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MUSIC AND EMOTION: AN EMPIRICAL CRITIQUE OF A KEY ISSUE IN THE PHILOSOPHY OF MUSIC

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Overview

There is a long tradition of speculative writing on music by aestheticians and musicologists, with notable contributions by Avison (1752), Hanslick (1854), Gurney (1880), Langer (1942) and Meyer (1956), whose ideas are very much alive in the contemporary thought of philosophers of music such as Davies (1994, 2001), Kivy (1989, 1990, 1999), Levinson (1990, 1996) and London (2001-2002). The crux of the debate in these works has been the relationship of *music* and *emotion*, and specifically the issues of *expression* and *induction* of emotion by (instrumental) music. Kivy has addressed these issues influentially, in part by means of his *emotivist* versus *cognitivist* dichotomy. A related topic has been the comparison of "musical emotions" to those that arise in the non-musical "real world."

The aims of this paper are: (a) to show that the most important claims by the contemporary philosophers of music are empirically testable; (b) to review some of the recent experimental work, including that in the author's laboratory; and (c) to demonstrate how such methodological and empirical advances can render certain aspects of the philosophical commentary obsolete (including Kivy's – as it turns out – rather simplistic dichotomy).

The paper concludes with a statement of the attempt to replace the concept of "musical emotions" by those of the empirically measurable responses and states of "thrills/chills," "being moved" and "aesthetic awe" – with all three of these states being hierarchically arranged components in the Aesthetic Trinity theory (Konečni, 2004a, 2005a).

Empirical Testability of Claims in the Aesthetics of Music

In papers at three recent aesthetics conferences (Konečni, 2004a, 2004b, 2005b), in Wuhan (China), Rio de Janeiro, and Daugavpils (Latvia), I tried to demonstrate that many claims in (philosophical) aesthetics are empirically verifiable. The assertion was also made that when a philosophical statement permits falsification (e.g., Popper, 1935/1959) by feasible empirical tests, there is little justification for continuing to make the claim – especially in the face of competing cogent claims – without attempting to carry out the empirical work, or, at least, to have a mental readiness to modify the claim when faced with the results of reasonable empirical tests.

Among the various domains of philosophical aesthetics, claims in the domain of music are especially notable for their empirical testability. Perhaps the main reason for this is the formal and highly specialized nature of music theory that does not easily permit nebulosity, politically motivated arbitrariness, and relativistic caprice. Even music criticism is rather technical, so that examples of "destructive deconstruction" (Konečni, 2004a, 2005a) are blissfully rare – limited mostly to the occasional excess regarding, for instance, the patriarchal/male-sexual nature of development in Beethoven's symphonies or the oppression of women in opera; and while the body of feminist work in these areas is undoubtedly growing (e.g., Clément, 1988; Cusick, 1993; Meredith, 1993-1994; McClary, 1991, 1993, 1994), it is circumscribed. Other artistic and cultural domains are simply more suitable – in part by requiring less technical knowledge – for the purpose of the application of socio-political agendas. By being relatively exact, the language of music generally forces a greater degree of precision in the language about music – and this, in turn, increases the possibility of meaningful empirical tests.

The second reason is the key role that the concept of emotion has rightly had in the writings on the aesthetics of music; and although definitions of emotion have abounded in both philosophy and psychology, the accumulated methodological and measurement advances in experimental psychology have gradually led to a contemporary crystallization of opinion, specifically with regard to a distinction between emotions and, for example, moods, drives, attitudes, and personality dispositions (e.g., Barrett, 2006a, 2006b; Konečni, 1982, 1991, 2003; Scherer & Zentner, 2001). The fact and nature of measurability of emotional experience (as opposed to, for example, an attitude about some emotion-related object) dictate definitional precision. So, unless philosophers of music decide to ignore the recent experimental (including neuro-scientific) work on emotion in psychology – which they can do only at their intellectual peril – they will have to, as a first step, tighten their definitions of emotion. Time has perhaps come to become technical about emotion (instead of inadequately introspective, folksy, or arbitrary).

Most psychologists who work on the relationship between music and emotion (M-E) pay little (e.g., Gabriellson, 2001-2002; Konečni, 2006; Krumhansl, 1997) or no attention

to philosophers of music, including Kivy. Unfortunately, an examination of Kivy's (1989, 1990, 1999) emotivist-cognitivist dichotomy in the present paper will justify its continuing neglect by the experimentally (and even logically) minded. The attention that Kivy's approach receives here is not due to its objective merit, but to its influence and centrality in the philosophy of music. The present focus is a useful demonstration of whether and how psychological findings may (should?) affect the discourse on M-E in philosophy.

Psychological Theorizing and Findings Relevant to the Emotivist-Cognitivist Dichotomy

Kivy's view of the emotivist position is that the expression of an emotion by music is essentially nothing but the music's power to induce that emotion in the listener.

Listeners will judge or describe a piece of music as "sad" to the extent that it makes them sad. This implies (a) that music has the ability to induce, directly, an emotion, such as sadness, in listeners, and (b) that listeners are unlikely to judge a composition as expressive of sadness if they experience no emotion. Perhaps the best defense of the emotivist position, which gave a renewed impetus to "arousalism" in the philosophy of music, was provided by Radford (1989, 1991).

The cognitivist position, which Kivy espouses, specifically rejects the emotivist point (a) above on the grounds that the listener's sadness, as one of the "garden-variety" emotions, requires an object that is believed by the listener to fall under the emotion-relevant description – and music does not fulfill this requirement (of course, an off-key singer may cause garden-variety annoyance, but that is not interesting here). With regard to point (b) above, the cognitivist view is that the expression of emotion by music is related to the listeners' recognition of that emotion (without experiencing it). So one could say that both the emotivist and the cognitivist view accept that music may express emotion, and the key difference is one of the form that expression takes, specifically regarding the possibility of induction of emotion.

This writer's view, on the basis of psychological theorizing and experiments, is that both points (a) and (b) above, in the emotivist position, are incorrect, but that the reasons presented for the incorrectness by Kivy are also inadequate: Kivy is right, but arbitrary, regarding (a), and right, but incomplete, regarding (b); in both cases, he is oversimplifying.

Emotivist Point (a), Regarding Induction of Emotion

Definitions of emotion in experimental psychology are based on a great deal of empirical work and are thus forced to consider many factors that Kivy, for example, in his armchair, has the luxury of ignoring. An example of issues and processes that have emerged from over a 100 years of experimentation can be found in Konečni (2003, p 332):

"Because the primary emotions -- anger, fear, happiness, sadness -- guide and energize behavior in crucial life situations, those with enormous biological consequences, they have been subjected to considerable selective and adaptive evolutionary pressures. Emotions are psychologically, physiologically, and metabolically "expensive" and thus reserved for emergencies; when they do occur, they are major events in human phenomenology. The key attributes of the basic emotions are that

numerous bodily systems are involved, simultaneously and in tandem; that they are acute, occurring in "episodes," with feedback loops; highly pronounced; readily identifiable and reportable by the experiencer; that they flood consciousness and are pan-cultural in terms of experience and expression; and that they have an unambiguous cause/object."

As can be seen, the requirement of emotions having a cause or object (believed to be relevant by the experiencing person) – the requirement that is Kivy's sole criterion for "garden-variety" emotions – is only one in a long integrated list. The items on this list have been explicitly taken into account in several models of emotional states as temporal episodes, one of which is Konečni's (1991; 2006, see Figure 1) Prototypical Emotion-Episode Model (PEEM). In this view, Kivy is correct in rejecting the emotivist point (a), but, since he has a limited factual basis for doing so, the rejection can be considered gratuitous.

In the present view, the emotivist point (a) – to the effect that music can directly induce emotion in listeners – is inaccurate because of the "directly" specification. Very recent research (Konečni, Brown, & Wanic, in press) strongly indicates that the effect of music on emotion occurs, when it does, only because it is *mediated*, for example, by the thoughts, memories, and personal associations of the listener – and even then the emotion, though genuine, is of low intensity (see also Table 1 and Figure 2 in Konečni, 2006).

Although this notion is not entirely new to philosophers, it is not welcome, for different obvious reasons, to either emotivists or cognitivists; however, such an indirect, mediated effect is all that they are likely going to find, if they stick to facts and the empirical literature, with regard to the induction of emotion by music. This is because a number of well-known empirical studies (e.g., Krumhansl, 1997; Nykliček, 1997; Rickard, 2004; Waterman, 1996) that are typically cited by emotivists (or part-time emotivists) in philosophy, and the adherents of the M^eE model in the psychology of music, as supporting their respective points of view, are actually far from convincing when subjected to an appropriate methodological and experimental scrutiny (Konečni, 2006; Konečni, Brown, & Wanic, in press; Konečni, Wanic, & Brown, in press).

Music-Induced Emotions and Those in the (Non-Music) "Real World"

The emotivist point (a) can be usefully addressed from a somewhat different angle – traditionally interesting to experimental psychologists of music – by comparing directly the emotional states (if any) induced by music to the states resulting from experimental manipulations analogous to the ways in which emotions typically arise in the non-musical "real world." The study by Konečni, Brown, and Wanic (in press) is perhaps the first in the literature to compare the effects of "sad," neutral, and "happy" music on the participants' emotional state to the effects of the same participants' recall of sad, neutral, and happy life-events on their reported emotion, using the same 13-point happy-sad scale. In the case of recall, the participants provided measures of both how they felt at the time the event originally occurred and how they felt in the laboratory having just thought about the event. The music selections were by Albinoni, Respighi, and Vivaldi, with the first and third of these

the same pieces that were used by Krumhansl (1997). For both the “sad” and “happy” tasks, the participants rated their emotional state at the time the (non-musical) real life-event actually occurred as considerably more extreme than both (a) their emotional response to it at the time of recall and (b) their response to the musical stimuli. In addition, even the emotional state experienced in the laboratory after recalling the life-event was significantly more extreme than the one produced by music. In terms of the aforementioned PEEM, there is no doubt that thinking of a real-life event is a far more powerful stimulus than is listening to music of the same valence.

One aspect of this study conceivably provides some support for the emotivist viewpoint: The participants’ ratings of their emotional state after listening to music were significantly different from zero (the scale midpoint). Not much should be read into this M*E “residual,” however, because it can be readily and convincingly explained by methodological, linguistic, and cultural response artifacts (Konečni, 2006) and, more substantively, by the M*Assoc*E model mentioned above (Konečni, Brown, & Wanic, in press).

Emotivist Point (b), Regarding Judgment of Expressiveness

Given the suspect status of the direct induction of emotion by music, it follows that the emotivist point (b) – that listeners are unlikely to judge a composition as expressive of an emotion if they do not experience that emotion – is even more dubious. Indeed, there is overwhelming evidence that people can reliably judge the expressiveness of a piece of music, including the emotional “domain” or “label” that a composer or performer wishes to communicate, even though they *feel nothing*. Subjective processes remains at the level of cognition – evaluation, recognition, deliberation, judgment (no matter how fast or unconscious). Kivy’s cognitivist rejection of the emotivist point (b) – one could justifiably claim that the latter is a straw position – is therefore obviously correct in terms of the big picture; however, his rejection lacks detail and contextual subtlety that the research literature provides.

Perhaps the most complete recent reviews of the effects of musical structure and performance attributes on the judged expressiveness are by Gabrielsson (2003) and Gabrielsson and Lindström (2001). These authors reviewed studies from the end of the 19th century to the most recent work and considered numerous studies that had used a variety of measurement techniques and involved an examination of the effects of over 20 structural factors both in isolation and in real music. Although Gabrielsson and Lindström (2001) note many methodological problems and gaps in the evidence, there seems to be little doubt – even, to some extent, cross-culturally – that “music can express, depict, and allude to both the differential auditory patterns commonly associated in the abstract with the fundamental emotions, and the specific physical and vocal behavior of a human or animal experiencing and displaying such emotions” (Konečni, Brown, & Wanic, in press, p. 3). Without engaging in additional definitional quibbling with philosophers of music, it can be safely stated that “emotional expression” in music – without induction – is a far more complex issue than either emotivists or cognitivists (including Kivy) have acknowledged, and that it has by now been thoroughly documented by psychological research.

“Musical Emotions” – Or Aesthetic Awe, Being Moved, Thrills?

Along with recognizing the possibility of M*Assoc*E, Charles Darwin and some of his contemporaries suggested the idea of music inducing strong emotions but of a kind qualitatively different from the basic emotions – hence “musical emotions.” For instance, according to Gurney (1880/1966, p. 120), “[m]usic’s... essential effect... [is a] production in us of an emotional excitement of a very intense kind, which yet cannot be defined under any known head of emotion.” Recent users of the term have been Kivy (1999), Krumhansl (2002), and Scherer, Zentner, and Schacht (2001-2002).

A century and a quarter after Gurney’s (1880/1966) book, the term remains deeply unsatisfying. One can only agree with Zangwill (2004, p. 35) who writes: “Why call it [i.e., musical emotion] an emotion if it does not stand in any of the rational relations that we normally think characterize emotions? We are left with a potentially obscurantist view which speaks of emotion but which is not prepared to pay the price.”

The dissatisfaction with the term “musical emotions;” the realization (reached by Plato, Darwin, and Gurney, among others) that music can, at least on rare occasions and in special settings, have profound emotional or quasi-emotional effects that are subjectively different from the experience of the basic emotions; the data from Gabrielsson’s (e.g., 2001) Strong-Experiences-with-Music (SEM) approach; the aforementioned findings by Konečni, Brown, and Wanic (in press); and the work of Keltner and Haidt (2003) on awe: All of these considerations have led the author in the formulation of the Aesthetic Trinity theory (Konečni, 2005a), the name of which refers to the related states of aesthetic awe, being moved, and thrills or chills.

Aesthetic Awe

Aesthetic awe is regarded as the most profound human aesthetic response – to a *sublime stimulus-in-context*. In the present view, the sublime is epitomized by objects of great rarity, exceptional beauty, and physical grandeur (among other features discussed by Konečni, 2005a). The Cheops (or Khufu) pyramid of El Gizeh, Egypt, is the prototypical sublime stimulus to which, under appropriate circumstances, *aesthetic awe* is proposed as the prototypical response. Aesthetic awe may have originated in primeval times in response to natural wonders, which was later extended to colossal human artifacts. It is a mixture of joy and fear, but, somewhat unlike the basic emotions, it can be more easily “switched off” by altering the focus of attention: The sublime does not urgently press, from an existential point of view (Konečni, 2005a). Nevertheless, the perception of existential safety is crucial, especially for the natural sublime.

Being moved and thrills or chills are postulated as always accompanying aesthetic awe, but are far more frequent responses (especially thrills/chills). Aesthetic awe presumably shares with both joy and sadness the state of being moved. The requirement of existential safety differentiates it from fear, but it is on the same continuum: Whereas aesthetic awe shares thrills with joy, they are experienced as chills when there is a modicum of danger (Konečni, 2005a).

Can music induce aesthetic awe? The pinnacles of composed and performed music are often enough called “sublime,” but, in the present view, music formally becomes sublime and

may induce aesthetic awe only when it is performed in vast architectural spaces with superb acoustics, which are also of extraordinary beauty (Konečni, 2005a). European mediaeval cathedrals are prototypes and they, surely not coincidentally, are the locations with the longest tradition of performance of Western music of the highest caliber.

Being Moved Or Touched

Being moved is considered in the aesthetic trinity theory to be a genuine and profound subjective state, measurable by verbal report (Konečni, 2005a), and often accompanied by thrills. It can be induced by structural aspects, plot, and narrative in a variety of art forms, but the being-moved response to "absolute" music may be the most interesting case. Scherer and Zentner (2001) have suggested that being moved or touched is a good descriptor for an intense response to music and, like Konečni (2005a), have pointed out that there are languages that, unlike English and French, possess a substantive form of this term (in Serbian, for example, there are nouns for both the stimulus and response side: *dirljivost* and *dirnutost* or *ganutost*; in German: *Rührung*). It is reasonable to infer that many of Gabrielsson's (2001) SEM-project respondents experienced such a state, sometimes accompanied by a "lump in the throat" or tears (cf. Scherer et al., 2001-2002).

Thrills Or Chills

This interesting physiological phenomenon has been described as an "archaic response of short duration to aesthetic (and other) stimuli, consisting of pilo-erection on the back of the neck, [and] shivers down the spine that can spread to arms and other parts of the body" (Konečni, 2005a, p. 36). The response can be reported with a high degree of reliability (Konečni, Wanic, & Brown, in press). Since Goldstein's (1980) survey and pharmacological study, there has been a certain amount of laboratory and retrospective work on thrills in response to music (e.g., Blood & Zatorre, 2001; Konečni, Wanic, & Brown, in press; Panksepp, 1995; Rickard, 2004; Sloboda, 1991), as well as to stories, paintings, and architectural objects in combination with music, including instrumental versions of national anthems (Konečni, Wanic, & Brown, in press). However, detailed recent experimental work by Konečni, Wanic, and Brown (in press) demonstrated that although thrills may often serve as the physiological platform for profound aesthetic experience – and frequent as they may be in the lives of many people (Goldstein, 1980; Panksepp, 1995) – they are generally fleeting events and can hardly, in and of themselves, be considered genuine emotional responses.

Conclusions

The Aesthetic Trinity theory suggests that to be moved, sometimes with a lump in the throat, tears, or thrills, is the most interesting, memorable, and profound music-related subjective state. Being moved is rare and rarer still is the listening environment that can help music be sublime and elevate the response state to aesthetic awe.

The theory employs in a new way some concepts of long standing in philosophical aesthetics (such as the sublime), as well as others (being moved, thrills) to which serious attention is only beginning to be addressed by philosophers of music (e.g., Levinson, 2006, on thrills/chills). By dealing, in a man-

ner that leaves questions open to experimentation, with the set of issues that have been inadequately covered by "musical emotions," and bypassing the emotivist-cognitivist unsatisfactory dichotomy, the Aesthetic Trinity theory can provide a bridge between philosophical and empirical aesthetics – specifically regarding emotion in music.

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