

Moved by Music Alone

Tom Cochrane

Forthcoming in the *British Journal of Aesthetics* 2021

Abstract

In this paper I present an account of musical arousal that takes into account key demands of formalist philosophers such as Peter Kivy and Nick Zangwill. Formalists prioritise our understanding and appreciation of the music itself. As a result, they demand that any feelings we have in response to music must be directed at the music alone, without being distracted by non-musical associations. To accommodate these requirements I appeal to a mechanism of contagion which I synthesize with the expectation-based arousal mechanism proposed by Leonard Meyer. This account connects musical expressivity and arousal in a way that formalists have rejected, but I argue that it provides the best explanation of our observations of listener responses while also focusing on the music itself.

1. The formalist challenge

To what extent do we feel emotions when listening to purely instrumental music? There are numerous psychological experiments indicating that listeners are aroused by a variety of emotional states (see e.g. Juslin and Västfjäll, 2008; Higgins, 2012 for reviews). Yet psychologists have not been able to rule out the possibility that these emotions are directed at non-musical associations that are not properly part of the music itself. As a result, formalist philosophers of music have rejected most apparent emotional responses as inadmissible.

The most prominent formalist philosophers are Peter Kivy and Nick Zangwill. Kivy is best known for defending an ‘enhanced formalist’ position. According to this view, music can be expressive of garden variety emotions—that is emotions like sadness, fear, and anger—but we are never aroused by these emotions, at least when properly engaged with the music alone (e.g. 1980; 1991; 1999; 2006; 2007). Zangwill meanwhile takes the stronger position that instrumental music neither properly arouses emotion, nor is expressive of emotion.

What role, then, does emotion play in what music is, and in our experience of music? Answer: none of any significance. Emotion is a thorough distraction when thinking about the nature of music.

(Zangwill, 2004, p. 42, cf. also Zangwill, 2007; Zangwill, 2014)

At the same time, formalists admit certain affective responses. For instance, Kivy rejected the charge that his experience of music was coldly intellectual: “Anyone who is acquainted with me personally, as a listener or musician, knows that quite the opposite is true. I am an emoter from way back” (1999, p. 2). Instead, formalists claim, we can be moved by the beauty of the music. Potentially, this may be described as a sort of ‘aesthetic emotion’, although its status as a genuine emotional state (as opposed to a non-practically oriented pleasure) is uncertain.

So according to the formalist, some affective states are legitimately aroused by the music itself, where others are not. Yet the idea that legitimate affective states can only be aroused by an appraisal of the beauty (or ugliness) of the music may unnecessarily restrict the range of appropriate felt responses. In particular, it may be possible for music to generate arousal in a more direct manner, unmediated by appraisals, yet still part and parcel of focused appreciation of the music alone.

The approach I take towards musical arousal takes on some key formalist claims. Most importantly, I will agree that being moved by music alone does not arouse garden variety emotions. Nevertheless, my account is unlikely to fully satisfy the formalists. To explain how we are moved by music, I think we must appeal to the contagious mirroring of expressive qualities. This account will conflict with Zangwill’s denial that music genuinely resembles emotional states. It will also conflict with Kivy’s unequivocal statement that “we will discover how music moves only when, first, we disassociate that question from the question of how music can be expressive of the garden-variety emotions” (Kivy, 1991, p. 157).

Contagion models are already very popular (e.g. Davies, 1994, pp. 279-307; Carroll, 2003; Bharucha, Curtis, and Paroo, 2006; Juslin and Västfjäll, 2008; Young, 2014, pp. 61-63). Thus the basic mechanism of arousal that I endorse is not especially original. However, my model will innovatively combine the contagion mechanism with Leonard Meyer’s (1956) expectation-based arousal mechanism. This then has a number of further attractions: First, it will allow us to incorporate some insights from contemporary emotion theory. Second, it will

allow us to make sense of the variety of arousal effects that we observe. Third, it will allow that arousal can be part of the proper appreciation of aesthetic qualities, because it can be linked with the understanding of musical form.

The paper will proceed as follows: In the following section I will outline some theory-neutral desiderata for making sense of our affective responses to music. I will then outline the resemblance account of musical expressivity (section 3) which, by means of appeals to contemporary emotion theory, I synthesise with Meyer's expectation mechanism (section 4). My account of musical arousal will then follow (section 5) concluding with a comparison to some competitor theories (section 6).

2. Desiderata

When trying to explain how music can move us there are three crucial conditions that we must satisfy. The first is the principle that formalists always insist upon: That whatever we feel, it must be directed at, or be about the music. It is this principle that leads the formalist to deny that musical arousal can legitimately involve the recall of conventional or personal associations, or the visualisation of accompanying scenarios. Of course, the average listening experience is often filled with such things, but when it is we are distracted from the music itself. This is not a point unique to contemporary philosophers like Kivy or Zangwill. Hanslick is well-known for defending this point (1854/1986), and it can be traced even further back to Schopenhauer (1819/1907).

The second condition for an account of musical arousal is to acknowledge that while legitimate feelings in response to music may broadly be said to be directed towards the aesthetic qualities of the music, they clearly come in different types. As Kivy puts it,

The feeling of musical excitement one gets in contemplating the beautiful melancholy of this music of Beethoven's is very different from the feeling of musical excitement one gets in contemplating the beautiful way in which Bach sneaks in the final return of the subject of the A-flat Fugue in the *Well-Tempered Clavier*, Book II, into the tenor voice, so that its fall to the major third makes the final cadence.

(Kivy, 1999, p. 9)

Kivy's own answer to this requirement is to lean more heavily on the intentional content of the mental state (e.g. 1999, p. 9-10). He claims that the kind of feeling is to be characterised by the fact that it is directed at music with its specific expressive content. Appealing to the intentional object for differentiation is a strategy we also find in Martha Nussbaum's cognitivist theory of emotions (2004). However, this approach is less likely to be endorsed by non-cognitivists such as Jesse Prinz (2004) or Julien Deonna and Fabrice Teroni (2012), for whom the distinct qualities of emotions are bound up more closely with bodily feelings.

This leads us to a related third condition for an account of musical arousal, which is to explain why people physiologically and behaviourally respond in a variety of ways when listening to music. Kivy and Zangwill do not give this point sufficient due in their writings but it is clear that we witness people smiling, frowning, sighing, shedding tears, jumping up and down, gripping the arms of their seats, as the case may be. Another striking response to music is the feeling of chills or shivers down the spine (e.g. Blood and Zatorre, 2001). Note that this response, while distinctive, is not unique to music. One may well experience chills if, for instance, one is sitting in a large audience and one's name is unexpectedly called out (e.g. perhaps to receive a prize, or a scolding). The standard biological explanation for chills appeals to the piloerection response, regarded as a hangover of a threat response in hairy animals that allows them to look larger.

These responses look suspiciously like the responses that are part of, or caused by different garden-variety emotions. As such, they threaten the traditional formalist position. Yet it has been suggested to me that a formalist may exclude listeners' observable responses on the grounds that they would violate a Kantian account of aesthetic appreciation.¹ A commitment to Kant cannot be a theory-neutral desideratum on accounts of musical arousal. Nevertheless, I do not believe that admitting physiological or behavioural responses automatically violates it. First, if the worry is that aesthetic responses must show subjective universality, and listeners' responses are too varying, then we can restrict the range of musical responses only to normal responses that don't show any sensitivity to individual factors. This seems to leave a large variety of affective responses to music intact. Second, there is nothing about the nature of a disinterested pleasure that seems to rule out its accompaniment by a range of physiological and behavioural responses (see the end of section 5 for more on this latter point).

¹ Thanks to an anonymous referee for pressing me on this point.

Meanwhile, the more typical response from Kivy and Zangwill is to doubt that the listener is properly concentrating on the music alone. For what it's worth, I can frankly attest to displaying all of the above responses while engaging in no personal associations or imagery whatsoever (consciously at least). Moreover, I don't think it is giving the game away to admit that different physiological and behavioural responses can be triggered when we are moved by music. A tear in the eye does not automatically entail garden-variety sadness. For instance, the psychologist Vladimir Konečni (2005) endorses Kivy's position while treating the different responses as indicators of distinct aesthetic emotions.

Let us put it this way: a theory of musical arousal that can accommodate our obvious physiological responses while also satisfying the other two conditions is a more robust theory than one that must reject these responses as inadmissible. To dismiss normal affective responses to music as secretly or unconsciously directed at non-musical factors risks seeming ad hoc.

Overall, these conditions: that the feeling is directed at the music (and not distractors), that there are different subjective feelings, and different physiological responses, should be agreed on all sides as foundational to this debate.

3. Expressive qualities

I am going to argue that a contagion-like mechanism is our best explanation for musical arousal. On this account, musical arousal closely aligns with the musical expressivity of garden-variety emotions. Accordingly, a large chunk of this paper must be devoted to musical expressivity. While drawing upon existing accounts in this section, I will offer in the following section a revised theory that incorporates some contemporary views about emotion phenomenology. Following this, a new contagion-based model of musical arousal can be developed fairly straightforwardly.

In his first book *The Corded Shell* (1980), Kivy proposed a resemblance theory of musical expressivity. Later in his career, Kivy backed away from this particular account. He came to regard pure instrumental music as “a ‘black box’, as regards how [expressive] properties get there” (2006, p. 301). However, as James Young observes in his exhaustive critical review of Kivy's theory, Kivy never provided arguments against the resemblance theory, and he did not

replace the theory with another (Young, 2014, p. 13). It still stands as the most informative theory of the actual techniques by which music is expressive.

The basic idea of resemblance theory is that musical features such as melodic contour, instrumental attacks, and rhythmic patterns resemble features of emotional states. Kivy initially emphasizes the resemblance between musical features and the contours of emotional vocalisations. A parallel resemblance theory developed independently by Stephen Davies (1980) emphasises cross-modal resemblances to bodily posture and behaviour.

Consider, for example, the solo violin theme near the beginning of Rimsky-Korsakov's *Scheherazade* suite. The way the line rises and falls bears some stylistic resemblance to the rising and falling intonation of a person's voice when undergoing emotion, and also to sighing. At the same time, Davies would argue that resemblances to wider bodily movement patterns can capture more of the detail of these melodic figures, as when a human in the grip of an emotion rises or swoons or curls her fingers (2003, p. 176). Yet it is not necessary to demand either one sort of resemblance or the other. Bodily and vocal contours do not exclude each other and the listener does not have to determine what exactly the contours resemble to get an intuitive sense of the way an emotion appears.

Indeed, we should add to the range of emotional resemblances. Some defenders of resemblance theory emphasise resemblances with the inner phenomenology of emotions. For instance, in previous work I have appealed to resemblances between the sensory roughness of timbre and harmony, and the sensations of tension experienced in emotion (Cochrane, 2010, pp. 201-202). Jenefer Robinson (2005, pp. 311-312) and Malcolm Budd (1995, p. 207) also refer to resemblances between the dynamics of musical change and the dynamics of thought processes stimulated during emotional episodes.

Thus, sticking with our example of *Scheherazade*, the exquisite timbre of the solo violin resembles an inner feeling of almost languorous smoothness. The phrase structure of the melody can also capture certain thought dynamics, where some phrases have a tumbling forwards quality whether others have a more settled feel.

Overall I think we should combine inner feeling resemblances with external appearance resemblances. If we are appealing to cross-modal resemblances anyway, and moreover

resemblances to emotional features that are not actually directly in front the listener while they listen to the music, the restriction to outward appearances seems ad hoc. We connect the sound of movement as much with the feeling of movement as its visual appearance. Indeed, philosophers working in the phenomenological tradition have long emphasised that vocal and behavioural expressions of emotion equally give us an impression of the subjective phenomenology of emotional experience (for a review see Krueger, 2014). So even if we are discerning resemblances to the outward appearances of emotions, these are quickly linked to inner feelings. All roads lead to Rome.

The crucial supporting point, widely acknowledged by all those who believe in the expressive powers of music, is that the music itself seems to possess the emotional quality (Kivy declares a consensus on this point 1999, p. 1). Moreover, it is not simply that music vaguely reminds us of emotions. Musical works convey the most vivid sense of what emotions are like as they unfold over time, with different works, and even different performances of those works conveying different shades and subtle nuances of emotion. Accordingly, it is plausible that music makes us think of emotions in virtue of getting us to think of the inner phenomenology of emotional experience.

In fact, the expressive power of instrumental music is so vivid that it functions reciprocally as a constraint on theories of emotional experience. Pure instrumental music, lacking the presentation of situational propositions, can powerfully express what an emotion is like to listeners who honestly aver to not thinking of such propositions. This entails that a major part of the phenomenology of emotion must be constituted by features of our mental lives that instrumental music can plausibly capture, i.e. non-propositional features. This is still fairly broad since it includes all those features mentioned above: vocal and bodily contours, tactile feelings, and thought dynamics. Nevertheless, it is important succour to those defending feeling-based theories of emotion.

4. Bodily feelings

Resemblances to the subjective feelings of emotion are a good start, but we can go a lot further. By drawing on some insights from contemporary theories of emotional experience, we can incorporate another major approach into our theories of musical expressivity: Leonard Meyer's expectation-based theory of musical understanding (1956). If this works, it's quite an exciting way to synthesise two of the most influential 20th century theories of musical experience.

In recent years, philosophers of emotion have paid closer attention to the details of bodily experience. These analyses tend to be tied to non-cognitive theories of emotions, however it is possible to draw on them without buying into the non-cognitive theory. The key insight is that patterns of bodily responses, without association with propositionally construed situations, can convey intentional content.

An initial step is Jesse Prinz's perceptual theory of emotions (2004), which proposed that bodily feelings represent the formal objects of emotional states. For instance, the pattern of bodily feelings characteristic of fear represents the dangerousness of the situation. Later philosophers, while rejecting Prinz's comparison with perception, held onto the claim that bodily feelings bear content that goes beyond the simple interoception of the condition of the body. In particular, while Prinz tends to treat feeling patterns as merely symbolic, later philosophers have analysed how the precise character of the feelings contributes to its meaningful content.

Thus Julien Deonna and Fabrice Teroni propose that patterns of bodily feeling reflect the action tendencies that emotions automatically trigger for the sake of managing the situation (even if we don't end up acting them out). It is in virtue of recognising the characteristics of the action tendencies that we experience ourselves as oriented towards the world in a certain way:

We feel a bodily attitude towards a given object, which amounts to saying that we feel the way our body is geared towards the object we are facing. The body is felt in the form of a gestalt of bodily sensations, which consists in being ready to respond in a given way to the object.

(Deonna and Teroni, 2012, p. 87)

Note that the bodily responses (e.g. heart thumping, muscles tension) in themselves are not representing the action tendency. The felt content requires the subject to form a gestalt; to *understand* how they are being pulled to respond. The subject grasps the pattern of responses as indicating how they are apt to behave.

Another philosopher who develops this theme is Rebekka Hufendiek (2016) who regards the feelings of the body as a sense of action affordances. Here for instance she analyses the characteristic feelings of bodily tension in anger:

Anger represents restrictions or, rather, restrictions-to-be-fought. What the affordance concept adds to this view is that the content of an actual anger representation is constituted by the arousal and the sensorimotor reactions that prepare the organism for a fight.

(Hufendiek, 2016, p. 163)

In my own work on emotions I have similarly followed this theme. I argue that, while cognitive appraisals are required to trigger a bodily response, the response is then felt, adding an extra layer of intentional content to the overall emotional experience. Like Hufendiek and Deonna and Teroni, I analyse these patterns of bodily feelings as feelings of the person being actively disposed towards the world in a certain kind of way. I also develop the phenomenology in relational terms, suggesting that the feeling of one's bodily disposition is simultaneously a feeling of 'emotional space':

One may feel that something heavy is weighing one down or that one is floating in thin air. In this way, the sense of emotional space is one in which certain actions seem encouraged. For instance, when we feel joy, the emotional space seems bright, boundless, even springy. We may then manifest this sense of emotional space by actually running, jumping or dancing around, or we may more generally interact with the actual environment in an energetic or springy manner.

(Cochrane, 2018. p. 102)

In terms of making sense of musical expressivity, the main point to draw from these discussions is that the experience of bodily responses is sufficient to convey distinct emotional meaning. Therefore, if we discern resemblances to bodily responses when listening to music, this suffices for an experience of music as conveying distinct emotional meaning. We do not need to import additional thoughts about propositionally construed situations (i.e. images or text).

Indeed, I claim that the formal qualities of music literally bear some of the same qualities as emotional bodily feelings. For example, a pattern of bodily activity in which one feels one's

heart pattering, combined with a softness in the limbs and a slow heaving of the chest may convey a sense of melancholy yearning. The violin solo from *Scheherazade* equally conveys the melancholy sense of yearning by means of its rising sequences combined with its smooth timbre and the way its phrases tend to fall at the end. There are high level properties that both patterns share. For instance, they both display rising activity, and mild conflict between the rising activity and the falling motion.

Formalists such as Zangwill may well object here that the music isn't literally yearning here the way that the feelings are yearning. But note that bodily feelings aren't literally yearning either. In themselves, they are patterns of pressure and movement sensation, and it is because the individual understands their connection with behavioural activity that he or she takes them to represent yearning content. Equally then, musical works don't need to be literally yearning to convey emotional meaning. They only have to share properties with the felt representation of yearning to legitimize our making a systematic association with behavioural activity when we hear them.²

In addition to underlining the ambitions of resemblance theory, contemporary theories of emotion also help us to recognize that an emotional bodily feeling is not merely a static representation of how things currently stand. It is a sense of how things are changing in time; a response trajectory. As such, if the music listener discerns emotional bodily feelings in the music, this can equally be analysed as discerning a response trajectory.

Making this connection between bodily feelings and action dispositions is what allows us to incorporate Leonard Meyer's expectation-based theory of musical understanding into our model. Meyer argued that based upon our prior experiences of music, at every moment of musical listening we anticipate how the music is likely to develop. These expectations can be satisfied, subverted, or delayed (as when a cadence is drawn out). By forming expectations that are satisfied or not, we feel patterns of tension and release. These patterns alert us to the formal qualities of the music. Thus "while the trained musician consciously waits for the expected

² If this was a paper about musical expressivity I would have to offer a lot more. For instance, I haven't discussed the mechanics of cross-modal association or given much detail about how different musical variables resemble emotional features. Since this essay is focused on musical arousal however, I am content to refer the reader to other authors who discuss these factors in considerable detail. See Davies (1994); Robinson (2005); Nussbaum (2007); Cochrane (2010); Higgins (2012); Young (2014).

resolution of a dominant seventh chord the untrained, but practiced, listener feels the delay as affect” (1956, p. 40).

Actually Meyer’s points about expectations are also applicable to the experience of bodily feelings in regular emotional states. The phenomenology of emotional experience involves not just the sense of response potentials. We also track how potentials get played out; whether they are satisfied, frustrated, or suddenly redirected. This adds a further dimension to emotional experience, whereby we grasp how well our responses are managing to cope with the demands placed upon them. For instance, to feel one’s bodily responses suddenly lurch is itself a representation of discombobulation.

Putting these points together, my claim is that discerning a certain emotional quality in the music involves discerning emotional bodily feelings (on the basis of various resemblances). Discerning emotional bodily feelings in the music is a matter of the listener modelling an action tendency and this action tendency model is ultimately an expectation about how the target’s responses are liable to develop. These expectations can then be confirmed or denied, depending on the progress of the music. Thus to discern from a piece of music a sense of what an emotion is like can be analysed as forming expectations about the development of certain feelings heard in the music. These expectations about feelings are part of what it is to understand the progression of the music, as in Meyer’s theory.

Note that Meyer links musical understanding to the listener’s *arousal*. He says the expectation is felt by some listeners as affect. However, I make use of Meyer’s mechanic to explain expressivity first, and then apply the account to arousal in the following section. At this stage, we need only construe the listener’s expectations as discernments of tension in the music rather than felt in the body.

This model is comparable to the way we model another person’s actions tendencies when observing them undergo an emotional response. For instance, when we see someone shout and clench their fists in rage, we are apt to get a vivid impression of how they feel (even alongside our own feelings) and this impression includes the expectation of aggressive behaviour (e.g. that they might strike out). As we continue to track their expressive behaviour, our anticipations can be confirmed or denied, which updates our grasp of their emotional feelings.

At the same time, making a strong connection between bodily feelings and expectations allows us to remedy a defect in Meyer's theory. While most have agreed that Meyer identified an important feature of listening experience, it is hard to turn it in a general theory of musical expressivity because patterns of tension and release alone are insufficient to capture the range of emotional variations (cf. Kivy, 1991. p. 156). In particular, patterns of tension and release are insufficient to capture the valent (i.e. positive or negative) aspects of emotions. Both excitement and terror involve a similar sense of tension, and both misery and contentment involve a similar sense of release. So by combining the expectation mechanic with the immediate resemblance to bodily feelings (e.g. connecting the relative sensory roughness of the minor key with discomfort, or loud and fast dynamics with power), the full range of emotional qualities can be captured.

Overall this synthesis has two major attractions. First, by linking musical patterns to response trajectories we can flesh out how music manages to express what emotions are like, and how they convey meaningful content. That is, to hear music as sad is not just to discern connections with slow and soft bodily movement, but to hear a response disposition or trajectory indicative of despondence and vulnerability. Thus we have a more sophisticated theory of musical expressivity.

The second attraction is that we can incorporate the tracking of expressive qualities more directly into the process of understanding musical form. That is, forming expectations about how the musical form will develop involves forming expectations based on models of action tendencies. Linking expressive qualities with the understanding and appreciation of musical form is the fundamental point of Kivy's enhanced formalism. We need not demand that *all* musical understanding demands the translation of musical features into emotional features. However, given the generality of the processes described, and the wide range of musical features that the resemblance theory links with emotional features, this is a widely applicable theory.

So I believe the formalist should embrace the detection of expressive qualities in music. However we should address two possible formalist worries here. First, note that our expectations of action tendencies are most likely acquired via prior experiences of emotion and their behavioural manifestations. Thus background knowledge that goes beyond the musical work itself is involved in experiencing music. This is potentially in tension with formalist

demands to pay attention only to the music itself. However, the claim is not that we explicitly remember prior emotional experiences when listening to music. We have simply acquired prototypical models of how emotions work which we intuitively deploy when understanding the emotional qualities of the music. The idea that our experience of music is informed by our background knowledge is compatible with formalist claims.³

A second related worry is that detecting emotional content in music implies that music is merely the medium and our attention is directed at something beyond the music itself. However, we can treat the expressive qualities of music as analogous to pictorial representation (cf. Young, 2014). That is, it is part of the work itself that it bears this content (typically intended as such by the composer). Moreover, any impression of emotional content is intertwined with attention towards the musical surface. Music possesses the kind of two-foldness that Richard Wollheim (1998) identified in pictorial representation.

5. Musical Arousal

Where are we so far? I have defended the view that resemblances play a role in our sensitivity to the expressive properties of music, and I have argued for the resemblance to bodily feelings in particular.⁴ I have then argued that tracking such resemblances involves generating action expectations that fill out the sense of emotional meaning. I also want to emphasise that you don't need to adopt a non-cognitivist model of emotions to accept the model I have proposed. In particular, we need not reject the cognitivist view of emotion which states that the appraisal of an object comes first, followed by the arousal of bodily responses. We need only add that patterns of bodily feeling are also capable of representing emotional meaning such that music alone can convey it.

Yet once we accept that patterns of music can capture meaning in the same way of patterns of bodily feeling, it is only short step to a view of musical arousal that contradicts Kivy and Zangwill. Processing resemblances to bodily feelings very plausibly involves recreating or simulating those bodily feelings. Simulating these feelings can in turn lead to more full-blooded arousal of these feelings. Note that the claim is that this *can* happen. I am not claiming that

³ Thanks to an anonymous referee for pressing me on this point.

⁴ I should note here that despite the necessary causal role played by resemblances, I make no claim that we reflectively experience ourselves making resemblance comparisons while hearing expressive properties in music. The experiential upshot most compatible with the vividness of music is that we simply hear emotional feelings *in* the musical form.

simulation is the only possible way to detect resemblances to bodily feelings, or to be aroused on the basis of musical listening. My argument will be that this mechanism can better reconcile our observations about musical arousal than alternate accounts.

First we have to show that detecting expressive qualities plausibly involves recreation. This view has been previously defended by several authors (Bharucha, Curtis, and Paroo, 2006; Overy and Molnar-Szakacs, 2009; Cochrane, 2010). These authors appeal to various neural and physiological studies, but we don't need sophisticated psychological experiments to know that when you pretend to have an emotion by acting out its characteristic behaviours (e.g. tensing your muscles, drooping your body) you can get a sense of what that emotion feels like. The difference that simulation theory adds is that one can *imagine* taking on the relevant bodily characteristics (guided by the music) and still get an attenuated sense of those feelings.

One consideration in favour of simulation theory is evidence that when people become incapable of emotional arousal in a certain respect, they simultaneously lose the capacity to detect it in others (reviewed by Cochrane, 2010; Young, 2014, p. 60). Another consideration is phenomenological: to get a vivid sense of what an emotion is like—how it feels—plausibly involves being acquainted with that feeling at that particular moment. I think it's also worth mentioning that if we build in Meyer's theory of expectations into our account of musical expressivity, forming intuitive expectations about the development of bodily feelings likely also relies on the immediate sense of those bodily feelings.

If a simulation is present, contagion can follow. Simulation theory generally distinguishes between 'offline' simulations of emotion and 'online' arousal (e.g. Goldman, 2006; Currie and Ravenscroft, 2002). The transition amounts to little more than endorsement of the offline simulation. But how does one non-metaphorically 'endorse' a simulated bodily feeling? The most straightforward answer is that one simply relaxes into the full-blooded arousal. That is, instead of holding oneself still, inhibiting the bodily tendencies that are being modelled in the motor cortex, one permits the bodily tendencies to manifest. One literally allows oneself to move along with the motor representation. Associative links are likely to be involved as well. We cannot usually deliberately activate responses like hormonal release, but such reactions could be associatively triggered if the body is already in a state close to the relevant emotional bodily feeling.

Now an important point to make here is that the arousal of a bodily feeling is not yet an intentionally-directed emotional state. This is a point that Stephen Davies also emphasises in his contagion model, “the listener does not believe of sad music what would make it an appropriate emotional object of the sad response she experiences, namely, that there is something about the music that is unfortunate or regrettable” (2013, p. 172). It might *become* an emotion if say, the listener starts thinking about some sad-meriting situation. But if so, that listener falls foul of the formalist’s primary condition that the feeling must be properly directed at the music, and not extraneous distractions.

Yet here is a vital point: there is really no need for the listener to build in extra associations to propositional contents. We already have everything we need to reconcile our observations about musical arousal. Contagious arousal on this model is really nothing more than an uninhibited way of engaging with the music itself. One’s feelings are entirely guided by one’s processing of resemblances between musical features and bodily feelings, combined with expectations about how the music is progressing (in line with expectations gained via the prior experience of emotional bodily feelings). The range of feelings this can stimulate is sufficient to explain the various subjective feelings of being moved by music.

Note that my resemblance-expectation model can also accommodate the various physiological responses we observe. Replicating the bodily feeling of sadness can stimulate tears. Resemblance based expectations can also result in chills. Chills are most commonly aroused in response to music when the music shifts up a gear in intensity (Bicknell, 2009, Ch.3). Surprise is not necessary, because chills can be reliably induced with pieces that listeners know very well (Grewe, 2009). On the contrary, the better explanation for chills is that the body is physiologically accommodating an anticipated requirement for increased arousal intensity. Thus our enhanced resemblance-expectation model is handy for allowing that the resemblance to increasing bodily tension generates an expectation that intense action is forthcoming, and our bodies accordingly prepare for it.

If one holds a fully somatic theory of emotions, then one may regard the stimulation of a pattern of bodily responses directed at the music as sufficient for an emotional state (e.g. Hufendiek, 2016; Deonna and Teroni, 2012). I’m inclined to treat this more as a problem for those theories than a reason to say that musical arousal is a genuine emotional state. At best, it would be an irrational or illusory emotional state. This is because the music does not merit an emotion of

anger or sadness in the sense that some goal of the individual is being frustrated or something they care about lost.

Other philosophers have claimed that music arouses moods, again in deference to the idea that instrumental music does not convey propositional contents (Roberts, 2003, pp. 120-132; Carroll, 2003; Sizer, 2007). Given how (aptly) nebulous the concept of mood is, it may not commit us to very much to admit that music arouses moods. However, contemporary theories of moods often argue that they are about everything, or how one's life is going in general (for an extensive review and defense see Mitchell, 2019). If that's right, then to have a mood would again be discounted by formalists as another distracted state.

The simpler theory is just that music arouses bodily feelings which, though they bear systematic connections with the bodily feelings we find in the garden variety emotional states, are not actually emotions. Instead, they are arousal states in which we appreciate the expressive contours of the music. Expressive qualities are aesthetic qualities. When done well, expressive qualities bear the traditional aesthetic virtues of unity, complexity and intensity (e.g. Beardsley, 1958). They also display the exquisite sensitivity to particularities that are the hallmark of aesthetic properties (Sibley, 1959). Our musical arousal helps us to track these features.

In other words, I believe the best thing to say about the musical arousal I have described here is that it forms the constitutive base of different kinds of appreciative states. That is, these states are more like pleasures than emotions. Bodily arousal can serve as the basis for enjoying the beauty of the music (the formal perfection of the feelings expressed), or the sublimity of the music (e.g. the powerful depiction of destructive feelings), its tragedy (the sympathetic depiction of what it's like to suffer), its drama (the exciting clash or rush of different feelings), or even its comedy (e.g. an incongruous reversal of feelings).⁵

Note also that my view may be embraced by formalists if they are motivated to deny garden variety emotions due to a background commitment to the Kantian account of aesthetic appreciation. If emotional arousal requires a belief in the reality of its target, emotions towards

⁵ Jerrold Levinson develops a comparable position on musical chills. Although his account of how chills are triggered differs from mine, he claims that they "are usually the first sign that one has registered something of depth or significance in the music... [They] serve as focusers of attention, as direct aids to appreciation, drawing attention to expressive aspects of musical structure that might otherwise escape notice" (2006, p. 234).

music may conflict with disinterested pleasure, which is supposed to be pleasure independent of an interest in the existence of its object.⁶ Yet physiological or behavioural responses to music, even if directed at expressive contents, do not entail that one's appreciation depend on one believing that those expressive contents are 'real' in the sense of there being a person actually undergoing that emotion.

6. Best Explanations

Kivy never showed much sympathy for contagion models of musical arousal. Yet my version takes on what I believe to be the core commitments of enhanced formalism, including its central aim of explaining how we appreciate aesthetic qualities. Furthermore, I believe that there is no alternate theory of musical arousal that can better accommodate the various conditions I outlined in section 2.

Consider Kivy's claim that feeling moved by the beauty of the music in all its varieties can be accommodated purely by appeal to the features of the music that we hear (1999, p. 9-10). There's a clear problem with this. As it stands there is no distinction between perceiving the qualities of the music and feeling moved by the qualities of the music. It's like saying that observing someone having an emotion is the same as having the emotion yourself, or seeing someone enjoying themselves is the same as enjoying yourself.

Note that the musical case differs from the pure cognitive account of emotions, where what distinguishes one emotion from another is the specific situational appraisal. As Martha Nussbaum (2004) says, that appraisal has to be one of the *personal importance* of the situation (e.g. it's her mother who has died, not yours!). The musical case lacks this sort of content. One of the most important features of aesthetic values is that they do not depend for their existence on their special relevance to the individual who detects them. That is, they are equally accessible to all sorts of people for the same reasons and to the same degree of intensity.

So how about a more ordinary appraisal theory whereby we simply evaluate how well the music satisfies our concerns? In so far as I strongly desire to hear great music, a particular piece can stimulate all sorts of emotions by satisfying, disappointing or frustrating this desire. But note

⁶ Though note that not all theories of emotion have this requirement (as discussions of the paradox of fiction attest) e.g. Robinson (2005); Todd (2012).

that the negative side of such emotions isn't the target we are aiming at when we say we feel moved by the music. Feeling moved is by and large a positive appraisal, though sometimes bittersweet. To shed a tear when feeling moved is no indicator that the musicians have cruelly disappointed our expectations! Yet this is the only way we would expect tears under an ordinary appraisal model.

Furthermore, appraisal-based emotions will not tend to track the precise qualities of the music. You can of course feel delighted by a particular musical phrase, but emotions about pieces of music tend towards appraisals of the piece as a whole. The question that every emotion asks is 'what is the relevance of *this situation* to my interests?' I can change my mind about how I feel about something, but what the emotion seeks is a stable evaluation of an object, which then triggers a regulative response (i.e. to avoid or approach). As such, while appraisal-based emotions may accompany and amplify our musical arousal, they do not line up well with the physiological shifts that we observe as the music unfolds. They are also not intrinsic to the process of understanding the formal qualities of the work. They are rather an end product of having understood the work.

What other theory of musical arousal is available? There's Meyer's original expectation-based theory. This has been developed in a very sophisticated way by David Huron (2006), who associates different emotional outcomes with different ways that expectations can develop. The expectation view is particularly good at accommodating chills, which is why I made use of it. However, it has trouble accommodating other sorts of feelings, such as being moved to tears, or the intense sense of power that sublime music stimulates. For such effects, one needs the resources of the contagion theory.

In addition, the mechanic of expectation-satisfaction/violation has always had trouble explaining how repeated listens to the same piece can arouse the same feelings. When a piece becomes familiar, it cannot subvert our expectations in the way it did upon initial acquaintance. Or to put it another way: how is that two pieces with which we are extremely familiar can nevertheless arouse very different feelings? In both cases, our expectations equally line up with what we hear. Again, this is the reason why we first need the simulation of the bodily feeling (dictated by resemblances). Once we have this, we can then modulate the feeling according to our sense of its possible trajectory and the following outcome.

Overall, I conclude that the resemblance-expectation model of musical arousal is the best explanation for the variations in feeling that we experience and observe while listening to music. Most importantly, it explains how our feelings are directed at the music itself, in a manner that plays an important role in understanding that piece of music. I have denied that this feeling is an emotional state. I do not even think it should be called an aesthetic emotion, at risk of confusing the essentially self-oriented nature of emotional appraisals with the objective or sharable nature of aesthetic evaluations. I do not deny that the kind of arousal I have described can easily tip over into a genuine emotional state, should the listener take wider matters into consideration. This is potentially the source of a number of psychological and social benefits. Yet the value of music does not rely on these instrumental benefits. The pleasures of music alone are sufficient.

References

- Beardsley, M. (1958). *Aesthetics: Problems in the Philosophy of Criticism*. Indianapolis, IN: Hackett Publishing Company.
- Bharucha, J. J., Curtis, M., and Paroo, K. (2006). 'Varieties of musical experience'. *Cognition*, 100 (1), pp. 131-172.
- Bicknell, J. (2009). *Why music moves us*. London: Palgrave-Macmillan.
- Blood, A. J. and Zatorre, R. J. (2001). 'Intensely pleasurable responses to music correlate with activity in brain regions implicated in reward and emotion'. *Proceedings of the National Academy of Sciences*, 98, pp. 11818-11823.
- Budd, M. (1995). *Values of art: Pictures, poetry and music*. London: Penguin.
- Carroll, N. (2003). 'Art and mood: Preliminary notes and conjectures'. *The Monist*, 86 (4), pp. 521-555.
- Cochrane, T. (2018). *The Emotional Mind: A control theory of affective states*. Cambridge: Cambridge University Press.
- Cochrane, T. (2010). 'A Simulation Theory of Musical Expressivity'. *Australasian Journal of Philosophy*, 88 (2), pp. 91-207.
- Currie, G. and Ravenscroft, I. (2002). *Recreative Minds*. Oxford: Clarendon Press.
- Davies, S. (2013). 'Music-to-listener emotional contagion', in Cochrane, T., Scherer, K. and Fantini, B. (eds), *The Emotional Power of Music: Multidisciplinary perspectives on musical arousal, expression, and social control*. Oxford: OUP, pp. 169-176.
- Davies, S. (2003). 'Philosophical perspectives on music's expressiveness', in his *Themes in the Philosophy of Music* Oxford: OUP, 2003, pp. 169-191.

- Davies, S. (1994). *Musical meaning and expression*. London: Cornell University Press.
- Davies, S. (1980). 'The expression of emotion in music'. *Mind*, 89 (353), pp. 67-86.
- Deonna, J. A. and Teroni, F. (2012). *The Emotions: A philosophical introduction*. Oxford: Routledge.
- Goldman, A. I. (2006). *Simulating Minds: The Philosophy, Psychology, and Neuroscience of Mindreading*. Oxford: OUP.
- Grewe, O., Kopiez, R. and Altenmüller, E. (2009). 'The chill parameter: Goose bumps and shivers as promising measures in emotion research'. *Music Perception: An Interdisciplinary Journal*, 27 (1), pp. 61-74.
- Hanslick, E. (1854/1986). *On the Musically Beautiful*. Translated by G. Payzant, Indianapolis, IN: Hackett Publishing Company.
- Higgins, K. M. (2012). *The Music Between Us: Is Music a Universal Language?* Chicago: University of Chicago Press.
- Hufendiek, R. (2016). *Embodied Emotions: A Naturalist Approach to a Normative Phenomenon*. New York: Routledge.
- Huron, D. B. (2006). *Sweet Anticipation: Music and the psychology of expectation*. Cambridge, MA: MIT press.
- Juslin, P. N. and Västfjäll, D. (2008). 'Emotional responses to music: The need to consider underlying mechanisms'. *Behavioral and Brain Sciences*, 31 (5), pp. 559-575.
- Kivy, P. (2007). 'Moodology: A Response to Laura Sizer'. *The Journal of Aesthetics and Art Criticism*, 65 (3), pp. 312-318.
- Kivy, P. (2006). 'Critical Study: Deeper than Emotion'. *British Journal of Aesthetics*, 46 (3), pp. 287-311.
- Kivy, P. (1999). 'Feeling the musical emotions'. *British Journal of Aesthetics*, 39 (1), pp. 1-13.
- Kivy, P. (1991). *Music alone: Philosophical reflections on the purely musical experience*. London: Cornell University Press.
- Kivy, P. (1980). *The corded shell: Reflections on musical expression*. Princeton, NJ: Princeton University Press.
- Konečni, V. J. (2005). 'The aesthetic trinity: Awe, being moved, thrills'. *Bulletin of Psychology and the Arts*, 5 (2), pp. 27-44.
- Krueger, J. (2014). 'Dewey's rejection of the emotion/expression distinction', in Solymosi, T. and Shook J. R. (eds), *Neuroscience, Neurophilosophy and Pragmatism*, London: Palgrave Macmillan, pp. 140-161.

- Levinson, J. (2006). 'Musical Chills', in his *Contemplating Art: Essays in Aesthetics*. Oxford: OUP, pp. 220-236.
- Meyer, L. B. (1956). *Emotion and meaning in music*. Chicago: University of Chicago Press.
- Mitchell, J. (2019). 'The intentionality and intelligibility of moods'. *European Journal of Philosophy*, 27(1), pp. 118-135.
- Nussbaum, C. (2007). *The Musical Representation: Meaning, Ontology, and Emotion*. Cambridge, MA: MIT Press.
- Nussbaum, M. C. (2004). 'Emotions as Judgements of Value and Importance', in Solomon, R. C. (ed.) *Thinking about feeling: Contemporary philosophers on emotions*. Oxford: OUP, pp. 183-199.
- Overy, K. and Molnar-Szakacs, I. (2009). 'Being together in time: Musical experience and the mirror neuron system'. *Music Perception: An Interdisciplinary Journal*, 26 (5), pp. 489-504.
- Prinz, J. (2004). *Gut Reactions: A Perceptual Theory of Emotion*. Oxford: OUP.
- Roberts, R. (2003). *Emotions: An essay in aid of moral psychology*. Cambridge: Cambridge University Press.
- Robinson, J. (2005). *Deeper than reason: Emotion and its role in literature, music, and art*. Oxford: OUP.
- Schopenhauer, A. (1819/1907). *The World as Will and Idea*. 6th edn. Translated by R. B. Haldane and J. Kemp, London: Kegan Paul.
- Sibley, F. (1959). 'Aesthetic concepts'. *The Philosophical Review*, 68 (4), pp. 421-450.
- Sizer, L. (2007). 'Moods in the Music and the Man: A Response to Kivy and Carroll'. *The Journal of Aesthetics and Art Criticism*, 65 (3), pp. 307-312.
- Todd, C. (2012). 'Attending Emotionally to Fiction'. *The Journal of Value Inquiry* 46 (4), pp. 449-465.
- Wollheim, R. (1998). 'On pictorial representation'. *The Journal of Aesthetics and Art Criticism*, 56 (3), pp. 217-226.
- Young, J. O. (2014). *Critique of pure music*. Oxford: OUP.
- Zangwill, N. (2004). 'Against Emotion: Hanslick was right about music'. *British Journal of Aesthetics*, 44 (1), pp. 29-43.
- Zangwill, N. (2007). 'Music, metaphor, and emotion'. *The Journal of Aesthetics and Art Criticism*, 65 (4), pp. 391-400.
- Zangwill, N. (2014). 'Music, Metaphor, and Aesthetic Concepts'. *The Journal of Aesthetics and Art Criticism*, 72 (1), pp. 1-11.