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## What is special about musical emotion?

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Received 8 July 2013; accepted 16 July 2013

Available online 18 July 2013

Communicated by L. Perlovsky

Is there something special about the experience of musical emotion? In previous work, Juslin and Västfjäll [8] claimed that music triggers multiple psychological mechanisms which then induce both basic and complex emotions. If we consider the full range of phenomena discussed by Juslin and Västfjäll, it seems clear that a wide range of everyday emotional responses can be triggered by music. For example, brain stem reflexes trigger emotional responses when acoustic characteristics are taken to signal an urgent event. Evaluative conditioning leads to an emotional response when specific music is consistently paired with an emotional experience. Visual imagery or episodic and nostalgic memories are especially interesting, as they likely account for a significant proportion of the emotional responses people experience on a day to day basis [5,7]. But in these examples, music serves merely as an intermediary. Many other kinds of stimuli can trigger such responses equally well, they need not be musical or even auditory (e.g., [11]).

While Juslin's multiple mechanisms connect music with everyday emotions, they are not unique to music. So what, then, makes music special? According to Juslin, the answer lies in the notion of aesthetic responses. Music, as an aesthetic experience, allows for aesthetic emotions, subjective, conscious experiences that Juslin argues are unique to music. While we do not disagree that the BRECVEM mechanisms may exist, and while we do not disagree that aesthetics are relevant to musical experience, we do not believe that the addition of yet another mechanism is likely to clarify our understanding of musical emotion. As it is, this approach is more of a comprehensive description of musical phenomenology than a theory of musical emotion. This approach cries out for a unifying principle. Some of Juslin's mechanisms, expectancy, emotional contagion, and the newest – rhythmic entrainment – are responsive to complex, explicitly musical structures such as tonality and meter, and consideration of such phenomena may lead to a more parsimonious explanation.

We would argue that affective musical experiences are special not merely because music affords aesthetic judgments, but because of the way music engages the brain. Consider Juslin's approach to entrainment. He argues that entrainment is a narrow and isolated mechanism, one ingredient in a musical stew, responsible for a few specific kinds of affective responses. We have argued elsewhere that neurodynamic synchrony with musical stimuli may give rise to a wide variety of musical qualia, including tonal and temporal expectancies [6,9,10]. From a neurodynamic point of view, entrainment of neuronal oscillations is the fundamental dynamic mechanism that gives rise to the unity of conscious awareness [2–4,15]. Moreover, according to a number of recent authors, core affect is a fundamental property of this dynamic core of consciousness [1,12–14]. We suggest that music-synchronous responses couple directly into core neurodynamics, enabling music to directly modulate core affect [6]. Juslin speculates that music resembles

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DOI of original article: <http://dx.doi.org/10.1016/j.plrev.2013.05.008>.

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language, so there is a “strong sense that something ‘highly structured’ and ‘meaningful’ is being said, but our brain cannot make out what it is” (p. 31). We would counter that music speaks to the brain in its own neurodynamic language, leading directly to the kinds of feelings that we associate with emotional experiences. This is what makes musical emotions special.

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