

Musical Meaning as Embodied Meaning: The Case of Horror Film Music

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Abstract

The film sound theorist K. J. Donnelly's essay 'Demonic possession: horror film music' (2005) famously remarks that some horror film music attempts at a "direct engagement with the physical" in that they trigger bodily effects "bypassed culture's learned structures". Donnelly notes that his 'direct-access thesis' of (horror) film music is subject to challenge from the "culturalist" view of film music, which contends that musical meaning is a mere matter of convention, and thus it is via learning the conventional meaning that film viewers come to be emotionally affected by the music and sound. This culturalist view of film music is supported by a position on musical meaning favoured by many philosophers —the cognitivist theory of music and emotion defended by Peter Kivy. It argues that musical meaning is grasped primarily via intellectually or cognitively processing the music's formal properties and/or the properties' conventional meaning.

In this paper, I defend Donnelly's "direct access thesis". I first examine the extent to which knowledge of music and musical conventions are required for music appreciation, in the course of which Kivy's cognitivist theory will be confronted. Then I put forward the view that musical meaning is primarily embodied, and show its merits over the culturalist and the cognitivist one. I wish to show how reflecting on horror film music provides interesting objections to a long-standing philosophical position of music and emotion, and enhance understanding of musical meaning.

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1. The distinctiveness of horror film music

The film sound theorist K. J. Donnelly (2005) begins his inquiry into horror film scores by asserting that horror film scores are distinctive from scores of other genres in that “they tend to have a very specific sound” (p. 90). They are identifiable as horror scores even when removed from the horror film context. Donnelly explains that this distinctiveness may have to do with the persistence of some generic elements and common practices, including dissonance, musical stingers (i.e. a sudden loud blast of music that is usually accompanied by low drones), and tremolo, which refers to the rapid alternation between two pitches.

The distinctiveness may also have to do with the scores’ peculiar “texture”: they are said to be distinctively “visceral”. For example, critics characterize the music composed by the Italian progressive rock group Goblin for the Italian horror filmmaker Dario Argento’s films (e.g. *Deep Red* [1975] and *Suspiria* [1977]) as “pulsating”; it “bathes these films in sheets of throbbingly visceral sonic affect” (Mitchell, 2009, p. 93).

The “visceral effect” in question can be elucidated in terms of its directness and immediacy to the audience’s body. In Donnelly’s (2005) terms, horror film scores aim at “a direct engagement with the physical” in that “they produce physiological effects that bypass culture’s learned structures” (pp. 93–94). Donnelly conjectures that such direct engagement with the spectator’s body has to do with the music’s “materiality”. The “materiality” can include manipulation of acoustic properties like timbre, frequency, pitch, rhythm, loudness, and so on. For example, the sounds in the shower scene of *Psycho* are said to have the effect of “literally penetrating one’s body if the volume is strong enough” (Kelleghan, 1996). Horror film scores have the power to serve as “direct accesses” to the bodies of an audience, inciting bodily sensations, exciting (mainly negative) emotions and even inserting in the audience “frames of mind and attitudes . . . much like a direct injection” (Donnelly, 2005, p. 88).

Donnelly’s characterization of horror film music challenges what he calls “the culturalist view of film music”, which maintains that the emotive/affective meaning of film music is culturally constructed and that listeners grasp the affective meaning via culture’s learned structures. The learned structures could be the theme the music is used to represent (e.g. the Gregorian Chant *Dies Irae* is used to represent death or doom), or how the formal elements are understood or used according to music conventions—for example, the affective meaning of a tritone (e.g. C and F#) is to be grasped via its status as *Diabolus in musica* (“devil in music”) in western music and so it is conventionally used to signify a sinister situation, or the presence of the devil (Halfyard, 2010).

Donnelly’s characterization also interestingly contends with a philosophical position, namely, the cognitive theory of music and emotion propounded by philosophers like Peter Kivy (1989; 1990; 2001; 2002). On Kivy’s view, pure music—that which is not accompanied by narrative, lyrics, or images—does not possess representational content. As a result, pure music does not carry any cognitive states; it does not

provide any intentional object at which emotions are directed.¹ However, on the cognitive theory of emotion embraced by Kivy, cognitive states are causally necessary for emotions, and emotions require an intentional object. It follows that pure music is not a cause of emotion.

On Kivy's theory, although pure music is not a cause of emotion, it can move us emotionally when we recognize the formal elements that are expressive of emotion. We can be moved by a piece of sad music when we recognize the music's formal elements that are *expressive of sadness*.² There are at least two ways for a piece of pure music to be expressive of emotion. First, some pure music is expressive of emotion because the formal elements (melody, contour, modality, tempo, etc.) resemble expressive human utterances, behaviours, gestures and bodily movements. For example, "melancholy people tend to express themselves in soft, subdued tones of voice; and melancholy music tends to be soft and subdued. Melancholy people tend to speak slowly and haltingly; and melancholy music tends to be in slow tempo and halting rhythm" (Kivy, 2002, p. 39). Second, musical expressiveness can be explained by the convention thesis. A piece of music featuring a major mode and diatonic harmony is expressive of happiness, because they are customarily used to accompany happy emotions at the outset of the modern musical tradition in the west. Kivy (1989) calls this "the convention theory of musical expressiveness" (pp. 71–83).

In sum, "a piece of sad music might move us (in part) because it is expressive of sadness, but it does not move us by making us sad" (Kivy, 1990, p. 153). In the light of the cognitivist theory, pure music is like a set of codes or symbols that signify emotive meaning. Its emotional effect hinges on one's musical knowledge and/or knowledge of the musical conventions. In any event, its emotional effects on listeners are not as direct as what Donnelly's "direct access thesis" would allow.

2. To what extent does musical knowledge matter to musical experience?

There is much to be said in favour of Kivy's view about how musical knowledge and/or knowledge of musical convention enhance music appreciation, which I think few would deny. However, I think that they do not give an adequate account of musical experience.

As seen above, what motivates Kivy to turn to musical knowledge and musical convention for an account of how pure music evokes emotion is the view that pure music is not a cause of emotion. It is interesting to note that Kivy's rejection of music as a cause of emotion is also motivated by his eagerness to secure a place for musical knowledge and musical convention in music appreciation. Let me explain. In his vehement rejection of Descartes's view on music that music is a kind of pleasure stimulation and it has an impact on our "animal spirit" (i.e. it is a direct physical cause of emotion [Kivy, 1990, p. 34]), Kivy (1990) comments that this "stimulation model"

¹ This is known as the formalist thesis propounded by the Viennese music critic Eduard Hanslick in 1854.

² Kivy distinguishes "expressing emotions" and "being expressive of emotion" with an analogy of looking at a photograph of a sad-faced dog. A Saint Bernard's face is expressive of sadness but the face does not express sadness in that the dog itself does not feel sad. But the sad qualities in the dog's face like its heavy, tight eyelids and drooping jowls make it expressive of sadness (Kivy, 1989, pp. 12–13).

of music “remains hopeless” (p. 38). The reason is that to see music as an affective stimulus like a sonic drug does not explain why a person could be, for example, “profoundly versed in counterpoint” (p. 40). The pleasure that one gains when appreciating the counterpoint of, for example, J. S. Bach’s *The Well-Tempered Clavier* is different from that of getting high by using chemical drugs. The dissimilarity lies in that in the case of getting high, more knowledge about how the drug works does not make the user feel more pleasure, but in the case of gaining pleasure from music, better music knowledge indeed makes the listener feel more pleasure. Therefore, for one to be versed in the counterpoint, “the music is not a stimulus for him; it is an object of perception and cognition, which understanding opens up for his appreciation” (p. 41).

However, Kivy has yet to show why pure music as “an object of perception and cognition” precludes its potency as an affective stimulus. Besides, the dissimilarity between pleasure gained from music and taking drugs may not be as striking as Kivy thinks it to be. In fact, musicologists used to draw analogies between different music genres and different kinds of substances.³ These analogies may be motivated by the observation that there are indeed similarities between listening to music and using a drug. For example, Descartes noted that the louder the sound, the greater the impact it has on our animal spirit: “when the sound is emitted more strongly and clearly at the beginning of each measure, we must conclude that it has greater impact on our spirits, and that we are thus roused to motion” (cited in Kivy, 1990, p. 33). Similarly, the higher the dose of the drug, the more excitement one experiences. Of course, in both cases, “over-dose” might cause pain.

Also, emotional experience in music appreciation is frequently characterized with music-induced affective responses. Consider the case of music-induced goose-bumps (or the “thrill and chills”), which is said to be “a well-established marker of peak emotional responses to music” (“Musical Chills”, 2011). It is widely known that a surprising change or derivation from a pattern in a musical piece can induce goose-bumps in the listeners as well as players. The renowned cellist Yo-Yo Ma gives the example of Schubert’s E-Flat Trio for piano, violin and cello, saying that when this march theme that’s in minor breaks out into major, “it’s one of those goose-bump moments” (as quoted in Belluck, 2011).

To this phenomenon a cognitivist could offer the following explanation. If he is a hybrid cognitivist who admits that emotion has an affective component, he might agree that those affective responses are part of the experience of being moved by music. Still, listeners are moved because they recognize certain formal elements or musical conventions that are expressive of the emotion; the goose bumps and “thrills and chills” are therefore the mere effect of the cognitive processing of musical information. When a listener/player recognizes a formal element, like a march theme in minor breaking out into major in the aforementioned work by Schubert, he/she is moved and goose-bumps result.

³ “We ‘take’ a certain kind of music to steer our nervous systems towards a particular condition: hard rock as the frenzied rush of cocaine; easy listening genres as a martini; cheery supermarket Muzak as a pick-me-up cup of coffee; cool jazz as a laid-back marijuana high; the far-flung landscapes of classical music as the fantasy of realm of psychedelics” (cited in Sonnenschein, 2001, p. 110).

I find this explanation feeble. One can recognize the aforementioned formal elements by merely reading the score or a verbal description of it. Does it follow that merely reading the score or the description without actually listening to or auralizing⁴ the piece is sufficient for, or reliably causes the relevant emotions? If yes, then is one moved by the music or by the description of the music? Also, it is not hard to imagine that listeners undergo more intense goose-bump moments when they attend a live performance of Schubert's work than when they listen to the same piece via headphones. Assuming other factors remain constant (e.g. the listeners are equally attentive, the piece is played by the same group of musicians, etc.), how can a cognitivist account for the diverse intensity of the emotions felt in different contexts, in which listeners are appreciating the same march theme that is in minor breaking out into major?

Some critics likewise accuse Kivy's theory of over-intellectualizing musical experience. For example, Krueger (2005) writes that even if musical knowledge indeed increases enjoyment, "it doesn't follow from this, as Kivy seems to think it does, that the acquisition of music-theoretical knowledge is a process both necessary and sufficient for deepened musical understanding" (p. 108). Kivy later (2002) concedes that "this is not to say that a rich appreciation of music cannot be achieved by those lacking knowledge of music theory" (p. 83). He anticipates that "the reader may be beginning to wonder about how far this [his theory] really goes in explaining what we enjoy in music", and he confesses, "I cannot answer this question" (p. 83).

In any event, both Kivy and his critic acknowledge that there is an aspect of musical experience that musical knowledge and/or knowledge of the musical conventions cannot explain away. As noted earlier, I admit that one's musical experience can be deepened by recognizing the formal elements or craftsmanship of a piece of music. However, I also think that sometimes we are *just* moved. The neurologist Oliver Sacks (2006) once said that "all of us have had the experience of being transported by the sheer beauty of music—suddenly finding ourselves in tears, not knowing whether they are of joy or sadness, suddenly feeling a sense of the sublime, or a great stillness within. I do not know how to characterize these transcendent emotions" (p. 2529). A major limitation of the cognitivist theory of music and emotion is that there is little room in it to account for such kinds of musical experience, in which listeners "lacking knowledge of music theory" experience ineffable but intense emotions.

3. The affective meaning of music is primarily embodied

I have shown that the cognitivist theory leaves some phenomena related to musical experience unexplained. Shedding light on these phenomena, I think, requires an alternative theory of music and emotion that acknowledges that pure music can incite emotions by serving as an affective stimulus.

To start with, there are ample empirical studies showing that music can serve as an affective stimulus. To summarize those studies, it has been found that music and sound can alter heart or pulse rate, body temperature, blood circulation, sweating, skin conductance, hormonal activity, cardio-respiratory activity, and induce subliminal

⁴ "To auralize" is to "hear music in our heads—especially when the music is not actually sounding" (Larson, 2012, p. 29).

facial expressions and physical actions. The toreador song from *Carmen* was found to raise heart or pulse rate, while Tchaikovsky's *Pathétique* decreases it (Robinson, 2005, p. 395). Research conducted by the psychologist Carol Krumhansl shows that the presence of intended sad, intended fear and intended happy music extracts are found to produce different physiological responses according to various measures, including pulse transmission times, respiration rates, blood pressure, skin conductance and finger temperature (Robinson, 2005, pp. 369–376).

Individual properties in music are also found to exert physical effects on our body in different ways. One such property is frequency. The film sound designer Sonnenschein (2001) explains that although we can usually pick up sound ranging from about 20–20,000Hz, sound that is beyond this range can still affect us bodily. For example, “very low pitches (known as infrasonic) are felt bodily as rumblings more than acoustic phenomena . . . Frequencies above hearing range (known as ultrasonic) may not be audible but can cause uneasiness if emitted loudly” (p. 67). As for frequencies within the hearing range, they can also have an effect on different parts of our body:

As a general rule, the lower frequencies up to around 65Hz will resonate in the lower back region, pelvis, thighs, and legs. The timpani, or orchestral kettledrums, are a prime example of a sound that activates this region not through the ear, but directly – affecting sexual, digestive, and deep-seated emotional centers. As the frequencies increase, effects are felt more in the upper chest, neck, and head, influencing the higher biological functions of the nervous system and mind. (p. 70)

This may shed light on the power of live music: an appreciator's physical presence in the live performance allows the music, by virtue of the diverse frequencies, to act on different parts of their body. Thus viewed, music appreciation is more than just an auditory experience; it can also be an embodied experience.

Another property is rhythm. Study shows that while listening to a lullaby, adult subjects “had marked decreased heart rates and their breathing rhythm became synchronized with the rhythm of the music” (Robinson, 2005, p. 397). This tendency to synchronize our bodily motions and physiological rhythms with heard rhythms is indeed a variety of a larger phenomenon called entrainment. The phenomenon of entrainment was first discovered by a Dutch scientist, Christian Huygens, when he found that “two pendulum clocks swinging side by side would enter into a remarkably synchronous rhythm, way beyond their mechanical accuracy . . . everything that vibrates in the universe seems to lock in and swing together” (Sonnenschein, 2001, p. 97).

Kivy might not be able to refute the empirical claim that musical rhythm can alter adults' physiology, but he could deny that altered physiology can result in emotions. As seen in Section 1, his theory of music and emotion is informed by the cognitive theory of emotion, which gives cognitive states, instead of affective states, a central place in emotion. The cognitive theory has received numerous challenges and criticisms that I cannot afford to rehearse here. Like many critics of the cognitive theory (Prinz, 2004; Robinson, 2005; Damasio, 1999; 2003), I find that the more plausible understanding of emotion is that emotion is essentially affective/embodied appraisal but not cognitive judgment. Cognitive states are not causally necessary for

emotions; non- or pre-cognitive states can also trigger affective appraisal and cause emotion. If music can alter one's affective states, it can also reliably trigger emotions; it effectuates with or without one taking the music as an object at which the emotion is directed. As Robinson (2005) puts it,

How can happy music make people happy, and calm music calm people down? The answer in a nutshell is that music with a happy, sad, calm or restless character causes physiological changes, motor activity, and action tendencies that are experienced as happiness, sadness, serenity, or restlessness. (p. 394)

I think this view of music and emotion can be interestingly positioned in a larger view on musical “meanings”, among which emotive “meaning” is just one. Mark Johnson (2007) deems that the “meaning” in and of music does not lie in representing (as is the case for language), but in presenting and enacting felt experience, that is, in causing us to feel and think “in concrete, embodied forms” (p. 236). Music moves us “bodily and emotionally and qualitatively” because it orders our experience and processes that are felt in our bodies. Take motion as an illustration. According to Johnson, we can feel musical motions as soaring, floating or falling “in our vital, tactile-kinesthetic bodies” (p. 239). Likewise, Larson (2012) stresses that our immediate experience of musical motion is shaped not by our intellectual understanding of physics but primarily by our embodied intuitive understanding of physical motion (p. 22). The latter includes our experience of seeing objects move, of moving our own bodies and of our own being moved by other substances or objects (see Larson’s Chapter 2).

In reference to emotive “meaning”, contra Kivy but in a similar vein to Robinson, sad music saddens us by making us sad: it enacts a sad emotional experience to be felt by us bodily. As Larson’s (2012) analysis of Henry Purcell’s *Dido’s Lament* suggests, the slow tempo and downward melodic contour of the bass line that descends by small steps enact the experience of being inevitably dragged down by the weight of sadness (p. 84; p. 97). The emotive “meaning” primarily draws on our embodied, lived experience of sadness, a route that is more direct and immediate than the route drawing on the listener’s knowledge of music’s formal elements or conventions.

Moving on, I think that the bodily route and the cognitive route do not necessarily preclude each other; they may even collaborate. As noted earlier, I think Kivy is right to say that musical knowledge and musical convention plays a role in deepening music appreciation. I now venture to explain their role in the light of the theory of music and emotion that I have just put forward. I gauge that listeners who are conscious of the music’s emotional effect may be promoted to cognitively explain and reflect on their emotional experiences. In Robinson’s terms, they make an “after-the-fact-assessment” of their emotional experiences. It is possible then for listeners who are equipped with musical knowledge to turn to the formal elements of the music, and/or to take musical conventions as point of reference when they engage in after-the-fact-reflection of their music-induced emotional experiences, or when they have to verbally communicate the experience to others. Yo-Yo Ma’s example of the goose-bump moment in Schubert’s E-Flat Trio for piano, violin and cello can also be seen as a kind of after-the-fact-communication. One’s appreciation may be deepened when one crosschecks their current emotional episode with what they already have in their musical emotion “catalogue”. In short, listeners armed with musical knowledge and

musical conventions may then be better at cognitively reflecting on their emotions. That may explain how knowledge of music and/or musical conventions can deepen music appreciation.

4. Searching for the affective meaning of horror film scores beneath cognition and convention

This alternative theory of music and emotion shall give Donnelly's characterization a theoretical basis. And I think that Donnelly's characterization of horror film scores interestingly shows that horror film scores exploit the potency of music to engage viewers affectively, whereby unpleasant emotion is configured. Now I show how seeing music's affective meaning as embodied facilitates a deeper understanding of the distinctiveness of horror film scores.

As mentioned in Section 1, the culturalists tend to see the affective meanings of some generic elements in film scores as culturally constructed. Undeniably, some generic elements in horror scores owe their affective meanings at least partly to culture and convention. For example, the organ has a "clear religious association" (Brown, 2010, p. 5). At the same time, however, some of the generic elements in Donnelly's list are obviously premised upon our innate emotional responses that bypass "culture's learned structures". Consider the "great noise on the film title that gives audiences an impression that it is an important and terrifying film" (noted by Hammer musical director Philip Martell, as cited in Donnelly, 2005, p. 89) and musical stingers that evoke startle responses. They draw on our innate, hardwired responses to (sudden) loud blasts of noise, which I think even the cognitivists and the culturalists would not deny. And some stem from the horror genre itself (e.g. the use of a heartbeat) so that their affective meanings cannot be grasped with reference to existing or pre-existing musical conventions (though it may be argued that the meanings are forged by association with the horror genre itself).

I venture, then, that the affective meaning of other generic elements in horror scores, which are commonly considered to be culturally constructed, are primarily embodied like musical stingers. One such element is dissonance.

Dissonance has always been perceived as unpleasant and unstable, while consonance is pleasant and stable. A diminished fifth like the tritone (e.g. C and G-flat), as noted in Section 1, has earned its name "the devil in music" as a result of its unpleasantness. While culturalists tend to attribute our preference for consonance over dissonance to learning through exposure to western music culture, Kivy has little to say about the emotive meaning of dissonance.

However, there are also views supported by growing evidence suggesting that this preference is not solely culturally determined but also has biological roots. Lots and Stone (2008) highlight one such study in which it was confirmed that compared to complex frequency ratios formed by dissonance (e.g. the ratio of a diminished fifth is 5:7), simple frequency ratios formed by consonance (e.g. an octave: 1:2; a perfect fifth: 2:3; a major third: 5:6) are more likely to be identifiable and to result in a stable perceptual representation even in human infants (p. 1429). In another experiment, Zentner and Kagan found that infants fret and turn away more frequently from dissonant music than consonant music (as cited in Scherer & Zentner, 2001, p. 367).

There have been debates over the exact biological mechanism that is responsible for giving rise to the perceived qualities of consonance and dissonance—be it interactions in the auditory periphery (e.g. Helmholtz, 1954) or neural synchronization (e.g. Lots & Stone, 2008). The neurobiologist Isabelle Peretz's (2011) recent article explains that the unpleasantness of dissonance is perceived before it acts on the neurons in our auditory cortex that respond to dissonance. Dissonant sound creates vibration patterns on the basilar membrane in the cochlea of our inner ear, which results in the perception of roughness and hence the unpleasantness (p. 109). These studies suggest that the affective “meaning” that we attribute to musical dissonance is a matter deeper than cognition and convention. Thus viewed, the act of attributing the affective meaning of, for example, the tritone to its status as “the devil in music” in the western music convention could be a result of an after-the-fact-reflection only.

Viewed in this light, the visceral feature of horror film scores may lie in some of their inherently unnerving generic elements that can agitate our bodies at different levels like unlearned emotional stimuli do. They draw on our innate, non-cognitive affective responses towards fear stimuli that do not require the mediation of cognition or “learned structures” at all, though our reactions to them could be reinforced by association and repeated exposure. They can trigger and sustain alarming affective responses automatically, with or without viewers’ conscious awareness of them as the cause. They are “the unseen sources of horror” that often work insidiously behind the scenes.

5. The Case of Shark Motif

Having said this, I do not intend to deny that horror film music also relies on representation of certain themes or associations for their emotive power, as the culturalists and some film music theorists claim. As Biancorosso (2011) notes in his analysis of the shark motif in *Jaws*, “to be sure, the successful triggering of visceral emotional responses on the one hand, and the full-blown representation of action, locale and character on the other, are not mutually exclusive” (p. 321). I venture further that not only are they not mutually exclusive, but that the former facilitates the latter. And I think the shark motif can serve as an apt illustration. Undeniably, the shark motif gains its power as a full-blown representation of the shark’s presence partly as a result of the filmmaker’s skillful welding of the music to the visual in the manner detailed by Biancorosso. Also, there seems to be no way for me to deny that some viewers who are familiar with western music are moved to fear when they trace the film music composer John Williams' use of “angular melodic lines, tonal dissonance, sudden dynamic contrast and unusual (typically low) instrumentation” to *ombra* scenes that dramatize the presence of supernatural beings, witches or demons in Italian and French opera in the seventeenth and eighteenth centuries (Biancorosso, 2011, p. 319). But seemingly there is also something about the shark music itself that makes the representation or association so spontaneous and effective, whereby even listeners who have minimal musical knowledge are emotionally disturbed.

The effectiveness of the shark motif, I think, may be addressed through a joint venture of embodied affective meaning and the notion of musical motion briefly discussed in Section 3. The shark motif consists of a two-noted rhythm of dissonance (E and F) whose unpleasantness, as mentioned earlier, has biological roots. Also, E and F are of

narrow interval, leading to a sense of tightness. The two-noted rhythm is accelerating and getting louder, which is immediately perceived as increasing spatial proximity.⁵ In Johnson's terms, the music itself "enacts" the sudden, fast, driving motion of some sort of physical being "in concrete, embodied forms". The music draws on our lived experience of seeing physical beings move (physical beings usually move rhythmically). Added to that, the low string is played in such a way that its warmer tone is eradicated so that it sounds rough, harsh and fricative, which endows a sense of aggressiveness in this moving physical being. While the camera can convey a sudden, fast, approaching movement, the music enacts qualities that cannot be achieved by camera movement and the visuals alone. That is also probably why Donnelly (2010) in his later work says that music and sound can "generate a clear and physical embodiment of the threat" in a more effective manner than mere visuals (p. 165).

I began this paper by showing how the distinctiveness of horror film scores proves to be a troubling case for the cognitivist philosophical position. It invites critical consideration of the extent to which musical knowledge and knowledge of musical convention matter for our being moved by music. I have also presented evidence in favour of the view that pure music can, by serving as an affective stimulus, incite emotions while bypassing musical knowledge or any of "culture's learned structures". I hope I have convincingly showed that how acknowledging music's power to directly access listener's body and seeing music's emotive meaning as embodied can facilitate a better understanding of horror film music.

⁵ See Lippman (1999) on how pitch and loudness are suggestive of distance and space with regards to the source of the sound (Chapter 2).

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