

# **Emotion descriptions and musical expressiveness**

Michelle Liu

Monash University

## **Correspondence**

School of Philosophical, Historical and International Studies, Faculty of Arts, Monash University, Level 6, 20 Chancellor's Walk (Menzies Building), Wellington Road, Clayton, VIC 3800, Australia.

Email: michelle.liu1@monash.edu

## **Funding information**

Leverhulme Trust, Grant/Award Number: ECF-2021-539

## **ABSTRACT**

Emotion terms such as “sad”, “happy” and “joyful” apply to a wide range of entities. We use them to refer to mental states of sentient beings, and also to describe features of non-mental things such as comportment, nature, events, artworks and so on. Drawing on the literature on polysemy, this paper provides an in-depth analysis of emotion descriptions. It argues that emotion terms are polysemous and distinguishes seven related senses. In addition, the paper applies the analysis to shed light on a long-standing debate in philosophy of music concerning emotion descriptions of music.

## **KEYWORDS**

polysemy, emotion, expressiveness, music, music psychology

## **1. INTRODUCTION**

Emotion terms such as “sad”, “happy” and “joyful” are adjectives that can refer to mental states of sentient beings (e.g., “John is happy”). We also use these terms to apply to non-

sentient things, for instance, comportment (e.g., “angry tone”), nature (e.g., “proud mountain”), events (e.g., “joyful wedding”), and artworks (e.g., “sad picture”). These descriptions can take the sentential form “x is E”, where “x” stands for an entity and “E” an emotion term, or appear as a noun phrase where “E” modifies “x”. Call these “emotion descriptions”. While the descriptions we just saw are conventional and literal, emotion descriptions can also be novel, creative and non-literal. For instance, when a former UK Prime Minister’s short time in the office was outlasted by a head of a lettuce, one might personify the lettuce and describe it as “proud”.

What kind of properties do emotion terms pick out in instances of emotion descriptions? How should we understand the semantics of emotion descriptions? Drawing on the literature on polysemy (e.g., Vicente, 2018; Vicente & Falkum, 2017) and focusing on conventional examples, this paper provides an in-depth analysis of emotion descriptions. Seven different but related senses of emotion terms are distinguished, and their interrelations examined. In addition, the paper relates the analysis to the debate in philosophy of music concerning emotion descriptions of music.

A semantic analysis of emotion descriptions is worth pursuing for two important reasons. Mainstream philosophical discussions have largely focused on emotions and their relations to other mental states such as moods and sensations, and have paid less attention to the fact that we also regularly apply emotion descriptions to non-mental things, to which we thereby attribute various emotional and non-emotional characteristics. A thorough analysis of emotion descriptions can reveal our conception of the wider emotional domain, understood to include not only emotions themselves, but also the characteristic expressions of emotions and features of non-mental, non-expressive things which can be described in emotion terms. It may also tell us about the connections between them.

Secondly and relatedly, such an analysis can have important applications. For instance, in philosophy of music, philosophers have long been concerned with how to understand emotion descriptions of music (“EMs” for short) and what light, if any, such descriptions can shed on the expressive character of music (e.g., Kivy, 1989; Davies, 1980, 2011; Budd, 1985, 1989; Levinson, 1996; Scruton, 1997; Matravers, 2001, 2007, 2011; Trivedi, 2001, 2008, 2011; Robinson, 2005; Zangwill, 2007; Cochrane, 2010). But the

discussion is often obscured by a lack of attention to emotion terms themselves. In the literature, theorists often make assumptions about what emotion terms mean, for instance, taking them to refer solely to mental states, and then jump to conclusions about the meanings of EMs (Matravers, 2007, p. 377; Kivy, 1989, p. 6; Scruton, 1997, p. 154; Trivedi, 2003, p. 259, 2008, p. 43; Zangwill, 2007, p. 393). Building on previous work (Liu, 2023a), in this paper I will illustrate that a thorough analysis of emotion descriptions can shed light on the debate concerning EMs and illuminate the complex relation between music and emotion.

The structure of the paper is as follows. Section 2 motivates the polysemy of emotion terms and outlines seven distinct but related senses thereof. Section 3 to Section 9 address the different senses in detail. Section 10 turns to the debate about emotion descriptions of music. Section 11 shows how the semantic analysis of emotion descriptions can shed light on the relation between music and emotion. Section 12 concludes the paper.

## 2. POLYSEMY AND EMOTION TERMS

Let me first make a few clarifications on polysemy. Polysemy is a linguistic phenomenon where a single wordform has multiple related meanings or senses. It is contrasted with homonymy where a single wordform is associated with distinct but unrelated meanings, such as “bank” and “match”. Many polysemes exhibit systematic patterns, revealing relevant conceptual structures that underpin the development of our lexicon. *Metonymy* and *metaphor* are the main mechanisms for generating polysemous words (e.g., Apresjan, 1974; Vicente, 2018; Vicente & Falkum, 2017). In the case of metonymic extensions, the relation holding among the different senses of a polysemous word is that of *contiguity*, where a word for one thing is used to denote a related thing. Metonymic relations include *count for mass* (e.g., “an oak” vs. “made of oak”), *animal for meat* (e.g., “cute chicken” vs. “delicious chicken”), *material for product* (e.g., “made of glass” vs. “a glass”) and so on. In the case of metaphorical extensions, the relevant relation is *resemblance*, where a similarity is creatively drawn between two distinct things in certain respects. For instance, the word “pig”, through metaphorical extension, can also be used to describe a person

who is dirty, greedy or generally unpleasant. In this case, there is some perceived resemblance between the animal and the person. This usage of the word, which was initially creative, has been conventionalised and the relevant extended sense lexicalised, that is, encoded by the word.

Polysemous words are usually distinguished from typical context-sensitive words. Standard context-sensitive words such as ‘I’, ‘today’ and ‘here’ can have distinct denotations across different contexts, but unlike polysemous words, they are not regularly used to stand for a fixed number of denotations (see Viebahn & Vetter, 2016). Instead, what is represented by the word form is a rule of application, and the denotation is determined by certain factors within the context of discourse at issue, such as by whom or when or where the token context-sensitive term is uttered.

Polysemous words also differ from words that express what relevance theorists call ‘ad hoc concepts’ (e.g., Carston 2002). A speaker can use a word in a novel, unconventional way to communicate an ad hoc concept that is different from the literal, encoded meaning of the word, and the hearer can construct the intended ad hoc concept pragmatically in utterance comprehension. For instance, commenting on a friend’s skilful swinging on the monkey bars, I might utter the sentence ‘John is such a gibbon’ (Liu 2023c). In this case, I certainly don’t mean that John is a non-human primate. I use the word ‘gibbon’ to communicate an ad hoc concept GIBBON\*, which is distinct from the encoded meaning of the word, to convey the idea that John is good at performing the locomotion of brachiating like a gibbon. Relevance theorists have argued that polysemous words often find their roots in ad hoc concepts (Falkum 2015; Carston 2021). For instance, the polysemous word ‘evangelist’ has an extended sense that refers to a person who is a firm advocate of something (e.g., ‘He’s an evangelist for free market economics’). This sense of the word is likely to have originated as an ad hoc concept. Through repeated use, the ad hoc concept is then routinised and becomes a stable sense of the word ‘evangelist’. So, unlike the construction of ad hoc concepts, which are often one-off, the different senses of a polysemous word are regular and conventionalised. Nevertheless, the difference between ad hoc concepts and the senses regularly expressed by a polysemous word may be a matter of degree rather than kind.

It is also worth noting that polysemy is a widespread phenomenon. It is estimated that around 40% words in English are polysemous (Byrd, 1987). This number increases to over 80% when only frequently used words are considered (Rodd et al. 2002, p. 250). Given the prevalence of polysemy, it is no surprise that emotion terms turn out to be polysemous.

The suggestion that emotion terms are polysemous is not new. Stephen Davies (2011, p. 25), in the context of discussing emotion descriptions of music, suggests that emotion terms have two related uses, where their primary uses refer to emotions, as in “Tom is sad”, and their secondary uses refer to “appearances of faces, bodies, and the like”, as in “Tom’s figure/face is sad”. While I agree with Davies that emotion terms are polysemous, I disagree that there are only two senses. In previous work (Liu, 2023a), I have suggested that emotion terms may have multiple distinct but related senses through metonymic and metaphorical extensions. In this paper, I distinguish seven distinct but related senses. These seven senses of emotion terms are not intended as exhaustive of all the meanings that these terms might have. Words can easily evolve to take on new meanings. These seven senses are philosophically interesting and are senses that emotion terms regularly exhibit.

Take a sentence “x is E” where “x” is a noun and “E” an emotion term. First and foremost, “E” has a *mental sense* that refers to a mental state *e*:

- (i) *Mental sense*: feeling *e*.

(i), which corresponds to Davies’ primary uses of an emotion term, refers to emotions and applies to sentient beings only. Much has been said about the mental sense of an emotion term and the nature of emotions understood as mental states (see Scarantino & de Sousa 2018 for a survey). In addition, “E” can exhibit a subset of the following related senses:

- (ii) *Appearance sense*<sub>1</sub>: having an appearance expressing *e* (especially of a look, tone, gesture, or feature).

- (iii) *Appearance sense*<sub>2</sub>: having an appearance that is perceived to resemble an appearance expressing *e* (especially of inanimate objects such as trees, mountains, waves and so on).
- (iv) *Appearance sense*<sub>3</sub>: having an appearance that is perceived to resemble *e* itself (especially of colours and tunes).
- (v) *Dispositional sense*: disposed to arouse *e*.
- (vi) *Representational sense*: represents a salient content to which “E” appropriately applies in one or some of the senses from (i) to (v).
- (vii) *Constitutive sense*: constituted by people who feel or express *e* (especially of an event or period).

Here, senses are individuated in terms of denotations. That is, the different senses of an emotion term pick out different properties in reality. It is plausible that (i) is the dominant or original sense of an emotion term from which all other subordinate senses ultimately derive. As will be explained below, whereas (iii) and (iv) are plausibly formed through metaphorical extension, all of the other four extended senses are formed through metonymic extension. The focus of the next six sections is on the subordinate senses of emotion terms. I shall look at each of (ii) to (vii) in turn.

### 3. APPEARANCE SENSE<sub>1</sub>

Consider the first appearance sense:

- (ii) *Appearance sense*<sub>1</sub>: having an appearance expressing *e* (especially of a look, tone, gesture, or feature).

(ii) describes the *appearance* of a thing that can *express* emotions (e.g., face, voice, eyes). Through metonymic extension, the mental sense referring to a mental state of a sentient being is extended to refer to bodily appearances associated with that mental state.

It is worth considering the differences between bodily appearances of emotions. Such differences depend on multiple factors. They may depend on the kind of thing at issue. A sad *face* appears differently from a sad *voice*. Differences in appearances may also occur with respect to the same type of thing. A face, for instance, can have different appearances of sadness. To bring out the latter point, it is helpful to distinguish between *unidimensional* and *multidimensional* adjectives (Sassoon, 2013). For instance, “tall” is a unidimensional adjective—a person is said to be “tall” in one respect only, that is, height. In contrast, “healthy” is a multidimensional adjective—a person is said to be “healthy” in many respects, such as blood, heart, cholesterol. While multidimensional adjectives can be modified by the phrases “in some/every respect” as in (1a), such modifications of unidimensional adjectives result in infelicities as in (1b) (Sassoon, 2013; McNally & Stojanovic 2017):

- (1) a. Tom is *healthy* in some/every respect.
- b. ?Tom is *tall* in some/every respect.

Emotion terms used in this appearance sense are often multidimensional. Consider (2):

- (2) a. Tom’s face is *sad* in some/every respect.
- b. Tom’s voice is *sad* in some/every respect.

A face can be sad in various respects (e.g., teary eyes, downward-shaping eyes, lips or eyebrows). Similarly, a voice can be sad in various ways (e.g., tensions in the vocal cords, low volume, slow articulation). Given this multidimensionality, disagreements can arise as to whether or not a face or voice *is* sad, just as there can be disagreement about whether or not someone *is* healthy, given that one can be healthy in different respects

(McNally & Stojanovic 2017, p. 21). Deciding whether an emotion term like “sad” is applicable in this appearance sense depends on whether the thing at issue meets a certain threshold of intensity of the relevant characteristic as well as the weighing of different dimensions. For instance, the shape of the eyebrows might not be as important as the presence of teary eyes in determining whether a face is “sad”.

#### 4. APPEARANCE SENSE<sub>2</sub>

There is also a second appearance sense:

- (iii) *Appearance sense<sub>2</sub>*: having an appearance that is perceived to resemble an appearance expressing *e* (especially of inanimate objects such as trees, mountains, waves and so on).

While (ii) applies to things that can express feelings, (iii) applies to things that typically cannot. For instance, the phrase “angry rash” employs this appearance sense of the term “angry”, meaning red or inflamed. But rashes cannot express feelings.

The two appearance senses are clearly related. Plausibly, (iii) is derived from (ii) through metaphorical extension. Emotion descriptions aptly apply to certain inanimate objects that do not express emotions because their appearances are thought to resemble the typical appearances of a person with corresponding emotions. A rash described as “angry” is perceived to resemble the flushed appearance of an angry person. A mountain described as “proud” is thought to resemble the upright stature of a proud person.

Now, one might wonder whether (ii) and (iii) are distinct senses after all. A simple *zeugma test* shows that they are. Consider (3):

- (3) a. ?John’s face is *angry*, so is the rash on his arm.
- b. ?Linda’s voice is *proud*, so is the tree in her garden.

Both elliptical constructions sound odd and are instances of zeugma. In both cases, the two appearance senses are evoked – appearance sense<sub>1</sub> in the first clause and appearance sense<sub>2</sub> in the second clause. But they cannot be coordinated in such a way that avoids rendering the relevant sentence odd. That is, “so” in the elliptical phrase cannot be straightforwardly understood in the appearance sense<sub>1</sub> as used in the first clause. If the two appearance senses were one and the same, then (3)-sentences should not sound odd. But they do, and this suggests that the two senses are distinct.<sup>1</sup>

## 5. APPEARANCE SENSE<sub>3</sub>

There is also a third appearance sense:

- (iv) *Appearance sense<sub>3</sub>*: having an appearance that is perceived to resemble *e* itself (especially of colours and tunes).

We often describe colours and tunes—even simple ones—using emotion terms, e.g., “gloomy colours”, “cheerful tune”. In some of these instances, the emotion terms apply to appearances of things that is perceived to resemble the corresponding emotions themselves, such as gloominess and cheerfulness. The idea that an appearance feature can be seen to resemble an emotion may seem puzzling on a first pass, and thus requires clarification.

A helpful starting point is to consider the phenomenon of cross-domain congruences, which are non-arbitrary associations between features from different

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<sup>1</sup> The coordination of different senses of a polysemous word does not necessarily result in oddness. Many theorists think that copredicational constructions such as “The book weighs two kilos but is very interesting” involve different senses of a noun being simultaneously selected by the predicates, such that “book” refers to both physical tome and informational content simultaneously (e.g., Chomsky, 2000, p. 37; Collins, 2017). While a lack of oddness may be compatible with a distinctness in senses in sentences of this kind, the presence of oddness certainly suggests the latter provided that the oddness does not result from other semantic or pragmatic factors (see Liu 2023b, 2024).

domains, where such domains may be sensory or emotional. The phenomenon has been discussed in both philosophy and psychology (e.g., Green, 2007, 2008; Parise & Spence 2013; Liu, 2022). There are different kinds of cross-domain congruences. For instance, there are cross-modal correspondences between simple *auditory* and *visual* features (e.g., higher pitches are associated with brighter colours and higher elevations, lower pitches with large-sized objects), as well as between complex stimuli like music on the one hand and simple (e.g., colour) or complex (e.g., paintings) visual stimuli on the other (for a survey on audio-visual cross-modal congruences, see Parise & Spence 2013). There are also cross-domain congruences between the sensory on one hand and the emotional on the other. We naturally think of bright colours as cheerful and dark colours as gloomy. Empirical results from Palmer *et al.* (2013) show that certain colours as well as musical samples are judged by participants to be associated with certain emotional descriptors (e.g., “happy”, “sad”, “angry”, “calm”). This latter kind of cross-domain congruence is relevant when considering appearance sense<sub>3</sub> of emotion terms.

What explains sensory-emotional cross-domain congruences may be complex and multi-faceted. But it is plausible to think that at least in some cases, the congruence is underpinned by a perceived resemblance between the sensory feature on the one hand and the emotion on the other along some dimension. For instance, Mitchell Green (2007, 2008) suggests three dimensions, i.e. intensity, pleasantness, and dynamism, and that we can map any experience onto the three dimensions in a largely unconscious manner. In these cases, we describe a certain colour as, say, “gloomy” or “cheerful”, because the relevant experiences—the colour experience on the one hand and the emotion on the other—share similar coordinates in the three-dimensional space (see also Ravasio, 2021). However, we need not fix on these dimensions (Liu, 2023a). The basic idea is that some appearance features are considered as similar to certain emotions in some salient respects where such respects may differ from case to case. For instance, a certain arrangement of bright colours is considered “cheerful” because we experience the colours and the emotion as vibrant, intense, and dynamic; whereas a certain arrangement of dark colours is considered “gloomy” because we experience the colours and the emotion as dull, static

and suppressing.<sup>2</sup> Relatedly, it seems plausible to think that appearance sense<sub>3</sub> is extended from the mental sense, that is, (i), through metaphorical extension, where a certain resemblance is perceived between the two domains.

## 6. DISPOSITIONAL SENSE

Consider the dispositional sense:

(v) *Dispositional sense*: disposed to arouse *e*.

The dispositional sense is most salient in constructions with the expletive pronoun “it”, such as (4):

(4) It is *sad* to lose the job.

In (4), the predicate “is sad” takes one argument – the infinitive clause “to lose the job”. (4) is thus equivalent to (5):

(5) To lose the job is *sad*.

Sentences like (4) and (5) involve an implicit patient:

(6) (a) (*For some contextually salient person*) it is *sad* to  $\varphi$ .

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<sup>2</sup> Why a certain colour or tune is experienced in a certain way may depend on various factors, including the intrinsic character of the experience as well as extrinsic factors such as cultural conventions. For instance, the colour red may be experienced as agitating and intense in Western cultures, but experienced as auspicious and lively in Chinese cultures.

(b) To  $\phi$  is *sad* (for some contextually salient person).

The adjective “sad” in these cases means something like “make (someone) sad<sub>(i)</sub>” where this someone is some contextually salient person. In (4) and (5), the contextually salient person is likely the one who loses the job.

Note that in truthfully asserting that “To lose the job is sad for John” or “To lose the job makes John sad”, it is not necessarily the case that John *is* feeling sad. These sentences are true as long as the event of John’s losing his job is *disposed* to arouse a sad feeling in John. Dispositions are characterised minimally in the following way: if something is prone to behave in a certain way in certain circumstances, then this something has a disposition (McKittrick, 2003, p. 156). A fragile glass is disposed to break when struck, where fragility is a *disposition* of the glass. Dispositions have *characteristic manifestations*. Breaking is the characteristic manifestation of fragility. In John’s case, the *disposition* pertains to the event of losing the job, and the *manifestation* is John’s feeling sad.

Emotion terms in this dispositional sense are analogous to *deverbal psych adjectives*, which typically end in “ing”, for example, “infuriating”, “exhilarating”, “worrying”. Consider:

(7) It is *infuriating* to hear the verdict.

In (7), the event of hearing the verdict is *disposed* to arouse fury in the contextually salient person.

The dispositional sense is plausibly derived from the mental sense through metonymic extension. The relevant metonymic relation is causal, whereby the emotion of a person being impacted is projected as a feature, in this case a disposition, onto the cause.

## 7. REPRESENTATIONAL SENSE

Consider the representational sense:

- (vi) *Representational sense*: represents a salient content to which “E” appropriately applies in one or some of the senses from (i) to (v).

(vi) applies to representations such as pictures and films, as in (8):

- (8) a. This is an anxious-<sub>(vi)</sub> painting.  
b. The film is sad-<sub>(vi)</sub>.

An emotion term in this representational sense refers to the property of representing a certain salient content. Consider (8a) and a picture that is anxious in this representational sense. It could be a figurative painting representing a *person* feeling anxious. This is typically done by representing the appearances of anxiety as seen from the person’s bodily expressions. For instance, Gustave Courbet’s *Le désespéré*,<sup>3</sup> which may be appropriately described as “anxious”, represents an anxious man by representing his anxious face and gesture.

A picture can also be anxious-<sub>(vi)</sub> by representing an anxious *scene*. Consider Ernst Ludwig Kirchner’s *Potsdamer Platz*.<sup>4</sup> The painting is anxious not because the people it represents look anxious – their faces are rather bland. It is anxious because the (imaginary) scene being depicted can be described as “anxious”. Distorted figures and architecture,

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<sup>3</sup> This painting can be found online at <https://www.wikiart.org/en/gustave-courbet/the-desperate-man-self-portrait-1845>.

<sup>4</sup> This painting can be found online at <https://recherche.smb.museum/detail/962196/potsdamer-platz>.

blank and indistinct faces, sharp pointy angles, combined with conflicting colours create an anxious atmosphere.<sup>5</sup>

There is much to say about emotion descriptions of a *scene*, which goes beyond the scope of this paper (see Wollheim, 1993; Lopes, 2005, chap. 5). For a start, scenes without sentient beings can also be aptly given emotion descriptions. It seems plausible that in these cases, an emotion term can be used in appearance sense<sub>3</sub>, that is, (iv), as well as the dispositional sense, that is, (v). A scene can be *melancholy* because of how it *appears* (e.g., an evening scene with dark colours), in which case the visual experience of the scene resembles a melancholy feeling in certain respects. A scene can also be *melancholy* because it is *disposed* to arouse a melancholy feeling in a suitable viewer. Such a scene can have a sad look, or a salient connection to some event the thought of which disposes one to feel sad.

The representational sense is plausibly formed through metonymic extension where the relevant relation of contiguity holds between the *content* of the representation and the *vehicle* of representation. In this case, the representational vehicle can be aptly described in emotion terms because what it represents, that is, the content, can be so described.

It is also worth noting that the representational sense is often associated with the dispositional sense. Plausibly, both senses are available when we encounter phrases like “a sad film”. This seems no surprise since a film that is sad in the representational sense is likely to be one that is disposed to arouse a sad feeling in viewers. The representational content can serve as the categorical basis for the relevant disposition of the film. It is because the film has such-and-such representational content, it is disposed to arouse certain feelings in the suitable viewer. In other cases, the relevant disposition may not be grounded in the film’s representational content, but in some extrinsic property. Consider a film that makes you nostalgic. The nostalgic character of the film, understood as a

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<sup>5</sup> One might prefer to think that the painting does not represent an anxious scene but represents a scene in an anxious manner. Conceived in the latter way, the emotion term “anxious” seems to be used in appearance sense<sub>3</sub>. That is, the formal properties of the painting resemble the emotion of anxiety itself.

disposition, may be grounded in its contingent relation to you (e.g., being your favourite film in your adolescent years), rather than something intrinsic to the film.

## 8. CONSTITUTIVE SENSE

Finally, consider the constitutive sense:

- (vii) *Constitutive sense*: constituted by people who feel or express *e* (especially of an event or period).

This sense is plausibly formed, again, through metonymic extension. The relevant relation of contiguity is that of part–whole, where the whole can be appropriately described in emotion terms because the parts can be so described. Consider emotion descriptions of events:

- (9) The wedding is joyful.

Events occupy particular points in time and may be extended in time. According to one notable theory of events—the *property-exemplification view*—an event consists of an object exemplifying a property at a time, expressed as the triplet  $\langle o, F, t \rangle$ , where “*o*” stands for an object, “*F*” a property, and “*t*” a point or interval in time (Kim, 1976). An event often involves people doing things. In cases where an event is described with an emotion term *E*, the relevant “*o*” stands for some contextually salient persons, and “*F*” stands for the property of *feeling e* or the property of *expressing e*. For instance, to say an event is joyful in this sense means that the event is constitutive of contextually salient people who feel or express joy. The joyfulness of an occasion is grounded in the feelings and expressions of joy of the people who constitute the event. Relatedly, joyful days are a period of time made up of salient events which are joyful in the aforementioned sense.

Like the representational sense, the constitutive sense is likely to co-occur with the dispositional sense. A joyful event with people feeling or expressing joy is likely to be one that is disposed to arouse joy in others.

## 9. THREE FURTHER POINTS

In previous sections, we saw that an emotion term, which has a *mental sense*, can also have multiple other senses: *appearance*<sub>1</sub>, *appearance*<sub>2</sub>, *appearance*<sub>3</sub>, *dispositional*, *representational* and *constitutive*. A few further points regarding the polysemy of emotion terms are worth noting.

First, while some emotion terms exhibit all senses (e.g., “sad”, “happy”, “joyful”), others only have some of them. For instance, “elated” only has the mental sense, applying to sentient beings not things. “Angry” lacks the dispositional sense. Instead, we have a term “infuriating” in English.

Second, with a polysemous emotion term “E” in a sentential construction “x is E” or in a noun phrase where “E” modifies “x”, the semantic category of the subject, that is, “x”, often selects the relevant sense of “E” at issue. Augustin Vicente (2017, 2018) has argued that the specific or occasional meaning of a verb in a sentence is determined in composition by the argument the verb takes. For instance, the verb “cut” can take on different arguments (e.g., “cut the grass/cake/ribbon/interest rate”). The specific meaning of “cut” seems to be determined in composition in each instance of its occurrence. It depends on what is being cut, that is, the noun phrase that follows the verb. Similarly, the specific sense of an emotion term plausibly depends on the kind of noun phrases it modifies. If the noun phrase “x” refers to a sentient being, then “E” is used in the *mental sense*. If “x” refers to things that express emotions such as voices and looks, then “E” is used in *appearance sense*<sub>1</sub>. If “x” refers to things that typically cannot express emotions, such as trees and mountains, but can nevertheless be thought to resemble emotional appearances of things that do express emotions, then “E” is used in *appearance sense*<sub>2</sub>. If “x” refers to things that typically cannot express emotions, such as colours, but can nevertheless be perceived to resemble emotions themselves in certain respects, then “E” is likely to be used in *appearance sense*<sub>3</sub>. If “x” refers to things like novels and films, the

senses at issue are the *dispositional sense* and the *representational sense*. If “x” refers to a time or an event, the relevant sense is likely to be the *constitutive sense* or the *dispositional sense*.

Third, and finally, polysemous emotion terms seem to be examples of what Aristotle (1984) calls “pros hen” (i.e., focal meaning), where the related meanings of a polysemous word stem from a core meaning. Consider the polyseme “healthy”. It has a core meaning which applies to things that are capable of having health, such as “Tom is healthy”. The word “healthy” also has other senses that derive from this core meaning. It can apply to things that a healthy person possesses, as in “Tom’s blood is healthy”, and things that are conducive to health, as in “Tom’s food is healthy” (see Liu, 2021, p. 468). It is plausible that emotion terms work in an analogous way, where the *mental sense* constitutes the core meaning from which other senses ultimately derive. Indeed, as we already saw, the six subordinate senses of an emotion term relate to the *mental sense*, as well as each other, in one way or another.

In the next section, I turn to the debate in philosophy of music concerning emotion descriptions of music and show how our analysis can shed light on this debate.

## 10. EMOTION DESCRIPTIONS OF MUSIC

A wide range of adjectives denoting emotions and feelings can be used to describe pure or instrumental music, including “anguished”, “agitated”, “angry”, “happy”, “joyful”, “melancholy”, “mournful”, “remorseful”, and “sad”. The semantics of emotion descriptions of music (EMs) has generated much discussion in philosophy of music.<sup>6</sup> The linguistic issue is closely tied to the debate about musical expressiveness (e.g., Kivy, 1989; Davies, 1980, 2011; Matravers, 2001, 2007; Trivedi, 2001; Robinson, 2005; Cochrane, 2010). Philosophers often align their theories of musical expressiveness with their semantic accounts of EMs (e.g., Davies, 1980, 2011; Trivedi, 2001, 2008).

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<sup>6</sup> Here and as elsewhere in the literature, the concern is with respect to instrumental music (i.e., music without vocals) and its relation to emotion.

Regarding the semantics of EMs, the divide is often construed as being between *literalists* and *metaphorists* (see Zangwill, 2007; Davies, 2011, chap. 2). Consider the EM “the music is sad”. While metaphorists would usually say that it is literally false and metaphorical (Scruton, 1997, p. 154; Zangwill, 2007, p. 393), literalists would say that it is literally true and attributes the property *being sad* to the music, though they disagree about what this property precisely is (see Davies, 2011, chap. 2; Matravers, 2001, p. 146). Note that literalism is compatible with metaphorism if the metaphors at issue are understood as frozen or dead metaphors whose meanings have been conventionalised and lexicalised, hence becoming literal. As we already saw, an emotion term can have an extended but literal sense through metaphorical extension, as in “*angry* rash”. To construe literalism as *incompatible* with metaphorism, metaphor should be understood as a kind of non-literal or figurative language. In the rest of this paper, metaphorism will be understood as being incompatible with literalism.

In the literature, metaphorism about EMs is often put forward with a simple consideration. Here is a passage from Davies, who is a literalist but nevertheless accepts the appeal of metaphorism:

A simple argument suggests that attributions of expressiveness to purely instrumental music are metaphoric. Only sentient creatures can have or experience emotions such as sadness; music is non-sentient; so music cannot have or express emotions such as sadness; despite realising this, we say such things as “the music is sad”...; so these attributions must be metaphoric rather than literal.

(Davies, 2011, p. 21)

The argument for metaphorism can be formulated as below (see also Matravers, 2007, p. 377; Kivy, 1989, 6; Scruton, 1997, p. 154; Trivedi, 2003, p. 259, 2008, p. 43; Zangwill, 2007, p. 393):

- (I) EMs are either literally true or metaphorical.

- (II) If EMs are literally true, then they must be attributing mental states to sentient beings.
- (III) Music is not a sentient being.
- (IV) EMs are metaphorical.

Given our discussion on emotion terms, this argument is highly problematic. In particular, (II) is false. While emotion terms like “sad” and “happy” *can* refer to mental states, they do not *only* refer to mental states. A literalist can reject (II) on the grounds that emotion terms are often *polysemous*. Such a literalist can say that the sense or senses involved in EMs – which are often conventional descriptions of music – do not refer to mental states. So, the polysemy of emotion terms speaks in favour of literalism over metaphorism. The appeal of the above argument—premise (II) in particular—is simply founded on a mistaken assumption about the meanings of emotion terms.

In addressing the argument, Davies (2011) indeed rejects (II). Recall that for Davies, emotion terms have primary and secondary uses where the former refer to mental states and the latter refer to “appearances of faces, bodies, and the like” (Davies, 2011, p. 25). Davies argues that emotion terms in EMs are used in the second way, because, as he states, “we experience music as presenting an appearance that resembles characteristic human behavioural displays of affect” (2011, p. 26). This resemblance, according to Davies, is primarily between human bodily comportment and music’s dynamic movement. Just as we can literally and correctly describe a person’s figure as “sad” because of their comportment, we can literally and correctly describe a piece of music as “sad” because of the patterns of its movement. In this case, the emotion term “sad” in the corresponding EM refers to an *appearance property*, specifically, a property of the music’s movement. Corresponding to this semantic account of EMs, Davies holds a version of the resemblance theory of musical expressiveness or what he calls “appearance emotionalism” (2011, chap. 1). On this account, a piece of music expresses emotion *e* if and only if there is a perceived resemblance between the music’s dynamic movement and the movement typically exhibited by someone who has *e*.

While Davies’ discussion on EMs is illuminating, a number of limitations are revealed by our discussion on the polysemy of emotion terms. In Sections 3-5, we

distinguished three distinct but related appearance senses—one applying to bodily compartments that typically express emotions, a second applying to things that typically cannot express emotions but nevertheless are thought to bear resemblance in appearance to those that do, and a third applying to appearance features that are perceived to resemble emotions themselves in certain respects. Davies does not distinguish these appearance senses. Furthermore, given emotion terms exhibit a variety of senses, other senses apart from appearance ones also warrant a closer look when considering EMs.

Now, emotion terms in EMs can exhibit neither the *mental sense*, since music is not a sentient being with emotions; nor the *constitutive sense*, since music, unlike some events, is not the kind of thing that is constituted by sentient beings. Drawing on works on music psychology, in the next section I argue that EMs can exhibit all the other senses, and that this sheds important light on the complex relation between music and emotion.

## **11. MUSIC AND EMOTION**

### **11.1 Music and appearances**

Psychologists who work on the relation between music and emotion systematically distinguish between *emotion perception*, that is, instances where the listener recognises expressed emotions in the music, and *emotion induction*, that is, instances where music evokes certain emotions in the listener (Gabrielsson, 2001; Juslin & Laukka, 2004; Sloboda & Juslin, 2001; Juslin & Västfjäll, 2008). Both types of states, which may or may not co-occur, can ground appropriate EMs. I shall discuss emotion perception in this subsection and emotion induction in the next in relation to the dispositional sense of an EM.

Psychological studies have shown that there is a general agreement in people's judgements of emotions perceived in music, especially broad emotional categories (Juslin & Laukka, 2004; Gabrielsson, 2016). We can think of instances of emotion perception as perceptual states of perceiving certain appearance properties of music where such perceptual states then license corresponding EMs. What then are these appearance properties? An appearance property of music is a property that can be defined in terms of

structural features of the music, for example, tempo, pitch, volume, mode, harmony, tonality. Empirical literature demonstrates that appearance properties to which emotion terms apply are functions of multiple factors. Consider the table below from Juslin and Laukka (2004, p. 221), summarising the correlations between emotions perceived in the music on the one hand and musical features on the other.

Emotion	Musical features
Happiness	Fast tempo, small tempo variability, major mode, simple and consonant harmony, medium-high sound level, small sound level variability, high pitch, much pitch variability, wide pitch range, ascending pitch, perfect 4th and 5th intervals, rising micro intonation, raised singer's formant, staccato articulation, large articulation variability, smooth and fluent rhythm, bright timbre, fast tone attacks, small timing variability, sharp contrasts between "long" and "short" notes, medium-fast vibrato rate, medium vibrato extent, micro-structural regularity
Sadness	Slow tempo, minor mode, dissonance, low sound level, moderate sound level variability, low pitch, narrow pitch range, descending pitch, "flat" (or falling) intonation, small intervals (e.g., minor 2nd), lowered singer's formant, legato articulation, small articulation variability, dull timbre, slow tone attacks, large timing variability (e.g., rubato), soft contrasts between "long" and "short" notes, pauses, slow vibrato, small vibrato extent, ritardando, micro-structural irregularity
Anger	Fast tempo, small tempo variability, minor mode, atonality, dissonance, high sound level, small loudness variability, high pitch, small pitch variability, ascending pitch, major 7th and augmented 4th intervals, raised singer's formant, staccato articulation, moderate articulation variability, complex rhythm, sudden rhythmic changes (e.g., syncopations), sharp timbre, spectral noise, fast tone attacks/decays, small timing variability, accents on tonally unstable notes, sharp contrasts between "long" and "short" notes, accelerando, medium-fast vibrato rate, large vibrato extent, micro-structural irregularity
Fear	Fast tempo, large tempo variability, minor mode, dissonance, low sound level, large sound level variability, rapid changes in sound level, high pitch, ascending pitch, wide pitch range, large pitch contrasts, staccato articulation, large articulation variability, jerky rhythms, soft timbre, very large timing variability, pauses, soft tone attacks, fast vibrato rate, small vibrato extent, micro-structural irregularity
Tenderness	Slow tempo, major mode, consonance, medium-low sound level, small sound level variability, low pitch, fairly narrow pitch range, lowered singer's formant, legato articulation, small articulation variability, slow tone attacks, soft timbre, moderate timing variability, soft contrasts between long and short notes, accents on tonally stable notes, medium fast vibrato, small vibrato extent, micro-structural regularity

Table 1: Summary of musical features correlated with discrete emotions in musical expression. (Source: Juslin & Laukka, 2004, *Journal of New Music Research*, p. 221, reprinted by permission of the publisher (Taylor & Francis Ltd, <http://www.tandfonline.com>).

The correlations between emotions and individual features are understood probabilistically (Juslin & Laukka, 2004, p. 220). For instance, it is not the case that the minor mode always appears in sad music, though it is a typical feature of the latter. Individual musical features may also be associated with several distinct emotions. Fast tempo is associated with both happiness and anger. The idea is that it is the combinations of multiple factors that determine the appearance property of a piece of music, which we then describe with an emotion term. The structural complexity of the emotional appearance of music is analogous to the multidimensionality of a sad face, which we

noted in Section 3. A piece of music can be sad in various respects. Being able to recognise the relevant sad appearance in music that licenses the EM—“the music is sad”—does not require us to recognise the individual factors that determine the overall appearance, although on reflection we are able to point to specific features of music, such as pitch, volume, tempo and so on.

If an EM like “the music is sad” describes an appearance property of the music, *which* appearance sense is at issue? The literature on music psychology, while having identified the relevant properties, is largely silent on this question. In Section 4, we saw that emotion descriptions aptly apply to certain inanimate objects such as mountains and rashes, because their *appearances* are thought to resemble the *appearances* of persons with corresponding emotions. This kind of resemblance seems to also underpin EMs when they are used to describe music’s appearance. As several theorists have noted (Davies, 1980, 2011; Peacocke, 2009; Schroder, 2013), music’s sad appearance, in many cases, is thought of in terms of appearance of a sad person (e.g., voice, movement). In Section 5, we also saw that emotion descriptions can be applied to things like colours, whose appearances are considered to resemble certain emotions. Understood this way, EMs may also be understood as attributing appearance properties that are perceived to resemble corresponding emotions in certain respects (see Green, 2007, 2008).

Furthermore, in Section 3 we saw that emotion descriptions can be applied to things like bodily comportment that expresses emotions. Indeed, we typically think of music as expressive of emotions. Plausibly, we think this way because music is the product or work of a composer, similar to actions and behaviours, through which emotions or feelings can be expressed.<sup>7</sup> Such mental states, of course, need not be actually experienced by the composer in composing the music. We can think of the emotions successfully expressed by a piece of music as *intended*, rather than experienced, by the composer, who often conveys them by using certain structural features, some of which are thought to resemble the appearances of relevant emotions in bodily comportment (i.e.,

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<sup>7</sup> Similarly, we can consider an abstract painting consisting of certain colour arrangements as expressive of emotions.

appearance sense<sub>2</sub>), and some of which are thought to resemble the emotion itself (i.e., appearance sense<sub>3</sub>).

So, the three appearance senses of emotion terms are intertwined when describing emotional appearances of music. A piece of music can be given an emotion description in appearance sense<sub>1</sub> because it expresses a certain emotion intended by the composer, in appearance sense<sub>2</sub> because it is perceived to resemble the appearances of bodily compartments that express the emotion, and in appearance sense<sub>3</sub> because it is perceived to resemble the relevant emotion. Plausibly, a piece of instrumental music successfully expresses the emotions intended by the composer because it can be described in either of the two latter appearance senses.

## 11.2 Music and dispositions

In addition to emotion perception, psychological literature has also shown that music often arouses emotions and feelings in listeners (Gabrielsson, 2001; Juslin & Laukka, 2004; Sloboda & Juslin, 2001; Juslin & Västfjäll, 2008; Juslin, 2016). On the basis of characteristic emotional responses that music is disposed to arouse in suitable listeners, EMs can also be used to attribute corresponding dispositions to music.

EMs in a dispositional sense nevertheless attribute two kinds of dispositions to music, tracking two kinds of causes that arouse emotions. Music psychologists Juslin and Laukka (2004, p. 218) note that “some emotions may be aroused mainly by structural characteristics of the music, whereas others reflect personal associations”. So, aroused states can be caused by intrinsic features of music, for example, “structural characteristics of the music”, as well as its extrinsic features, such as personal associations. Correspondingly, music has two kinds of dispositions to arouse emotions – *intrinsic* and *extrinsic*.<sup>8</sup>

The two kinds of dispositions are also reflected in how we typically interpret certain EMs used in the dispositional sense. Consider (10):

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<sup>8</sup> See McKittrick (2003) on the distinction between intrinsic and extrinsic dispositions.

- (10) a. The music is sad<sub>-(v)</sub>.  
b. The music is nostalgic<sub>-(v)</sub>.

Understood as attributions of dispositions, we tend to interpret (10a), not (10b), as attributing an intrinsic disposition to music. Consider this case. Beethoven's *Ode to Joy* is disposed to arouse a sad and nostalgic feeling in John, because it was his deceased grandmother's favourite music, something John frequently listened to as a child. It would seem somewhat strange for John to utter (10a), since the piece is happy, triumphant, and naturally does not make one sad. In interpreting (10a) and "sad" in a dispositional sense, we tend to attribute to music an *intrinsic* disposition, which is underpinned by the music's appearance features or structural characteristics rather than personal associations. In contrast, John can perfectly well utter (10b) to refer to music's *extrinsic* disposition, where the relevant disposition is underpinned by his contingent personal associations with the music.

### 11.3 Music and representations

An EM can also exhibit the representational sense of an emotion term. While instrumental music is not typically thought of as representational, it can nevertheless represent scenes and narratives, such as in the case of programme music. Consider Beethoven's programmatic *Sixth Symphony*, consisting of five movements jointly intended to represent a narrative, as the titles of the movements suggest. The first three movements can be appropriately described as "cheerful" in the representational sense. The first movement, "Awakening of Cheerful Feelings on Arrival in the Countryside", represents a person as cheerful or expressing cheerfulness. The second movement, "Scene by the Brook", which begins with the sound of a flowing brook represented by string instruments and ends with various birds' calls represented by different wind instruments, represents a scene that may be aptly described as "cheerful". The third movement, "Merry Gathering of Country Folk", represents people as expressing a cheerful sentiment through dancing. In each case, the EM "the music is cheerful" appropriately applies.

Examples of music that can be given EMs in the representational sense are easy to find if we go beyond the Western canon. Chinese music is often representational.

Consider the Guzheng piece *Zhan Tai Feng* (translated as *Battling the Typhoon*), which has a clear narrative structure. The piece opens with a representation of a dock scene where workers are busy preparing for the arrival of a typhoon. The music is nervous and anxious. The main body of the piece, representing the arrival of the typhoon and people bravely fighting it, uses fast tempo, tremolo, cycles of glissando, and muffled percussive sounds mimicking the sound of winds to create a scene or atmosphere that may be aptly described as “anxious”. The final section is calm, relaxed but triumphant. Using a much slower tempo, it represents the passing of the typhoon and the triumph of the people who fought it.

While the above two examples are drawn from programme music, others have argued that absolute music, that is, instrumental music without a programme, lyrics, dramatic setting, or thematic title, can also be representational (e.g., Kim, 2023). My account is not committed to a particular theory of musical representation, such that the representational sense of emotion terms may be appropriately applied to absolute music as well as programme music. How exactly instrumental music – whether programmatic or absolute – represents content goes beyond the scope of the paper. The composer may intend the music to represent a certain content via either natural resemblance between features of the music and the content or via convention (for a discussion on how music represents via convention, see Kim, 2023).

#### **11.4 Pluralism**

To sum up the section: an EM can exhibit different senses of an emotion term – *appearance sense*<sub>1</sub>, *appearance sense*<sub>2</sub>, *appearance sense*<sub>3</sub>, *dispositional sense*, and *representational sense*. Contextual information can aid us in homing in on the sense of an emotion term at issue. In the absence of contextual information, the relevant sense is left undetermined and could be either of the five senses.

Emerging from this pluralistic account of EMs is a pluralistic approach to the relation between music and emotion. This contrasts with dominant theories of musical expressiveness in the literature (e.g., arousal theories, resemblance theories, persona theories), which tend to be unitary about the relation between music and emotion, rather than pluralistic. On the latter approach, sad music can express sadness as intended by the

composer, has an appearance that is perceived to resemble the appearance of a sad person or sadness itself, be disposed to arouse sadness in the listener, or represent a certain salient content that can be appropriately described as “sad”. In all these cases, the music at issue can be described as “sad”. While a pluralistic approach to the relation between music and emotion has been previously suggested (Budd, 1985, p. 176; 1995, p. 154; Liu, 2023a), here we have seen a clear articulation of how the semantics of emotion descriptions can be used as a guide to think about EMs and the different kinds of properties that the latter attribute to music. This in turn informs us about the pluralistic nature of musical expressiveness.

## 12. CONCLUSION

The central task of the paper was to provide an analysis of emotion descriptions. As we saw, emotion terms are polysemous, exhibiting multiple related senses. The paper distinguishes seven senses: *mental*, *appearance*<sub>1</sub>, *appearance*<sub>2</sub>, *appearance*<sub>3</sub>, *dispositional*, *representational* and *constitutive*. The different senses of emotion terms, individuated by the types of properties they pick out, and their interconnectedness reveal our conception of the emotional domain. Emotions are mental states of sentient beings, with characteristic appearances in bodily comportment as expressions. Non-mental things which do not express emotions can have appearances that are perceived to resemble either those that can express emotions or emotions themselves. Focusing on their emotional impact on sentient subjects, non-mental entities are also thought to have dispositions – intrinsic or extrinsic – to arouse emotions. Emotional features of things can also transfer. Representational vehicles can inherit emotional characters from the contents they represent, and events and periods can inherit emotional characters from their constituents.

The paper also applied the semantic analysis of emotion terms to the long-standing debate concerning emotion descriptions of music in philosophy of music. The polysemy of emotion terms clearly speaks in favour of literalism over metaphorism about commonplace emotion descriptions. In addition, we saw that emotion descriptions of music can exhibit different senses of an emotion term. Emerging from this is a pluralistic approach to the relation between music and emotion.

Going beyond the case of music, our analysis of emotion descriptions provides a general framework for thinking about emotional or expressive characters of non-mental things, including those of other types of art, as well as of comportment and actions.

## ACKNOWLEDGEMENTS

I would like to thank the reviewer for helpful comments. I am also grateful for feedback from Melissa Ebbers, Luke King-Salter, and Luke Roelofs.

## REFERENCES

- Aristotle. (1984). *Metaphysics* (W. D. Ross, Trans). In J. Barnes (Ed.), *The complete works of Aristotle: The revised Oxford translation* (Vol. 2, pp. 1552-1728). Princeton University Press.
- Apresjan, J. D. (1974). Regular polysemy. *Linguistics*, 14(2), 5–32.
- Byrd, R. J., Calzolari, N., Chodorow, M. S., Klavans, J. L., Neff, M. S., & Rizk, O. A. (1987). Tools and methods for computational lexicology. *Computational Linguistics*, 13(3-4), 219–240.
- Budd, M. (1985). *Music and the emotions: The philosophical theories*. Routledge.
- Budd, M. (1989). Music and the communication of emotion. *The Journal of Aesthetics and Art Criticism*, 47(2), 129–138.
- Budd, M. (1995). *Values of art: Pictures, poetry and music*. Penguin.
- Carston, R. (2002). *Thoughts and utterances: The pragmatics of explicit communication*. Blackwell.
- Carston, R. (2021). Polysemy: Pragmatics and sense conventions. *Mind & Language*, 36(1), 108–133.
- Cochrane, T. (2010). A simulation theory of musical expressivity. *Australasian Journal of Philosophy*, 88(2), 191–207.
- Chomsky, N. (2000). *New horizons in the study of language and mind*. Cambridge University Press.

- Collins, J. (2017). The copredication argument. *Inquiry*, 60(7), 675–702.
- Davies, S. (1980). The expression of emotion in music. *Mind*, 89(353), 67–86.
- Davies, S. (2011). *Musical understandings and other essays on the philosophy of music*. Oxford University Press.
- Falkum, I. L. (2015). The how and why of polysemy: A pragmatic account. *Lingua*, 157, 83–99.
- Gabrielsson, A. (2001). Emotion perceived and emotion felt: Same or different? *Musicae Scientiae*, 5(1), 123–147.
- Gabrielsson, A. (2016). The relationship between musical structure and perceived expression. In S. Hallam, I. Cross, & M. Thaut (Eds.), *The Oxford handbook of music psychology* (pp. 215–232). Oxford University Press.
- Green, M. (2007). *Self-expression*. Oxford University Press.
- Green, M. (2008). Empathy, expression, and what artworks have to teach. In G. L. Hagberg (Ed.), *Art and ethical criticism* (pp. 95–122). Blackwell.
- Juslin, P. N. (2016). Emotion reactions to music. In S. Hallam, I. Cross, & M. Thaut (Eds.), *The Oxford handbook of music psychology* (pp. 197–214). Oxford University Press.
- Juslin, P. N., & Laukka, P. (2004). Expression, perception, and induction of musical emotions: A review and a questionnaire study of everyday listening. *Journal of New Music Research*, 33(3), 217–238.
- Juslin, P. N., & Västfjäll, D. (2008). Emotional responses to music: The need to consider underlying mechanisms. *Behavioral and Brain Sciences*, 31, 559–621.
- Kim, H. (2023). Convention and representation in music. *Philosophers' Imprint*, 23(5). <https://doi.org/10.3998/phimp.2363>.
- Kim, J. (1976). Events as property exemplifications. In M. Brand & D. Walton (Eds.), *Action theory: Proceedings of the Winnipeg conference on human action* (pp. 310–326). D. Reidel Publishing Company.
- Kivy, P. (1989). *Sound sentiment*. Temple University Press.

- Liu, M. (2021). Pain, paradox, and polysemy. *Analysis*, 8(3), 461–470.
- Liu, M. (2022). Paintings of music. *Journal of Aesthetics and Art Criticism*, 80, 151–163.
- Liu, M. (2023a). Cross-domain descriptions: The sensory and the psychological. *The Philosophical Quarterly*, 73(4), 950–964.
- Liu, M. (2023b). How to think about zeugmatic oddness. *Review of Philosophy and Psychology*. <https://doi.org/10.1007/s13164-023-00718-5>.
- Liu, M. (2023c). X-Phi and the challenge from ad hoc concepts. *Synthese*, 201(5): 1-25.
- Liu, M. (2024). Mental simulation and language comprehension: The case of copredication. *Mind & Language*, 39(1), 2–21.
- Levinson, J. (1996). Musical expressiveness. In *The pleasures of aesthetics* (pp. 90–125). Cornell University Press.
- Lopes, D. (2005). *Sight and sensibility: Evaluating pictures*. Clarendon Press.
- Matravers, D. (2001). *Art and emotion*. Oxford University Press.
- Matravers, D. (2007). Musical expressiveness. *Philosophical Compass*, 2(3), 373–379.
- Matravers, D. (2011). Arousal theories. In T. Gracyk & A. Kania (Eds.), *The Routledge companion to philosophy and music* (pp. 212–222). Routledge.
- McKittrick, J. (2003). A case for extrinsic dispositions. *Australasian Journal of Philosophy*, 81, 155–174.
- McNally, L., & Stojanovic, I. (2017). Aesthetic adjectives. In J. O. Young (Ed.), *The semantics of aesthetic judgements* (pp. 17–37). Oxford University Press.
- Ortega-Andrés, M., & Vicente, A. (2019). Polysemy and co-predication. *Glossa: A Journal of General Linguistics*, 4(1).
- Palmer, S. E., Schloss, K. B., Xu, Z., & Prado-León, L. R. (2013). Music-color associations are mediated by emotion. *PNAS*, 110, 8836–8841.
- Peacocke, C. (2009). The perception of music: Sources of significance. *British Journal of Aesthetics*, 49(3), 257–275.
- Ravasio, M. (2020). Inanimation: A network of feeling and perception. *Analysis*, 80(2), 301–309.

- Robinson, J. (2005). *Deeper than reason: Emotion and its role in literature, music and art*. Oxford University Press.
- Rodd, J. M., Gaskell, G., & Marslen-Wilson, W. (2002). Making sense of semantic ambiguity: Semantic competition in lexical access. *Journal of Memory and Language*, 46, 245–266.
- Sassoon, G. W. (2013). A typology of multidimensional adjectives. *Journal of Semantics*, 30(3), 335–380.
- Scarantino, A., & de Sousa, R. (2018). Emotion. *The Stanford Encyclopedia of Philosophy*, E. N. Zalta (Ed.). <https://plato.stanford.edu/archives/sum2021/entries/emotion/>.
- Scruton, R. (1997). *The aesthetics of music*. Oxford University Press.
- Schroeder, S. (2013). Music and metaphor. *British Journal of Aesthetics*, 53(1), 1–19.
- Sloboda, J., & Juslin, P. N. (2001). Psychological perspectives on music and emotion. In P. N. Juslin & J. Sloboda (Eds.), *Music and emotion: Theory and research* (pp. 71–104). Oxford University Press.
- Trivedi, S. (2001). Expressiveness as a property of the music itself. *Journal of Aesthetics and Art Criticism*, 59(4), 411–420.
- Trivedi, S. (2003). The funerary sadness of Mahler's music. In M. Kieran & D. McIver Lopes (Eds.), *Imagination, philosophy, and the arts* (pp. 259–271). Routledge.
- Trivedi, S. (2008). Metaphors and musical expressiveness. In K. Stock & K. Thomson-Jones (Eds.), *New waves in aesthetics* (pp. 41–57). Palgrave-Macmillan.
- Trivedi, S. (2011). Resemblance theories. In T. Gracyk & A. Kania (Eds.), *The Routledge companion to philosophy and music* (pp. 223–232). Routledge.
- Vicente, A. (2017). What words mean and express: Semantics and pragmatics of kind terms and verbs. *Journal of Pragmatics*, 117, 231–244.
- Vicente, A. (2018). Polysemy and word meaning: An account of lexical meaning for different kinds of content words. *Philosophical Studies*, 175, 947–968.
- Vicente, A., & Falkum, I. L. (2017). Polysemy. In M. Aronoff (Ed.), *Oxford research encyclopedia of linguistics*. Oxford University Press.

- Viebahn, E., & Vetter, B. (2016). How many meanings for ‘may’? The case for modal polysemy. *Philosophers' Imprint*, 16(10), 1–26.
- Wollheim, R. (1993). Correspondence, projective properties and expression in the arts. In *The mind and its depths* (pp. 144–158). Harvard University Press.
- Zangwill, N. (2007). Music, metaphor, and emotion. *Journal of Aesthetics and Art Criticism*, 65(4), 391–400.