quenching thirst, solving puzzles, predicting future events, feeling virtuous, emptying the bladder, conversing with friends, receiving compliments, putting cold hands in warm water., etc. The physiology science has traced unique neurological pathways associated with different pleasures, from the pleasure of eating chocolate to the pleasure of high jumpers (Huron, 2008:154).

The pleasure center in the brain was discovered by accident half a century ago by James Olds and Peter Milner (1954). In addition to these neuroanatomical discoveries, a number of endogenous molecules have been implicated in revealing the human experience of acquiring pleasure. These include dopamine, oxytocin, serotonin, alpha, beta, gammaendorphins, and beta-neoendorphins, dynorphins A and B, major dynorphins, methionine encaphalins, leucine encaphalins, and others. Each endogenous molecule evokes a somewhat different form of pleasure, and each is released in a number of unique circumstances. For example, oxytocin is released in various interpersonal situations related to pleasure, including hugs, romantic eye contact, breastfeeding, and sex (Huron, 2008:155).

In setting up a pleasant event agenda, one rarely limits himself to generating one form of pleasure (Cross & Tolbert, 2016). Human behavior most common pattern is to combine several pleasures into one experience. For example, a person will feel happy if he drinks beer, smokes a cigarette, watches a football game, and chats with his friends at the same time. Viewed from the perspective of neuroscience, the person's actions show that the pleasures caused by alcohol, inhaling nicotine, and strengthening social bonds are the result of different neurological effects (Huron, 2008:155).

A useful metaphor for describing hedonic pluralism is a dinner party. A person may decide to cook a very good meal, but he is unlikely to work alone in the kitchen throwing a party. Therefore, of course he will invite his friends to help make the food (this is called social pleasure). Next, he buys flowers to embellish the table setting in the dining room (this is called visual pleasure), later he lights a light-scented candle (this is called olfactory pleasure), so on, he turns on recorded music (this is called auditory pleasure), and so on (Chen et al. al., 2016). Therefore, anything that begins with gustatory pleasure quickly develops into hedonic pleasure. When humans are given various opportunities, therefore in fact he has accumulated pleasure for pleasure (Huron, 2008:155).

The'plural pleasure' discussion has had an impact on the philosophical debate concerning hedonism. Aesthetic philosophers say that hedonism is all pleasurable experiences that can be reduced to a single value. Hedonism implies that pleasure is interchangeable with sexual orgasm. The most common argument against hedonism is that the positive emotions evoked by godly feelings are disproportionate to sensory pleasures, such as seeing flowers. Geoffrey Madell summarizes this anti-hedonism argument by noting that the pleasure of listening to good music is phenomenologically different from the pleasure of eating junk food frequently. However, there are two discoveries that have given

new life to the hedonism argument, namely: a) evolutionary psychologists have offered convincing arguments that all emotions (including jealousy, shame, pride, etc.) are evolutionary adaptations that promote survival. and procreation, b) neurophysiologists say that the brain contains many pleasure systems. The neohedonic objection to hedonism is that pleasure biology is not unidimensional and it has many independent sources. A person's pleasure can be equated only when he uses the same endocrine or neurotransmitter pathways (Huron, 2008:155).

If pleasure is multidimensional, it may be the multifaceted pleasure that music itself brings. The following are some of the ways that are thought to arouse pleasure: (1) listeners prefer stereo reproduction to monaural reproduction, (2) familiar sounds are preferred over unfamiliar ones, (3) novelty seeking is a human behavior that is valued by many, (4) infant-directed singing has many features in common with infant-directed speech and these features are favored by infants, (5) the traditional practice of listening to sounds is considered a brain reward for successful use of hearing (Huron, 2001), (6) people feel pleasure from the display of outstanding musical skills or craftsmanship at their disposal, (7) experienced listeners regularly delight in recognizing musical quotes or allusions to other works, (8) music-induced *shiver'* or *frisson* is believed to be something very fun. Huron (2006) has suggested how such experiences can arouse pleasure, (9) listeners are entertained and proud if they listen to music whose style or genre is consistent with self-identity or social identity (Huron, 2008:155-156).

The list represents only a partial catalogue of the reasonable pleasures that music may bring (in various combinations). It is likely that future research will trace specific neurological pathways involved in the various forms of evoked musical enjoyment (Bisesi & Windsor, 2016). It also appears that musical sounds are capable of activating many of the pleasure pathways in the brain. By way of a dinner party, musicians can combine a unique mix of pleasure into one musical experience (Huron, 2008:156). Indirect evidence supporting this 'plural pleasure' can be found in an experiment conducted by Avram Goldstein (1980). Goldstein exposes listeners to parts of music that excite and make them enjoy. Half of the listeners received injections of an inert saline solution, while the remaining listeners received injections of naloxone and an opiate receptor antagonist. Goldstein's results showed that the reduction in pleasure induced by music for naloxone-injected listeners did not fully experience musical pleasure. The implication is that there may be more than one way for music to arouse pleasure (Huron, 2008:156).

For Hanslick, the main problem in musical aesthetic is explaining the beauty of music rather than explaining the feeling of music. However, for psychologists, Hanslick's view implies an 'essentialist' conception of music. For Hanslick, beauty is not caused by music, but for psychologists, nothing in this world is objectively ugly or beautiful. Humans feel threatened if they are in the dark, but on the other hand, humans will feel happy if there is sunlight. However, bats have the opposite experience, which is to feel happy when they are in the dark. We enjoy the smell of roses more than the smell of rotting corpses. In the words of Donald Symons (1992), "beauty depends on the person who sees it" (Huron, 2008:156).

The feelings evoked by a situation can be traced proximally; however the feeling itself is produced by brain mechanisms that have evolved to increase the adaptability of organisms (Theorell, 2014: 79). Humans love life and fear death since these feelings contribute to human survival. A person falls in love and protects his children since there is a feeling of love in his heart then that feeling contributes to the process and success of human reproduction. In the orthodox opinion, in biology and psychology, evolution is a feeling evoked by art that should be traceable to one or more evolutionary underlying mechanisms. This logic has led a number of scientists to offer evolutionary stories concerning aesthetic experience (Huron, 2008:156).

Charles Darwin himself launched a speculation history concerning the possible evolutionary benefits of music and art. In the last half century, new evolutionary aesthetic

theories have emerged almost every month. The art theory of evolution is speculative and controversial. Part of the controversy arose from the ease of "storytelling". As Paul Griffi notes, "adaptive hypotheses are very easy to form and very difficult to test". That is, the adaptive hypothesis is uncontrolled speculation, as Jon Elster (see Huron, 2008:156) puts it that "the first step towards a positive answer is telling a story that makes sense".

In recent decades, many evolutionary accounts of art have been discussed, for example by Eibl-Eibesfeldt (1989) who argues that people tend to prefer landscapes that resemble primordial savanna environments over hominid evolution. Cross-cultural studies show that aesthetic preferences favor environmental conditions that have been conducive to survival, not in the contemporary world, but in the evolutionary world of Pleistocene humans. In terms of music evolution has been discussed by Geoffrey Miller (2000), Ian Cross (2001/2003), David Huron (2001/2003), and Steven Mithen (2006) (Huron, 2008:156-157) (Huron, 2008:157).

Most records of music evolution have a functional purpose, namely to create pleasure for humans which then becomes a human experience. The creation of modern music tends to involve a large number of mechanisms that evoke pleasure, and therefore, it is difficult to separate from the music original goal, namely mixing hedonism and agglomeration (Huron, 2008:157). From the science point of view, there are a number of perspectives that can be conveyed regarding the reconciliation of art with biology. It is said that music and art originate from adaptive pleasure, which is an activity related to social bonding, sexual selection, or related to language learning. In this case, it can be said that Immanuel Kant views musical aesthetics as utilitarian (Berger, 2009).

The first perspective states that human behavior is always related to music as an effort to seek pleasure, but it does not have an adaptive dimension. That is, the pleasure of music is considered only a shortcut to another goal. In this sense, music is considered similar to addiction to nicotine or heroin. The second perspective asserts that human behavior related to music is a biological expression (Costelloe, 2013). That is, humans view music as an incidental artifact that influences their behavior to be adaptive to their environment. Music is also seen as a form of sickle cell anemia which is an artifact of a heterozygotic genetic strategy to protect humans from malaria infection. In addition, music can also be considered merely an artifact that carries out non-functional brain mechanisms that aim to promote language development (Huron, 2008:157).

However, for many people, none of these ideas are particularly appealing. For example, the idea that music is biologically ordained seems absurd and problematic. Similarly, the idea that music is a non-adaptive form of pleasure seeking (such as cocaine use) is equally displeasing (Graham & Kermani, 2006). Finally, the idea that music is a physiological accident is anti-climax. While these ideas invite quite sharp polemics due to they discuss about the origins and goals of music which ultimately raises fundamental empirical questions that should only be answered through scientific research in the future (Huron, 2008:157).

Conclusion

The musical aesthetic theory, aesthetic opposition, and plural pleasure in cognitive science universe has opened an interesting space for debate since it turns out that there is a fundamental disagreement between modern psychologists and traditional Western aesthetic experts. The basis of conventional Western aesthetic has been transformed into the idea that there is a unique aesthetic pleasure in addition to utilitarian pleasures or plural pleasures. The music aesthetic theory is viewed by psychologists and evolutionary biologists as a mechanistic process of the brain that produces adaptive emotions. Over the past two decades, a number of aesthetic philosophers have been inspired by the cognitive revolution. Cognitive science – which includes the aesthetic theory of music – lends credence to the contemplative view that cognitive science serves to raise significant challenges to aesthetic

philosophy in general. From modern cognitive neuroscience perspective, the aesthetic beauty notion in music cannot be realized in a nonutilitarian (individual way) and is not easily reconciled with biology. Along with modern neuroscience development in music technology, it is evident that music aesthetic theory has undergone dramatic changes through music technology, particularly electronic music. The music aesthetic theory has revolutionized the way people think and behave in composing, responding to, and enjoying music.

Human behavior in the cultural universe is always correlated with the world of music as an effort to seek pleasure, both individual pleasure and plural pleasure. However, pleasure does not have an adaptive dimension. That is, the pleasure of music is considered momentary or temporary, not continuous. Therefore, it is not surprising that there are people or groups of people who think of music as nothing more than an addiction to nicotine or heroin. This paper can also prove that human plural pleasure towards music is a biological expression and views music as an incidental artifact that influences his attitude to be adaptive to his social and cultural environment. Human plural enjoyment of music is also seen as an artifact of heterozygotic genetic strategies to protect humans from various diseases, and not only that, music is also seen as an artifact that carries out non-functional brain mechanisms related to one's ability to speak.

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