

CROSS-DOMAIN DESCRIPTIONS: THE SENSORY AND THE PSYCHOLOGICAL

BY MICHELLE LIU 

Cross-domain descriptions are descriptions of features pertaining to one domain in terms of vocabulary primarily associated with another domain. Notably, we routinely describe psychological features in terms of the sensory domain and vice versa. Sorrow is said to be ‘bitter’ and fear ‘cold’. Music can be described as ‘happy’, ‘sad’, ‘mournful’, and so on. Such descriptions are rife in both everyday discourse and literary writings. What is it about psychological features that invites descriptions in sensory terms and what is it about the sensory that invites descriptions in terms of the psychological? Drawing on the literature on polysemy, this paper sheds light on cross-domain descriptions pertaining to the sensory and the psychological domains.

Keywords: cross-domain descriptions, sensory descriptions of psychological features, polysemy, metonymy, metaphor, emotion descriptions of music.

I. INTRODUCTION

Cross-domain descriptions are descriptions of features pertaining to one domain in terms of vocabulary primarily associated with another domain. One prominent type of cross-domain description is the use of terms for sensory properties in describing psychological features (see Ravasio 2020). The latter include thoughts, beliefs, moods, emotions, and character traits. We talk about ‘dark thoughts’ and ‘sweet delusions’. A sad mood is described as ‘blue’. Sorrow is said to be ‘bitter’, fear ‘cold’, and despair ‘black’. A person’s character can be described as ‘soft’, ‘hard’, ‘smooth’, or ‘oily’. Words like ‘sweet’, ‘cold’, and ‘soft’ are *sensory terms*, which primarily refer to sensory properties of objects. In all these examples, psychological features are described in sensory terms. Call these ‘sensory descriptions of psychological features’ (‘SPs’ for short).

SPs are not only commonplace in everyday language, but also rife in literary writings. One finds many examples in, for instance, Shakespeare. In *Romeo and Juliet* (2.2.185), Shakespeare famously describes parting as ‘sweet sorrow’, a phrase that is now common parlance. In *The Merchant of Venice*, he describes

jealousy as ‘green-eyed’ (3.2.110) and later as the ‘green-eyed monster’ in *Othello* (3.3.166). Shakespeare’s usage plausibly popularised the association between the colour green and jealousy, for which we now have the phrase ‘green with envy/jealousy’.

Going beyond conventional examples, SPs can also be novel and elaborate. Consider Emily Dickinson’s poem *I Felt a Funeral, in My Brain*, which describes an intense feeling through the imagery of a funeral.¹ It is not crystal clear what this feeling is, or at least there is no clear candidate of a conventional term to label it. Dickinson articulates this feeling through various sensory aspects of the funeral, e.g. the footsteps of mourners, the beating of a drum, the sound of lifting the coffin, procession of heavy boots, and ringing of bells. Through such sensory descriptions, the reader can get a sense that it is an overwhelming feeling of loss that disrupts the capacity of reason and is accompanied by a sense of isolation and suppression.

As the above examples of SPs illustrate, a cross-domain description involves two domains—a ‘target domain’, which is being described, and a ‘source domain’, which the description appeals to. In the case of SPs, the target domain is the *psychological* and the source domain is the *sensory*.² Standing opposite to SPs are psychological descriptions of sensory features (‘PSs’ for short), where the target domain is the *sensory* and the source domain is the *psychological*. Appearance features of inanimate things are often described in terms of vocabulary associated with the psychological domain (see Ravasio 2020).³ The upright stature of a tree is described as ‘proud’ and the red appearance of a rash on the skin is described as ‘angry’. A wide range of adjectives denoting emotions and feelings can be used to describe the sound of music: ‘anguished’, ‘agitated’, ‘angry’, ‘happy’, ‘joyful’, ‘melancholy’, ‘mournful’, ‘remorseful’, and ‘sad’. Emotion descriptions of music form a subtype of PS, where the target domain is *music* (understood as an auditory phenomenon) and the source domain is *emotion*. They feature prominently in philosophy of music in the discussion on the expressiveness of music (e.g. Zangwill 2007: ch. 2; Davies 2011; Schroeder 2013).

How is it that we can aptly describe one domain in terms of another? More specifically, what is it about the psychological that invites descriptions in terms of the sensory, and vice versa? The aim of this paper is to shed light on cross-domain descriptions pertaining to the sensory and the psychological domains. To do so, I shall primarily focus on SPs, with a particular emphasis on

¹ The poem can be found online at <https://www.poetryfoundation.org/poems/45706/i-felt-a-funeral-in-my-brain-340>.

² Psychological features of the mind are also described in terms of other domains, such as position (e.g. ‘low mood’, ‘feeling high’), size (e.g. ‘small mind’, ‘big person’), and motion (e.g. ‘racing thoughts’, ‘turbulent mind’).

³ Ravasio (2020) labels this phenomenon ‘animation’ in contrast to SPs, which he calls ‘inanimation’.

conventional SPs. A thorough analysis of SPs will illuminate the mechanisms underlying the aptness of describing the psychological domain in terms of the sensory domain. It will also provide the resources, as I show, for understanding PSs. Because the account developed to explain SPs illuminates PSs, it is unnecessary to go into much detail about the latter. Since emotion descriptions of music are an existing point of contention in the philosophy of music, I will consider these as a prime example of PSs.

Existing discussion on SPs is lacking in the literature, with the exception of a recent paper by Matteo Ravasio (2020). This paper criticises Ravasio's account and provides an alternative account. Drawing on the literature on polysemy (e.g. Apresjan 1974; Falkum & Vicente 2015; Vicente & Falkum 2017; Vicente 2018), it addresses various mechanisms by which sensory terms, whose primary senses denote sensory properties, can be used in extended senses. Emerging from the discussion on the polysemy of sensory terms is a *pluralistic account* of SPs, on which there are multiple kinds of connections between psychological features and corresponding sensory properties such that it is appropriate to describe the former in terms of the latter. Such a pluralistic account of SPs, as I shall show, also provides the resources for thinking about PSs and emotion descriptions of music in particular.

The structure of the paper is as follows. Section II critically assesses Ravasio's bipartite account (2020). Section III turns to the polysemy of sensory terms. Section IV elaborates on how the polysemy of sensory terms can motivate a pluralistic account of SPs. Section V draws implications with respect to PSs and emotion descriptions of music. Section VI concludes the paper.

II. THE BIPARTITE ACCOUNT OF SPs

Focusing on psychological states in particular, and appealing to the work of Malcolm Budd (2006) and Mitchell Green (2007), Ravasio (2020) puts forward a bipartite account of SPs:

Aptness: A sensory term t , primarily referring to a sensory property s , is apt at characterising a psychological state m insofar as t illuminates aspects of m ;

Coordination: A sensory term t illuminates aspects of m insofar as s and m can be similarly mapped onto a multidimensional coordinate system.

Let's look at each component in turn. *Aptness* draws resources from Budd's (2006) work on aesthetic descriptions, where words like 'taut', 'dynamic', and 'melancholy', whose primary senses are non-aesthetic, are deployed in their extended senses to describe aesthetic properties of artworks. According to Budd, the experience of, say, a painting as *dynamic* is such that in experiencing the painting, the subject regards the term 'dynamic' as well-suited or apt to characterise the artwork, and a term is *apt* insofar as it illuminates a property

of the artwork, which may not be apparent prior to the relevant description being made available (Budd 2006: 139–41). Ravasio (2020: 305) applies Budd's account to the case of SPs. Consider the description of sorrow as 'bitter', for instance. On this view, the experience of sorrow is such that it grounds an attitude of regarding the sensory term 'bitter', whose primary sense denotes a taste, as apt to characterise the experience; and the term 'bitter' is apt insofar as it illuminates aspects of the experience of sorrow. However, it remains to be spelt out which aspects of an experience like sorrow a sensory term illuminates.

This issue is elucidated by the second part of Ravasio's account, which appeals to Green's work (2007) on congruence of sensation and emotion. Green thinks that sensory states of different modalities as well as affective states such as emotions and moods can be described along several dimensions. He proposes three dimensions: *intensity*, *pleasantness*, and *dynamism*, along which each sensory or affective experience can be located (2007: 179).⁴ All the dimensions are thought of as capturing qualitative characters of experiences (Green 2007: 181). Using this three-dimensional coordinate system, Green explains our widely shared judgements of cross-modal congruences (e.g. brighter colours associated with higher pitches) as well as cross-domain judgements concerning the associations between sensory properties and emotions (e.g. bright colours associated with happiness, while dim colours associated with sadness) (see Spence 2011 for an empirical survey on cross-modal congruences). On Green's explanation, we can make these judgements because we have access, generally unconscious, to the three-dimensional coordinate system. A colour (e.g. yellow) and an emotion (e.g. happiness) may be judged as fitting or congruent because they are mapped onto the same or similar coordinates in the three-dimensional space.

Ravasio (2020: 306) appeals to Green's multidimensional coordinate system to illustrate 'how the description of psychological states in terms of sensory properties may elucidate our experience of such states'. On his view, 'bitter' illuminates aspects of sorrow because the coordinates in the three-dimensional space that the experience of sorrow occupies are similar to those occupied by the sensation of a bitter taste. Put differently, sorrow invites a description in terms of bitterness because they share resemblances measured along three dimensions, i.e. intensity, pleasantness, and dynamism. Such a description of the psychological state of sorrow is supposed to be 'informative of what it is like to be in that state', i.e. how intense, pleasant and dynamic the sorrow is as indicated by the coordinates of bitterness along these dimensions (Ravasio 2020: 306).

However, this bipartite account, as I argue in the rest of this section, is problematic. For the sake of argument, I shall grant that our sensory and affective experiences have multiple dimensions and can be said to qualitatively resemble

⁴ Like Green, Ravasio (2020: 306, fn2) is not committed to this particular set of dimensions.

one another as described by Green's three-dimensional coordinate system. I shall argue against Ravasio's account by problematising the *Coordination* part of the account. I argue that a sensory term t , primarily referring to a sensory property s , can illuminate aspects of a psychological state m without s , and m sharing similar coordinates in a Green-style multidimensional coordinate system. To illustrate, I give a few examples below.

Consider again the description of sorrow as 'bitter'. On Ravasio's account, this is because sorrow and bitterness are 'similarly mapped onto the coordinate system' (2020: 306). But sorrow can also be described as 'sweet', as we know from Shakespeare. Now sweetness and bitterness are clearly opposites on the *pleasantness* dimension and hence are not similarly mapped in Green's three-dimensional space, and presumably, they will occupy very different coordinates on any modified version of the multidimensional space. Although instances of sorrow may be qualitatively different, these differences are unlikely to be as extreme as that between sweetness and bitterness. So, if 'sweet' illuminates aspects of the sorrow of parting, it is not because the latter shares similar coordinates in a multidimensional coordinate system with sweetness. A more plausible explanation of Shakespeare's example is that 'sweet' describes a salient but contingent aspect of Romeo and Juliet's parting sorrow, plausibly the anticipated joy of the reunion that comes afterwards.

Consider also our sensory descriptions of anger. The prototypical scenario associated with anger consists of an offending event that angers a subject, causing the subject to have physiological effects and engage in retributive acts such as exhibiting hostility (see Lakoff & Kövecses 1987: 213–4). Anger is commonly described as 'hot' presumably because the sensory term tracks what we commonly conceive as a typical physiological and behavioural effect of anger—one's body temperature often rises when one is angered. But anger may be described as 'cold' to indicate the absence of such effects (see Lakoff & Kövecses 1987: 216). 'Hot' and 'cold' highlight certain effects of anger rather than some qualitative resemblances they bear to anger on a multidimensional coordinate system.

Furthermore, Ravasio's account cannot explain creative instances of SPs. In considering the example of 'bright grief', Ravasio writes:

[I]f grief is described to me as 'bright', I will have a clear sense of how and why grief is being inappropriately described. Resolving the disagreement would likely entail steps aimed at clarifying my interlocutor's mapping of grief and brightness.

While 'bright grief' is not common parlance, one can easily imagine it being creatively and appropriately used to describe grief, especially in literary contexts. Grief may be described as 'bright' because it can be compared to a glaring unescapable light that confronts the griever. Alternatively, 'bright' can, in some instances, highlight the aspect of grief that allows room for joy and positivity. Again, in these cases the sensory term t , which primarily refers to a

sensory property s , illuminates aspects of the psychological feature m , but not in virtue of some shared qualitative similarities between m and s as mapped onto a finite multidimensional coordinate system.

An adequate account of SPs should explain how psychological features can be aptly described in terms of the sensory domain. In doing so, one should elucidate the connection between the sensory property that the sensory term primarily denotes and the corresponding psychological feature that the sensory term describes. The second part of Ravasio's proposal is supposed to explain this connection. However, the account, as we just saw, faces clear counterexamples. In Section 4, I propose an alternative account. To do so, I first turn to the polysemy of sensory terms.

III. THE POLYSEMY OF SENSORY TERMS

It is important to note that although sensory terms like 'hot' and 'bitter' primarily refer to sensory properties, when describing psychological features, they often do not refer to sensory properties themselves but are used in extended senses. More generally speaking, apart from denoting sensory properties, sensory terms have extended *psychological* and *non-psychological* senses. For instance, 'hot' has a psychological sense meaning 'angry or furious' as in 'hot temper'; it also has a non-psychological sense meaning 'spicy' as in 'I don't like hot food'. The colour term 'red', in an extended psychological sense, can designate the emotion of anger; in an extended non-psychological sense, it can refer to communism or left-wing politics. Indeed, these extended senses are listed in the dictionary.

Given sensory terms in conventional SPs are used in extended senses, in order to address the question of why it is appropriate to describe psychological features in terms of the sensory domain, it would be helpful to turn to the different kinds of mechanisms through which a sensory term can extend to acquire a new sense. Viewed through this lens, sensory terms are *polysemous*. *Polysemy* is a common linguistic phenomenon where a word has multiple, related meanings or senses. It is distinguished from *homonymy*, where a word has multiple but unrelated meanings. Polysemes often show systematic patterns. *Metonymy* and *metaphor* are the main mechanisms for generating polysemous words (e.g. Apresjan 1974; Vicente & Falkum 2017; Vicente 2018). In the case of a metonymy-based polyseme, a word for one thing is used to denote a contiguous or related thing (e.g. 'chicken' is polysemous between an animal sense and a meat sense). In the case of a metaphor-based polyseme, a metaphor creatively draws on a similarity between two distinct things in certain respects (e.g. 'human *mouth*' vs 'river *mouth*'). In the rest of this section, I discuss how sensory terms can acquire new senses through metonymic extension (Section 3.1) and metaphorical extension (Section 3.2).

III.1 Metonymic extensions

Consider a word *t*, which has a sense that denotes S_1 . In the case of metonymic extension, *t* is extended from the sense denoting S_1 to denote S_2 , where S_1 and S_2 are related or contiguous. There are various metonymic relations, including (see Apresjan 1974; Falkum & Vicente 2015; Vicente & Falkum 2017):

- animal for meat*, e.g. ‘chirpy chicken’ vs. ‘delicious chicken’;
- count for mass*, e.g. ‘an oak’ vs. ‘made of oak’;
- part for whole*, e.g. ‘all hands on deck’;
- place names for governing bodies*, e.g. ‘No. 10 issued a statement’;
- artists for artworks*, e.g. ‘That Picasso sold for 90 million’.

Regarding the extended senses associated with sensory terms, there are also different metonymic relations. I discuss two in relation to SPs: (i) where S_1 is or is thought to be a typical effect of S_2 , and (ii) where S_1 is conventionally related to S_2 .

Let us consider (i) first. In many of these cases, a sensory term has an extended sense denoting a psychological feature S_2 and its primary sense denoting the sensory property S_1 is or is thought to be a typical effect of S_2 . Consider the polyseme ‘hot’, which has the two following psychological senses:

- ‘angry or furious’: e.g. ‘She is so hot because the meat is cold’ (Shakespeare, *The Comedy of Errors*, 1.2.47)
- ‘eager or passionate’: e.g. ‘While hot for fame, and conquest all their care’ (Homer, *Iliad*, 6.23.446).

Plausibly, the sensory property, *being hot*, is or is thought to be the typical effect of the psychological state of feeling angry and that of feeling eager. It is commonly thought that one’s body temperature rises when in either state. Similar patterns can also be observed in the extended senses of ‘red’ (meaning ‘angry’) and ‘cold’ (meaning ‘deadening’). We talk about ‘red rage’ and ‘cold fear’. In all these cases, the sensory properties, e.g. *being red* and *being cold*, are or are thought to be typical *effects* of the psychological features.

It is also worth noting that the pattern of metonymic extensions of sensory terms from their dominant sensory senses to extended psychological senses is embedded in a wider conceptual and linguistic network of thinking and talking about psychological features in terms of their typical effects (see Dancygier & Sweetser 2014: 25–30). For instance, emotions like anger and anxiety are generally talked about in terms of stereotypical effects, e.g. ‘Their blood is boiling’, ‘His veins are bursting’, and ‘She’s got butterflies in her stomach’. Many idioms are also cases of metonymy, where what we commonly regard as typical physiological effects of psychological states are used to stand for the states themselves (see also Lakoff & Kövecses 1987). ‘To have cold feet’ means ‘to become cowardly’; and ‘red mist’ means ‘extreme rage’. Consider also the idiom ‘green with envy/jealousy’, which we saw in the beginning of

the paper. Although its common usage is likely to have been popularised by Shakespeare, it plausibly highlights the perceived malignancy of jealousy since in physiological contexts the colour green is associated with sickness.

Now consider (ii)—a sensory term *t*, whose primary sense refers to a sensory property S_1 can also be extended to take on a novel sense to refer to feature S_2 when S_1 is conventionally connected to S_2 . For instance, as we already saw, the colour term ‘red’, through convention, has come to mean ‘communism or left-wing politics’ as in ‘John has red sentiments’. More generally, one might also imagine that due to some convention or social practice, members of a linguistic community associate a certain sensory property with a certain feature and eventually describe the latter using the corresponding sensory term. In the context of British politics, if a speaker utters the sentence ‘I am a true blue’, she is likely to mean that she is a devoted Tory, as the colour blue is associated with the British Conservative Party.

III.2 *Metaphorical extensions*

Aside from metonymic extension, a sensory term can also take on a novel sense through the mechanism of *metaphorical extension*. A metaphor is, minimally, a unidirectional cross-domain mapping from a *source domain* to a *target domain* alongside some dimensions of *similarity*. Regarding Shakespeare’s metaphor ‘Juliet is the sun’, sun is the source domain and Juliet the target domain. The metaphor invites the audience to take Romeo’s perspective and think of Juliet as the sun along some parameters of similarity, e.g. providing warmth and nourishment, being magnificent, and being the centre of a system in which other entities are subordinate.

Regarding metaphorical extensions concerning word meanings, we can also talk about mappings between the source domain and the target domain in terms of similarities between the two. Let ‘*t*’ be a word that has a sense that denotes S_1 . Through metaphorical extension, *t* is extended from its original sense denoting S_1 to a new sense denoting S_2 . In this case, we can think of S_1 as the source domain, S_2 as the target domain, and that S_1 and S_2 are similar in certain respects. Consider the word ‘expire’, which means ‘die’ in ‘John *expired*’ and ‘become invalid’ in ‘John’s card *expired*’. The latter sense (i.e. the target domain) is a metaphorical extension of the former (i.e. the source domain), and the relevant similarity is something coming to the end of a period. Consider also words for body parts, e.g. ‘mouth’, ‘foot’. Through metaphorical extension, they can be used to denote corresponding parts of inanimate objects, e.g. ‘river *mouth*’, ‘*foot* of the mountain’, where the relevant senses are now lexicalised, i.e. encoded by the terms in question. Human mouths (i.e. the source domain) and river mouths (i.e. the target domain) are arguably similar in terms of shape; whereas a human foot and the foot of a mountain are similar in terms of their relative low positions.

Sensory terms can also acquire new senses through metaphorical extension. In these cases, the source domain is associated with the original sense of the sensory term, i.e. the sensory domain, and the target domain is associated with the extended sense, which can be psychological or non-psychological. Here, I focus on cases where a sensory term takes on an extended psychological sense through metaphorical extension. Consider the extended meaning of ‘bitter’ as ‘grievous or mournful’. The relevant similarity between the original taste sense and the extended psychological sense is plausibly drawn along the dimension of *unpleasantness*. Grief, like a bitter taste, is unpleasant. Furthermore, the characteristic of bitter things as being hard to swallow is mapped onto the aspect of grief as being hard to accept and come to terms with. In contrast, with respect to ‘sweet’, whose extended meaning is ‘pleasing and delightful’, the relevant similarity between the original taste sense and the extended psychological sense is drawn in terms of *pleasantness*. Consider also the extended senses of various texture terms, which refer to character traits, e.g. ‘a soft/smooth/oily person’. The relevant metaphors involved in these cases home in on *non-hedonic* features (see Asch 1961). In describing someone’s character as ‘soft’, the mapping from a soft thing to a soft person is in virtue of their being similarly unable to resist external force. In describing someone as ‘smooth’, the mapping is from a smooth object to a smooth social interaction in virtue of a shared lack of imperfections – the smooth object’s having no lumps is mapped onto a person’s interactions without ineptness.

In this section, we saw that sensory terms are polysemous and can be extended to take on new psychological and non-psychological senses through the mechanisms of metonymic extension and metaphorical extension. In the next section, I show how the polysemy of sensory terms motivates a pluralistic account of SPs.

IV. A PLURALISTIC ACCOUNT OF SPs

In giving a satisfactory account of SPs and PSs, the question we are concerned with, as stated in the beginning of this paper, is why it is appropriate to describe psychological features in terms of the sensory domain and vice versa. With respect to SPs, which I have been focusing on so far, the polysemy of sensory terms provides the resources to move forward. Below, I propose a pluralistic account of SPs, on which psychological features can be aptly described in sensory terms in a variety of ways. I expound on four types of connection between psychological features and corresponding sensory properties, drawing on the discussion on the polysemy of sensory terms in the last section. I do not claim that these types of connection are exhaustive. Nevertheless, they serve as an illustration of how a pluralistic account of SPs would look. In the next section, I turn to apply the polysemy-based methodology to PSs, with a focus on emotion descriptions of music.

In discussing metonymic extension, we saw that a sensory term can have an extended psychological sense where the relevant sensory property associated with the original sense of the term is or is thought to be a typical effect of the psychological feature associated with the extended sense. So, in some cases, psychological features can be aptly described in terms of the sensory domain because the relevant sensory properties are or are thought to be typical effects of the psychological features. Examples include descriptions of anger as ‘hot’, rage as ‘red’, and fear as ‘cold’.

We also saw that a sensory term can acquire a non-psychological sense metonymically via conventional association. So in relation to this kind of lexical extension, a sensory term can aptly describe a psychological feature because the object that the psychological feature is directed towards is conventionally associated with the relevant sensory property. Consider the example ‘red sentiment’, which refers to sympathy for communism. The latter psychological state is directed towards communism and ‘red’ aptly describes the psychological state because colour red is conventionally associated with communism.

In discussing metaphorical extension, we saw that a sensory term can acquire a novel psychological sense in virtue of some perceived similarities between the sensory domain denoted by the term’s primary sense and the psychological domain denoted by the term’s extended sense. Relating to this kind of lexical extension, we describe sorrow as ‘bitter’, joy as ‘sweet’ and someone’s personality as ‘hard/soft/smooth/oily’ in virtue of the relevant cross-domain similarities. Here, it is important to note the differences between this part of the pluralistic account, drawing on the discussion on metaphorical extensions of sensory terms, and Ravasio’s account, which appeals to Green’s multidimensional coordinate system, and how the former improves on the latter. First, when a sensory term is extended from its sensory sense to a psychological sense, the sensory domain and corresponding psychological domain might share resemblances along some dimensions. But as we already saw, we need not, *pace* Ravasio/Green, fix on a limited number of dimensions. Second, unlike Ravasio’s account, the metaphorical extension at issue captures the unidirectionality inherent in SPs. When we describe psychological features in terms of sensory properties, reversing the description does not usually work—sorrow is described in terms of bitterness, but bitterness is not described in terms of sorrow. Ravasio’s proposal, appealing to Green’s multidimensional coordinate system, merely asserts that we observe similarities between two domains and hence cannot account for the relevant unidirectionality. Since metaphors and metaphorical extensions of senses themselves are inherently unidirectional—we understand one domain in terms of another—they can account for the unidirectionality of these descriptions.

While different kinds of lexical extensions of sensory terms provide the foundation for a pluralistic account of SPs, they do not exhaust all the ways a psychological feature may be aptly described using a sensory term. Consider

Shakespeare's example of 'sweet sorrow' again. As we saw earlier, regarding the parting of Romeo and Juliet, 'sweet' plausibly describes the joy of an anticipated reunion. This anticipating joy is a *salient* aspect of the parting sorrow that Romeo and Juliet experience. Thus, some sensory terms can aptly describe psychological features in virtue of describing their salient aspects.

To summarise: A sensory term *t* which primarily denotes a sensory property *S* can be aptly used to describe a psychological feature *P* in a variety of ways, including where *S* is or is thought to be a typical effect of *P*, where *S* and *P* are conventionally related, where *S* and *P* resemble in a certain aspect, or where *S* is related to a salient aspect of *P* in one of the aforesaid ways. The pluralistic account of SPs reflects our conception of the psychological domain. We conceive psychological features as multi-faceted with salient aspects, typical effects, conventional associations, and qualitative similarities to sensory properties. The communication of SPs highlights these features.

Before we conclude the discussion on SPs, I want to end this section with two important clarifications. First, the pluralistic account of SPs, which draws on the literature on polysemy, focuses primarily on conventional SPs. However, as we saw at the beginning of the paper, SPs and cross-domain descriptions in general can also be novel. While there may be a rich variety of ways in which a novel SP can be constructed, it is reasonable to think that the same mechanisms, which underlie the formation of the different senses of a sensory term, e.g. metonymic and metaphorical relations, also underlie novel SPs.

Second, it is also worth thinking about how a hearer comprehends SPs. With conventional cross-domain descriptions (e.g. 'John is so *bitter* these days'), since the relevant extended senses of the terms are lexicalised, the hearer is likely to retrieve the relevant senses immediately. In contrast, the comprehension of a non-conventionalised cross-domain description requires pragmatic inference. Consider the following example:

Juan and Sarah, who are colleagues, are engaging in a conversation about who in the managerial team is best at resolving disputes and damping down collegial conflicts. Juan thinks Jyoti, the head of human resources, is the person. Juan says the following to Sarah: 'Jyoti is definitely the *cooling* person in the office.'

In making the utterance to Sarah, Juan conveys his conviction that Jyoti is the person who is good at dissolving tension in the office. The literal meaning of 'cooling' is 'making less warm'. On a relevance-theoretic framework (e.g. Sperber & Wilson 1995; Carston 2002), we can think of Juan as using the lexically encoded concept COOLING to communicate a non-lexicalised *ad hoc* concept COOLING*, which roughly denotes the property of *being good at dissolving tensions*. But how does Susan understand Juan's utterance? Sarah can latch onto the intended meaning of Juan's utterance, including the intended meaning of the novel SP 'cooling person', by relying on her encyclopaedic knowledge. Given the discourse at issue concerns who is good at dissolving tensions,

encyclopaedic knowledge that tension is associated with heat and that dissolving tension is like lessening heat is highly activated. Sarah can then infer that Juan thinks Jyoti is good at dissolving tensions.⁵

V. EMOTION DESCRIPTIONS OF MUSIC

Our discussion of sensory descriptions of psychological features can naturally be extended to explain psychological descriptions of sensory features (i.e. PSs). Like SPs, PSs are often conventional. Consider psychological descriptions of appearance features of inanimate objects. The imposing stature of a tree is commonly described as ‘proud’ and the turbulent appearance of a sea is routinely described as ‘angry’. In these cases, the relevant psychological terms are also polysemous, where the extended senses are lexicalised and no longer refer to psychological features themselves. To understand how, say, appearance features of objects can be described in psychological terms, a helpful starting point is to probe into the mechanisms through which a psychological term can extend to acquire new senses. Such an investigation, as in the case of sensory terms, has the potential to uncover the kinds of connection that appearance features relate to psychological features and consequently shed light on the question of why the former can be described in terms of the latter. In the rest of this section, I shall focus on a particular type of PS, i.e. emotion descriptions of music, and illustrate how our discussion on SPs can provide a framework for analysing such descriptions.

As mentioned in the beginning of the paper, emotion descriptions of music (‘EMs’ for short) form a philosophically interesting type of cross-domain description and have given rise to much discussion in the philosophy of music concerning the expressiveness of music. Similar questions can be asked about EMs as were asked about SPs above: What is it about music such that it invites descriptions in emotion terms? Why can features of music be appropriately described in terms of the emotional domain? While the philosophical discussion on musical expressiveness goes beyond answering these questions concerning EMs (see Matravers 2007),⁶ the linguistic issue about EMs is nevertheless closely tied to the topic and has generated much discussion. Crucially, philosophers have debated about how best to understand the semantics of EMs, where the divide is often construed as between *literalists* (see Matravers 2001: 146; Davies 2011: ch. 2), who take EMs to be literal, and *metaphorists*, who

⁵ For a detailed discussion on how a hearer constructs an *ad hoc* concept intended by the speaker, see Carston (2002: ch. 5; 2010).

⁶ Concerning musical expressiveness, one can ask, for instance, an experiential question—‘What is it to hear music as expressing an emotion?’, or a quality question—‘What is it about music such that it causes us to hear it as expressing an emotion?’ (see also Boghossian 2010: 71). These are not semantic questions concerning the meanings of EMs.

take them to be metaphorical and literally false (Scruton 1997: 154; Zangwill 2007: 393).

Given our discussion on SPs, we can draw important implications with respect to EMs. First, emotion terms, like sensory terms, are polysemous—having multiple but related senses. Although emotion terms primarily refer to emotions, which are psychological states of subjects, they are also used in extended senses where these senses are conventionalised, e.g. ‘sad face’ and ‘angry rash’. Given many EMs are part of ordinary parlance (e.g. ‘sad/happy/joyful music’), emotion terms commonly used to describe music are plausibly used in extended but conventionalised senses. Put differently, the relevant senses that apply to music are often lexicalised, i.e. encoded by the corresponding emotion terms. This should speak in favour of the literalist’s position that at least many EMs are literal (see Davies 2011: ch. 2).⁷

Second, given that emotion terms are polysemous, it is important to probe into the different senses of emotion terms in order to determine which senses are relevant to EMs. As in the case of SPs, it would be useful to see how an emotion term can acquire extended senses through various mechanisms. Here are some plausible initial suggestions. For instance, through metonymic extension, an emotion term can be extended from the original sense of denoting an emotion (e.g. ‘Jane is sad’) to an extended sense that refers to the *expression or manifestation of an emotion* (e.g. ‘Jane’s face is sad’). Through metonymic extension, an emotion term can also be extended to refer to *having a disposition to arouse a certain feeling*, e.g. ‘Not being able to feed one’s children is sad’ where ‘sad’ means something like ‘disposed to arouse sadness’. Emotion terms can also acquire novel senses through metaphorical extension in virtue of some similarities between the original sense and the extended sense. Consider the phrase ‘angry rash’, where ‘angry’ means ‘inflamed or red’ and describes the appearance of a rash. The latter appearance is thought to be similar to the appearance of an angry person, which we also describe as ‘angry’. Through metaphorical extension, the sense of ‘angry’ that refers to the expression of anger as in ‘angry face’ is extended to refer to the red or inflamed *appearance* of an inanimate thing as in ‘angry rash’.

Now, some of the aforementioned senses also underlie instances of EMs. For instance, as many theorists have argued, music that we call ‘sad’ often resembles the appearance of a sad person (including movement, voice, etc.) (e.g. Davies 1980; Kivy 1989; Peacocke 2009; Schroeder 2013). We can also describe a piece of music as ‘sad’ because it is disposed to arouse a sad feeling

⁷ The distinction between literalism and metaphoricism is not always clearly drawn. When a metaphor is conventionalised, we have an instance of ‘dead metaphor’. One can maintain that EMs are literal while taking the relevant sense of the emotion term to be metaphorical in origin, as we shall see below (see Schroeder 2013 for a similar suggestion). In order to draw a clear distinction between literalism and metaphoricism, metaphoricism should be understood as the position that EMs are live metaphors and hence non-literal.

in the listener. Since emotion terms can be extended to have many senses that do not refer to emotions themselves, a pluralistic account of EMs is likely to emerge. Relatedly, music and emotion may be connected in a variety of ways that license our descriptions of music in emotion terms.⁸ Such a pluralistic approach has been suggested by Budd (1985: 176; 1995: 154). While a full discussion on EMs and how the latter can shed light on philosophical theories of musical expressiveness awaits another occasion, I have shown here that the discussion on SPs can aid us in thinking about the semantics of EMs and the potential connections between music and emotion.

VI. CONCLUSION

The central task of this paper has been to shed light on cross-domain descriptions concerning the sensory and psychological domains. Focusing on SPs, I have provided an analysis of SPs and addressed why it is appropriate to use sensory terms to describe psychological features. Through discussing the polysemy of sensory terms and the different mechanisms through which a sensory term can acquire new senses, I put forward a pluralistic account of SPs on which psychological features can be aptly described in terms of the sensory domain in a variety of ways. The discussion here not only reveals important aspects of our conceptions of psychological features and their relation to the sensory domain, but also has important ramifications with respect to understanding other types of cross-domain descriptions including, first and foremost, psychological descriptions of sensory features. With regards to the latter, I showed how the discussion on SPs can shed light on the debate in philosophy of music concerning emotion descriptions of music.

ACKNOWLEDGEMENTS

Thanks to Matteo Ravasio for discussion on an early version of this paper. I am also grateful for comments from the two reviewers. This research was funded by the Leverhulme Trust Early Career Fellowship ECF-2021-539.

REFERENCES

Asch, S. E. (1961) 'The Metaphor: A Psychological Inquiry', in M. Henle (ed.) *Documents of Gestalt Psychology*, 324–33. Berkeley, CA: University of California Press.

⁸ For instance, sad music can arouse sadness, resemble the appearance of a sad person, or represent a person or scene that can be appropriately described as 'sad'. In all these cases, the music at issue can be described as 'sad'.

- Apresjan, J. D. (1974) 'Regular Polysemy', *Linguistics*, 14: 5–32.
- Boghossian, P. (2010) 'The Perception of Music: Comments on Peacocke', *The British Journal of Aesthetics*, 50: 71–6.
- Budd, M. (1985) *Music and the Emotions: The Philosophical Theories*. London: Routledge.
- (1995) *Values of Art: Pictures, Poetry, and Music*. London: Penguin.
- (2006) 'The Characterization of Aesthetic Qualities by Essential Metaphors and Quasi-Metaphors', *British Journal of Aesthetics*, 49: 133–43.
- Carston, R. (2002) *Thoughts and Utterances: The Pragmatics of Explicit Communication*. Oxford: Blackwell.
- (2010) 'Metaphor: Ad Hoc Concepts, Literal Meaning and Mental Images', *Proceedings of the Aristotelian Society*, 110: 295–321.
- Dancygier, B. and Sweetser, E. (2014) *Figurative Language*. New York, NY: CUP.
- Davies, S. (1980) 'The Expression of Emotion in Music', *Mind*, 89: 67–86.
- (2011) *Musical Understandings and Other Essays on the Philosophy of Music*. Oxford: OUP.
- Falkum, I. L. and Vicente, A. (2015) 'Polysemy: Current Perspectives and Approaches', *Lingua*, 157: 1–16.
- Green, M. (2007) *Self-Expression*. Oxford: OUP.
- Kivy, P. (1989) *Sound Sentiment*. Philadelphia, PA: Temple University Press.
- Lakoff, G. and Kövecses, Z. (1987) 'The Cognitive Model of Anger Inherent in American English', in D. Holland and N. Quinn (eds), *Cultural Models in Language and Thought*, 195–221. Cambridge: CUP.
- Matravers, D. (2001) *Art and Emotion*. Oxford: OUP.
- (2007) 'Musical Expressiveness', *Philosophy Compass*, 2: 373–9.
- Peacocke, C. (2009) 'The Perception of Music: Sources of Significance', *The British Journal of Aesthetics*, 49: 257–75.
- Ravasio, M. (2020) 'Inanimation: A Network of Feeling and Perception', *Analysis*, 80: 301–9.
- Schroeder, S. (2013) 'Music and Metaphor', *The British Journal of Aesthetics*, 53: 1–20.
- Scruton, R. (1997) *The Aesthetics of Music*. Oxford: OUP.
- Spence, C. (2011) 'Crossmodal Correspondences: A Tutorial Review', *Attention, Perception, and Psychophysics*, 73: 971–95.
- Sperber, D. and Wilson, D. (1995) *Relevance: Communication & Cognition*, 2nd edn. Oxford: Blackwell.
- Vicente, A. (2018) 'Polysemy and Word Meaning: An Account of Lexical Meaning for Different Kinds of Content Words', *Philosophical Studies*, 175: 947–68.
- Vicente, A. and Falkum, I. L. (2017) 'Polysemy', in M. Aronoff (ed.) *Oxford Research Encyclopedia of Linguistics*. New York, NY: OUP.
- Zangwill, N. (2007) 'Music, Metaphor, and Emotion', *Journal of Aesthetics and Art Criticism*, 65: 391–400.

Philosophy, University of Hertfordshire, UK