

Multimodal cognitive operations in classical music

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Abstract

This work explores the net of conceptual mechanisms structuring musical understanding. Classical music has been mainly approached in Cognitive Linguistics from the perspective of Conceptual Blending Theory (CBT). However, this article claims that CBT offers an insufficient explanation of multimodal phenomena since (a) it does not specify the degree of integration between inputs or (b) the principles regulating the integration. In order to fill these theoretical gaps, this article offers a twofold analysis of two case studies of program classical music, musical compositions intended to evoke images or remind the listener of events. First, I analyze the network of conceptual integration patterns structuring their multimodal expression. For that purpose, I introduce the *Multimodal Conceptual Integration Model* (MCIM). Second, I address the patterns of conceptual interaction between metaphor and metonymy. The results of the analysis expand previous research on multimodal metaphor, including metaphoric amalgams and different patterns of interaction between metaphor and metonymy.

Keywords: conceptual integration, image schema, metaphoric amalgam, multimodal metaphor, program music.

Resumen

Este trabajo explora la red de mecanismos conceptuales que estructuran el pensamiento musical. La música clásica se ha estudiado en Lingüística Cognitiva principalmente desde la perspectiva de la Teoría de Integración Conceptual (TIC). Sin embargo, este artículo defiende que TIC ofrece una explicación insuficiente al fenómeno multimodal puesto que (a) no especifica los grados de integración entre elementos o (b) los principios que regulan la integración. Para cubrir estas dos lagunas teóricas, este artículo ofrece una análisis doble de dos estudios de caso de música clásica programática, piezas musicales compuestas para evocar imágenes o escenas. En primer lugar, analizo la red de patrones de integración conceptual que estructuran la expresión multimodal. Con ese propósito, presento el Modelo de Integración

Conceptual Multimodal (MICM). En segundo lugar, me refiero a los patrones de interacción conceptual entre metáfora y metonimia. Los resultados de estos análisis amplían investigaciones previas en metáfora multimodal, así como en amalgamas metafóricas y en patrones de interacción entre metáfora y metonimia.

Palabras clave: amalgama metafórica, esquema de imagen, integración conceptual, metáfora multimodal, música programática.

1. Introduction

“Words move, music moves
Only in time; but that which is only living
Can only die. Words, after speech, reach
Into the silence. Only by the form, the pattern,
Can words or music reach
The stillness...”

T.S. Eliot, *Burnt Norton*

This work strives to shed light on the vast and unexplored area of the net of conceptual mechanisms underlying musical understanding. Classical music, in a similar fashion to other creative multimodal contexts, has been approached in Cognitive Linguistics (CL) mainly from the point of view of Conceptual Blending Theory (CBT; Fauconnier and Turner, 2002; for an application to the study of verboaudial examples, cf. Zbikowski 2002, 2009).

The first goal of this paper is to prove CBT insufficient for this purpose in at least two respects: first, because it does not offer a clear specification of the degree of merging between the inputs, or of the different implications that variances in conceptual integration have in the construction of meaning. Second, because it does not specify either the defining traits of conceptual integration or the licensing or restricting mechanisms that govern this process. In consequence, this article takes sides with the application of Conceptual Metaphor Theory (CMT, Lakoff and Johnson 1980; later relabeled as the Contemporary Theory of Metaphor, CTM, Lakoff 1993) to the exploration of multimodal contexts. In Forceville (2009a: 24), a *multimodal metaphor* is described as “a metaphor whose source and target domains are rendered exclusively or predominantly in different modes”. However, the development of a robust theory of multimodal metaphor still needs further development in two important aspects: (a) a taxonomy of *multimodal conceptual integration* patterns is needed in order to explore the structure of the multimodal manifestation, which underlies the workings of an inference-triggering mechanism such as metaphor and (b) a model of *multimodal*

conceptual interaction (i.e., patterns of interaction between metaphor and metonymy and the so-called *metaphoric amalgams*, a conceptual complex which consists in the principled integration of a metaphor into the source-target layout of another metaphor), which endows the multimodal message with richer implications.

In this connection, the second goal of this paper is to provide ample evidence to fill these two theoretical gaps. In order to establish a paradigm to identify the different degrees of conceptual integration and the principles regulating this process I propose the Multimodal Conceptual Integration Model (MCIM). Additionally, I claim that the creative combination of multimodal inputs (in this case, verbal and audial) is largely guided and constrained by the interaction of two conceptual complexes (originally formulated to account for linguistic phenomena): *multimodal metaphor in interaction with metonymy* (Ruiz de Mendoza 2000) and *metaphoric amalgams* (Ruiz de Mendoza and Pérez 2011). In order to support these hypotheses, I have carried out two case studies where music and text combine in a creative manner. Although there are no precedents in studies on verboaudial metaphor in interaction with metonymy, there is enough common ground to justify this eclectic approach (cf. Forceville and Uriós-Aparisi 2009 and references therein). By applying the same theoretical tools to the exploration of the verboaudial domain, this work ultimately seeks to develop a unified account of multimodal metaphoric and metonymic meaning and use.

This paper is structured as follows. In Section 2, I offer some analytical vocabulary; in particular, a critical overview of the notions of *mental space* and *conceptual blending* (2.1), *image schema* (2.2), and *conceptual metaphor* and *metonymy* (2.3). The patterns of interaction underlying metaphorical and metonymic operations are also outlined (2.4), and the specifics of their potential application to multimodal environments initially assessed (2.5). In Section 3, I formulate my own proposal on conceptual integration by introducing the Multimodal Conceptual Integration Model (MCIM). This new paradigm for describing and representing conceptual integration in multimodal environments is shown to be capable of providing an explanation for issues that were either overlooked or simply left unanswered by previous accounts. Section 4 includes two case studies: in each of them, I first describe the nature of the conceptual integration between music and text on the basis of common image-schematic grounds. I subsequently turn to account for the metaphoric and metonymic relationships structuring the multimodal network brought up by music and text in classical music. As shall become apparent in the ensuing discussion, these patterns of interaction contribute to the narrative unfolding of the musical work. Finally, I retrieve the main proposals of this paper in Section 5 and suggest some research areas that may be in need of further consideration.

2. Some basic analytical notions

2.1. The CBT view on conceptual integration

The complex issue of conceptual integration between music and text has been traditionally discussed from the standpoint of CBT (Fauconnier and Turner 2002, on previous works over the nineties). The research undertaken by Zbikowski (2002-2009) has approached the relation between text and music as a *conceptual blend*, where there is a set of interconnected conceptual packages called *mental spaces*. In classical music, Zbikowski (2002: 82) points out that there are at least two *input spaces*, one comprised by the music and the other by the text. They must share some kind of conceptual material in an external *generic space* for the integration to take place, such as the understanding of music and text as objects in relation within a given teleological framework. Additionally, each of these input spaces needs to grant, at least, a novel property to the hybrid or *blended space* that the other inputs do not have. This novel emergent conceptual space counts on the potentiality to develop novel properties not present in any of the input spaces: for instance, the understanding of pitches as objects that can move, thereby connecting a sound to physical motion, such as a descent. However, it is not specified where these emergent properties stem from.

The excessive explanatory power of blends has been found to be vulnerable to criticism, as concluded by Câmara-Pereira (2007: 67), “there seems to be no specific set of rules for analyzing blends other than intuition”. CBT posits several problems, mainly concerned with an unsatisfactory insight on specific phenomena. For instance, (1) what makes some mental spaces more prone to blend than others?; (2) where does the novel structure that appears in the blended space originate, if it is not generated in either of the input spaces?; (3) what are the principles that regulate the conceptual integration between mental spaces?; and (4) how many different blends can we encounter on the basis of the degree of conceptual integration?

2.2. Image schemas

Johnson (1987) and Lakoff (1987) have theoretically formalized the construct of *image-schemata* as a set of repeated physically-grounded patterns of experience that operate beneath the conceptual level, i.e., a sort of “cognitive unconscious” (Lakoff and Johnson, 1999). Their direct and universal meaning makes them good candidates as source domains of conceptual metaphors. For instance, our understanding of motion arises from the PATH schema. This schema is grasped in the early childhood

out of motion experiences between two places (starting and ending point) along the horizontal plane. Conceptual domains, such as that of journeys, inherit this skeletal structure, which in turn furthers the understanding and drawing of inferences of much more abstract domains, such as LOVE, LIFE or CAREERS (as illustrated by expressions such as “Our relationship is going nowhere”, “Life is a path full of suffering”, and “He is moving towards promotion”, respectively). Image-schemata provide the means to structure abstract concepts on the basis of embodied experiences, and are largely pervasive across cultures (for an application to global communication, see Pérez-Hernández 2011, 2013a,b).

Music offers a prolific domain to study non-verbal metaphor and metonymy, given that humans do not count on a robust way of conceptualizing musical space and motion without metaphor. The present proposal adheres to Johnson and Larson’s thesis (cf. Johnson and Larson 2003: 69, in their work on linguistic metaphorical renderings of musical motion), which has evidenced that the key musical metaphors are grounded in the conceptualization of our bodies as objects that purposefully move within a landscape. At this point, it is worth noting that two or more schemas can interact in order to call up more complex metaphorical meanings. Observe, for instance, the existing correlation between the schema under scrutiny (i.e., PATH) and other schemas such as those of OBJECT and FORCE. Among the most relevant entailments of the PATH schema (as captured in Johnson 1987) we encounter that: (1) motion requires an *object* that moves, (2) motion takes place along a *path*, (3) other forces (gravity, inertia, etc.) determine the *manner* of motion, and (4) the end of the path may or may not coincide with the goal or the destination of the motion.

Additional support for this view in connection to music is to be found in Brower (2000: 325), who has pointed out that “each image schema serves as a template upon which can be mapped the concrete patterns of musical work”, thereby paving the way for postulating the existence of *musical image schemas*. Brower’s (2000) extensive inventory of image schemas provides evidence on the way many aspects of tonal organization are shaped by underlying image-schematic structure. Moreover, it lends plausibility to the claim that musical thought has a highly embodied nature, and also that it is essentially metaphoric.

2.3. Metaphor and metonymy

Right at the origin of CL, Lakoff and Johnson (1980) strongly emphasized the central role of metaphor in the embodiment of thought, its linguistic expression just being a subsidiary matter. For the sake of clarity, it is sufficient to describe here a metaphor as a cross-domain conceptual mapping that partially structures the

understanding of one domain (target domain) in terms of another domain (source domain) (for a detailed account, see Lakoff and Johnson 1980, Lakoff 1993, Gibbs 1994). Therefore, our conceptualization of the notion of musical objects within space (“The soloist is waiting to enter in measure 4”) and musical motion (“Here comes the recapitulation”) is largely a metaphorical extension of our most basic bodily experience of physical motion through space.

Johnson and Larson (2003) have already made a compelling argument for the metaphoric nature of our understanding of musical motion. They have detected three common conceptual metaphors underlying verbal descriptions of musical motion: MUSICAL OBJECT, MUSICAL SPACE and MUSICAL MOTION although they have exclusively focused on verbal utterances describing musical motion. This paper further expands their original proposal by addressing these metaphors in multimodal expression and in interaction with other tropes (namely, metaphors and metonymies).

The definition of the boundaries between metaphor and metonymy has been center of a heated debate over the past decade (cf. Barcelona 2000, 2011; Barcelona, Benczes and Ruiz de Mendoza 2011; Kövecses 2002; Radden 2000; Ruiz de Mendoza 2011). For the present purposes, suffice it to say that the generally accepted difference with metaphor is that metaphorical mappings are carried out across discrete conceptual domains (e.g., love relationships and journeys in the LOVE IS A JOURNEY metaphor, as in “Our relationship isn’t going anywhere”) while in metonymy the mapping is made within the same domain (e.g., AUTHOR FOR WORK metonymy in “Shakespeare is easy to read”, where an author’s literary production is part of our knowledge about the author).

In one recent development of metonymy theory, Ruiz de Mendoza (2000, 2002) has proposed two basic categories of metonymy in terms of target and source-domain inclusion. As will be evidenced below, these metonymic patterns adequately fit into the study of multimodal combinations occurring in classical music. Regarding the metonymic relationship established between the matrix (or most encompassing) domain and one of its subdomains, two categories of metonymy emerge: (a) SOURCE-IN-TARGET metonymy, where the subdomain (source) affords access to the matrix domain (target) through an *expansion* process (e.g., AUTHOR FOR STYLE, as in “He is so Picasso he kinda looks like a snowflake”, where “Picasso” stands for the manner in which Picasso used to paint); and (b) TARGET-IN-SOURCE metonymy where, conversely, a *reduction* process highlights a subdomain (the target) over the whole matrix domain (source) (e.g. AUTHOR FOR WORK, as in “Shakespeare is easy to read”, where “Shakespeare” stands for the work written by Shakespeare).

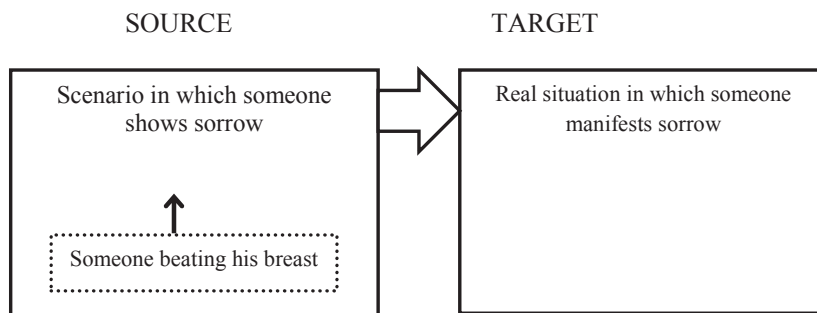
This distinction, which is controversial for some scholars (e.g. Panther and Thornburg 2007, Barcelona 2011), gives pride of place to whole-part/part-whole cognitive configurations over part-for-part ones. As noted in Ruiz de Mendoza (2007), and Geeraerts and Peirsman (2011), it underlies a number of semantic and communicative phenomena, among them those pertaining to metaphor and metonymy in interaction, whether in the verbal or in the multimodal domains (cf. Uriós-Aparisi 2009, Hidalgo and Kraljevic 2011). However, this does not discard the possibility of postulating part-for-part metonymies: that is the case of the expression “The gun killed him”, where the instrument and the agent are not in a domain-subdomain relationship.

2.4. Metaphoric complexes

Apart from the isolated workings of metaphor and metonymy, this study pursues an additional level of enquiry, namely, the interactional dimension of metaphor with other tropes. Goossens (1990) set the departure point to deal with the different ways in which metaphor and metonymies may interact. His initial proposal was later expanded by Ruiz de Mendoza (2000) into a fully-fledged system of interaction patterns between both tropes, which has been framed under the generic label of *metaphoric complex* (Ruiz de Mendoza and Pérez 2011). The two types of metonymic mapping presented above, expansion and reduction, yield six possible patterns of interaction in its most recent refinement: (1) *metonymic expansion of the metaphoric source*, (2) *metonymic expansion of a correspondence of the metaphoric source*, (3) *metonymic expansion of the metaphoric target*, (4) *metonymic expansion of a correspondence of the metaphoric target*, (5) *metonymic reduction of a metaphoric source*, and (6) *metonymic reduction of a correspondence of the metaphoric target*. Due to space constraints, I offer an illustrative example of the first of the examples, *metonymic expansion of the metaphoric source*. Consider the following sentence: “He beat his breast about his marital infidelity”, in a context in which there is no actual breast-beating, but only an ostensive manifestation of sorrow. As noted in Barcelona (2011), examples of this kind are instances of metaphor motivated by the decontextualization of an original metonymy in which beating one’s breast was carried out in the context of showing sorrow for one’s misdeeds. The metonymy from breast-beating to showing sorrow by breast-beating thus grows into a metaphor whose target is a situation where someone can make an open show of sorrow without actually beating his breast. This analysis ties in with the one offered in several studies by Ruiz de Mendoza and his collaborators (cf. Ruiz de Mendoza 2000, 2002, Ruiz de Mendoza and Díez 2002, and Ruiz de Mendoza and Galera 2011), who claim that the metaphoric source for this type of expression is structured on the basis of a source-in-target metonymy whereby beating one’s breast stands for beating one’s breast to show sorrow. This metonymic target becomes the source of a metaphor that maps onto

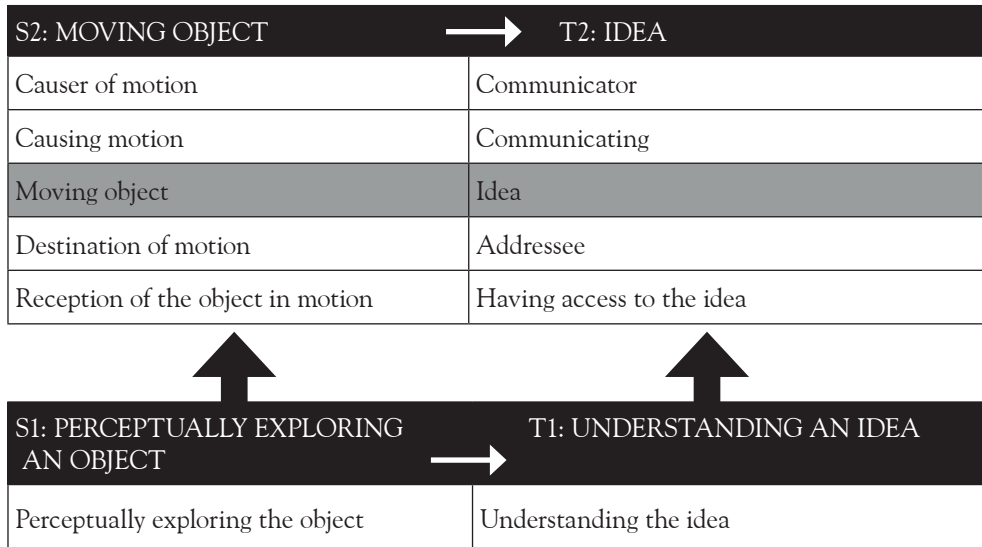
a target situation in which the speaker regretfully shows his sorrow (not by breast-beating) in order to avoid any other undesired consequences of his behavior (see Figure 1). The reader is referred to Ruiz de Mendoza (2000, 2002), Ruiz de Mendoza and Díez (2002) and Ruiz de Mendoza and Galera (2011) for a full description of each of the other patterns.

Figure 1. Metonymic expansion of the metaphoric source in “He beat his breast about his marital infidelity” (white arrow for metaphoric mapping; black arrow for metonymic mapping).



In addition, recent studies have acknowledged the existence of *metaphoric amalgams*. Amalgams are a development of Lakoff and Turner's (1989) original notion of metaphor composition, which they define as the “simultaneous use of two or more [...] metaphors in the same passage, or even in the same sentence” (1989:70 ff). Amalgams, however, refer to one aspect of composition, which is the principled integration of two metaphors into a single one within the same linguistic expression (Ruiz de Mendoza and Pérez 2011). There are two kinds of such metaphoric combinations. In *single-source metaphoric amalgams* a metaphor is constructed in the source-target structure of another metaphor. By way of illustration, “She got the idea across to me” (Ruiz de Mendoza and Pérez 2011) needs to incorporate UNDERSTANDING AN IDEA IS PERCEPTUALLY EXPLORING AN OBJECT in the metaphoric layout of IDEAS ARE (MOVING) OBJECTS for the sentence to be successfully interpreted. The basic structure of the conceptual metaphor IDEAS ARE (MOVING) OBJECTS allows for the interpretation of an idea as an object in forward motion along a path. The conceptualization is further developed by a secondary metaphor, which relates the way in which the observer interacts with the object in motion (the idea). See Figure 2 for a schematic overview.

Figure 2. Single-source metaphoric amalgam in “She got the idea across to me” (white arrows for metaphoric mappings)



The second kind of amalgam consists of two source domains mapped onto a single target domain. The double-source metaphoric amalgam in “He slapped some sense into me” (cited in Ruiz de Mendoza and Mairal 2011) conflates the target domain of AN EFFECTUAL ACTION IS CAUSED-MOTION and ACQUIRING A PROPERTY IS RECEIVING A MOVING OBJECT into only one domain (i.e., “me”). The effectee is at the same time the destination of the caused-motion and the receiver of a new property (the acquisition of some sense, seen as a moving object). In a subsidiary way, there is a third metaphor (the destination is seen as a container) that does not map directly onto the effectual action target domain. Therefore this metaphor does not belong to the amalgam proper, but it facilitates seeing the effectee as the possessor of the moving object (since whatever moves into a person can easily be seen as his or her possession). In Ruiz de Mendoza and Galera (2011), this kind of metaphorical operation is labeled *metaphorical chain*. In a metaphorical chain the target of a metaphor becomes the source for another metaphorical target. The sentence triggers an array of implications as captured in *Figure 3* below.

Figure 3. Double-source metaphoric amalgam in “He slapped some sense into me” (white arrows for metaphoric mappings).

SOURCE 1: Caused-Motion	TARGET: / Acquiring a property	SOURCE 2: Receiving a moving object
	Effector ('he')	
Causer of motion	Effecting ('cause to acquire')	
Destination of motion	Effectee ('me')	New possessor of an object
Object of caused-motion (moving object)	The new property of 'having some sense'	
	Resultant state (acquiring the new property of having some sense)	Gaining possession of an object
Manner of causing motion	Manner of effecting (slapping)	

2.5. The shift towards multimodality

Although originally conceived to explain linguistic phenomena, the categorization in terms of source and target domains for metaphor seems likewise adequate to study combinations between metaphors in multimodal contexts. There is already a substantial body of evidence based on the analysis of multimodal data that supports the importance of metaphor and metonymy (and their interaction) in the visual realm (for an application of *metaphonymy*, see Uriós-Aparisi 2009, Hidalgo and Kraljevic 2011). In fact, this kind of work points to the productivity of applying analytical insights from verbal communication (within linguistic studies) to non-verbal and even multimodal communication. However, the study of the role played by text and music in the construction of multimodal metaphors is still scarce (with the exception of Forceville 2009b: 383 ff.). Likewise, to the best of our knowledge, there is yet no published research work on verboaudial metonymies (although there is some preliminary literature on verbopictorial metonymies, see Forceville 2009c; Uriós-Aparisi 2009; Hidalgo and Kraljevic 2011).

In order to advance our knowledge on the specifics governing non-verbal manifestations of metaphor, the application of the *equipollence hypothesis* (Ruiz de Mendoza and Mairal 2011) arises as an essential methodological principle. By means of this working assumption, the analyst needs to find whether linguistic processes that have been attested in one domain of linguistic enquiry may also be (at least partially) active in other domains. The application of the equipollence hypothesis within the Lexical Constructional Model (LCM; Mairal and Ruiz de Mendoza, 2009; Ruiz de Mendoza and Mairal, 2011) has allowed the identification of metaphor and metonymy in various degrees of abstraction and in interaction (the so-called *metaphoric complexes* and *metaphoric amalgams*) as underlying inferences and other kinds of construal at both argument structure and higher levels of linguistic description (e.g.

pragmatic implication, illocutionary meaning and discourse). In this connection, the application of the *equipollence hypothesis* in a reverse way, i.e. from non-verbal to verbal communication, makes it possible to enhance the scope of current verbal-based accounts of these two tropes in CL. In this line, this work contributes to further the body of knowledge on the conceptual theory of metaphor and of metonymy by looking at multimodal manifestations of these types of mappings.

3. The multimodal conceptual integration model (MCIM)

Metaphorical identification in multimodal contexts is different from its identification in monomodal communication, inasmuch as the nature of the metaphorical “B IS A” relationship is non-verbal. In addition, in multimodal manifestations of metaphor, conceptual integration based on either the *substitution* or *addition* of conceptual material to target elements is very frequent (Forceville 2009b, Uriós-Aparisi 2009).

In order to establish a paradigm to identify the different degrees of conceptual integration, I propose the *Multimodal Conceptual Integration Model* (henceforth MCIM), which elaborates on Ruiz de Mendoza’s notion of “conceptual integration”. Ruiz de Mendoza (2011: 108) describes conceptual integration as “the combination and/or merging of conceptual structure from any number of cued items”. Although initially formulated to explain phenomena within the linguistic realm, I argue that Ruiz de Mendoza’s proposal sets a valuable starting point to develop an expanded model of conceptual integration in multimodal environments. On the grounds of the *equipollence hypothesis* (already introduced in section 2.5), the application of this model to account for verbal examples is also feasible (yet with some logical limitations, since integration networks are more productive within multimodal environments).

The MCIM parallels the rationale of Reddy’s (1979) *conduit metaphor*, according to which meaning is contained in words. As Lakoff and Johnson put forward (e.g. Lakoff and Johnson 1980, Johnson 1987, Lakoff 1993), the notion of CONTAINER is a central human schema given that we experience containment through our own bodies. This schema, on which the MCIM is constructed, helps to understand music in terms of objects in space, which is but a pre-requisite for the conceptualization of musical motion. Given this state of affairs, the elements that are integrated in a musical excerpt are here understood as (1) objects containing meaning, (2) objects that may be in motion, and (3) objects that may be nested into larger ones (adapted from Johnson 1987).

According to the MCIM, conceptual integration can actually take place along two different axes: the *degree of integration* of the elements involved and the *dependency relationship* established between those elements.

Regarding the *degree of integration* we may encounter two different possibilities: (a) *conceptual disintegration*, a cover term already coined by blending theorists such as Turner (2001) and Fauconnier and Turner (2002) to designate a partial selection of the existing conceptual structure, and (b) *conceptual integration* between existing conceptual structures.

The proper theoretical account of *conceptual disintegration* from the view of multimodal metaphor in interaction with metonymy deserves another paper. However, a few remarks on this topic are in order for the sake of discussion. *Conceptual disintegration* is a process wherein partial selection of an input must be enriched in order to make full sense. The productivity of the patterns of interaction between multimodal elements makes it impossible to build an inventory of the unlimited possibilities of disintegration. I restrict myself to set up identifiable cases at the extremes of a continuum of disintegration. At one extreme we find (a) *substitution* of the pre-existent material (A) by related material (A'). For instance, in a context of people talking about flirting, if one says “I was surrounded by tentacles”, meaning ‘arms’, it is obvious that the notion of ‘arms’ (which is a partial selection of the person supposedly harassing the speaker) has been taken away from the utterance and replaced by “tentacles” (a partial selection of the concept ‘octopus’, well known for having numerous long limbs). At the other extreme, (b) *fragmentation* draws attention to the partial projection of conceptual structure, as in “All hands on deck”, where “hands” act as a highlighted section of “sailors”. See Figure 4 for an overview of the two processes.

Figure 4. Schematic representation of conceptual disintegration by substitution and fragmentation (in black color and continuous line: partial present structure; in white and discontinuous line: absent structure which needs to be reconstructed or inferred)



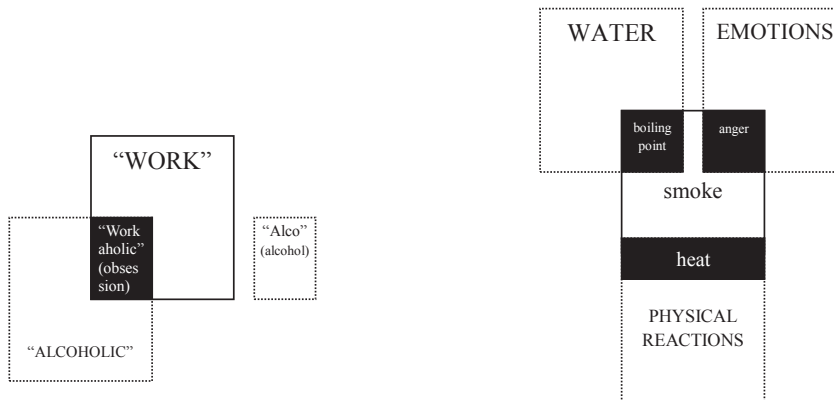
E.g.: I was surrounded by tentacles
(substitution)

E.g.: All hands on deck
(fragmentation)

The process of *conceptual integration* can also be gradable. At one extreme of the continuum we encounter partial *incorporation* of new material into partial pre-existent conceptual structure, as in the expression “workaholic” (where the final part of the word “alcoholic” is attached to the word “work”, in order to convey the idea of a person

who is addicted to work, in much the same way an alcoholic drinks obsessively). At the opposite extreme of the continuum we encounter *multiple-scope integration*, in which three or more than three conceptual packages are merged, this giving rise to a hybrid complex novel structure. A canonical example is “I saw smoke coming out of his ears”, used to refer to a person in an extreme state of anger (Turner and Fauconnier, 1998). The composite structure integrates information provided by different inputs, such as ‘physical events’ (boiling point), ‘emotions’ (higher degree of anger) and ‘physiology’ (body heat), plus novel material, such as the smoke (not present in the target) or ears as escape orifices (absent in the source mental space). See Figure 5 for a schematic representation of both processes.

Figure 5. Schematic representation of integration by incorporation and by multiple-scope incorporation (in black color and continuous line: partial present structure; in white and discontinuous line: absent structure which needs to be reconstructed or inferred)



E.g.: “Workaholic”

(incorporation)

E.g.: “He was so mad that I saw smoke coming out of his ears”

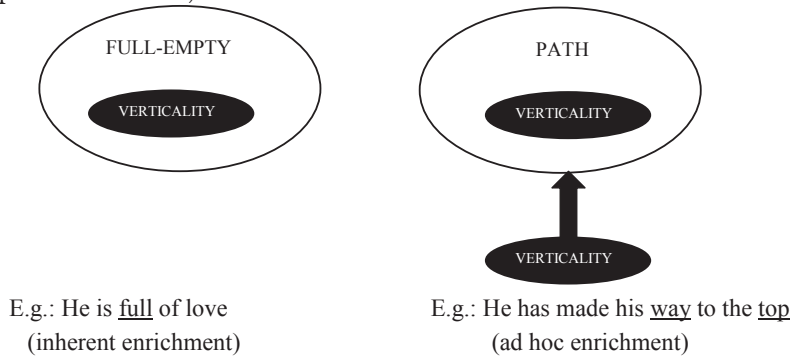
(multiple-scope incorporation)

As advanced above, this model is constrained by a second variable: degree of dependency between the inputs that are to be integrated. The relationship of subsidiarity yields two possibilities of integration: by *enrichment* or by *combination*.

In (a) *enrichment*, the novel material is inherently subsidiary to the initial conceptual layout into which it is integrated (as in “He is full of love” where the VERTICALITY schema is inherently subsidiary of the FULL-EMPTY schema). Another possibility is that the novel structure becomes subsidiary to the pre-existent

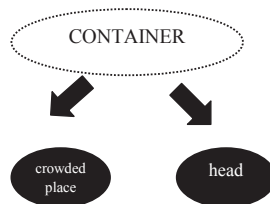
conceptual configuration by virtue of the conceptual integration process (as in “He has climbed his way to the top”, where the originally non-related PATH and the VERTICALITY schema become dependent on each other thereby rendering the top of an upward path as the location for greatest achievements) (See Figure 6).

Figure 6. Conceptual disintegration by inherent enrichment in “He is full of love” and by ad hoc enrichment in “He has made his way to the top” (in a black continuous line: partial present structure)



On the other hand, (b) *combination* takes place by calling upon common conceptual structure between the inputs to be integrated, which do not have any dependency relationship. This is the case with “Her head was teeming with ideas”, where the analogy between both external structures (a place crowded with animals and the CONTAINER schema) is what makes conceptual integration possible (Ruiz de Mendoza 2011: 108) (see Figure 7).

Figure 7. Conceptual integration by combination in “Her head was teeming with ideas” (in black color and continuous line: partial present structure; in white and discontinuous line: absent structure which needs to be reconstructed or inferred).



The following table (Table 1) summarizes the different processes of conceptual integration distinguished by the MCIM. *Conceptual blends* as conceived by Fauconnier and Turner (2002) have been included in the model as instances of multiple-scope

incorporation between independent input spaces (combination). Fauconnier and Turner (2002) further distinguish other types of blend, such as single-scope, mirror, and simplex blends. These are determined on the basis of the nature of the inputs. For example, in simplex blends one input consists of a frame and the other of specific elements; in mirror blends two inputs contain analogous structure; in single-scope blends the inputs have different frames and the blend inherits only from those frames. By contrast, double-scope blends resolve clashes between inputs that differ in content and image-schematic structure. However, these distinctions are immaterial for the MCIM since it focuses on the number of inputs and their complex interdependence relationships. The question of interdependence, which is central for the MCIM, has received scarce attention in blending theory.

The blank spaces denote the range of alternatives that have not yet been tackled by theorists within the field. As will be shown, *case study 1* renders a novel pattern of conceptual integration of text and music at the intersection between *incorporation* and *enrichment*. In turn, *case study 2* deals with an instance of integration between the linguistic and audial material at the crossroads of *substitution* and *enrichment*, and of *multiple-scope incorporation* and *enrichment* between inherently dependent musical components. Thus, this all-embracing model proves comprehensive enough to deal with all facets of conceptual integration.

Table 1. *Multimodal Conceptual Integration Model (MCIM)*

			Degree of integration of the elements involved			
			CONCEPTUAL DISINTEGRATION		CONCEPTUAL INTEGRATION	
			Substitution	Fragmentation	Incorporation	Multiple- scope incorporation
			 (gradable)		 (gradable)	
Dependency relationship between the integrated elements	ENRICHMENT	Inherent subsidiarity				
		Ad hoc subsidiarity	Case study 2 (text & music)	Case study 1 (text & music)		Case study 2 (music)
	COMBINATION	No subsidiarity				Conceptual Blend

4. Analysis

This section is concerned with the study of verboaudial manifestations of metaphor and metonymy in terms of patterns of conceptual integration (as described by the MCIM) and complex cognitive operations based on metaphor, metonymy and their different patterns of conceptual interaction (in terms of *metaphoric complexes*, Ruiz de Mendoza 2000, Ruiz de Mendoza and Pérez 2011) in two case studies: “When I am laid in Earth” (from Purcell’s *Dido and Aeneas*) and “The Hall of the Mountain King” (from Grieg’s orchestral suite *Peer Gynt*). The structure of the analysis of each case study is as follows: (1) I describe the patterns of conceptual integration between music and text in the verboaudial manifestation of metaphor/metonymy; (2) I account for the metaphoric and metonymic relationships structuring the multimodal conceptual network brought up by music and text; and (3), I discuss further considerations in relation to the overall construction of the verboaudial metaphorical message.

4.1. Case study 1: “When I am laid in earth” (from Henry Purcell’s *Dido and Aeneas*. Z. 626)

Figure 8. “When I am laid in earth” (from Henry Purcell’s *Dido and Aeneas*. Z. 626) (in red: descendant chromatic ground bass)

Recitative Thy hand, Belinda, darkness shades me, On thy bosom let me rest, More I would, but Death invades me; Death is now a welcome guest (measures 1-9).	Aria When I am laid, am laid in earth, May my wrongs create / No trouble, no trouble in thy breast (measures 1-15)

The piece under consideration is divided into the recitative *secco* “Thy hand, Belinda”, and the contrastive aria “When I am laid in earth”, both in meter 3/2 in the key of G minor (as shown in Figure 8). The first part says as follows: “Thy hand, Belinda, darkness shades me / On thy bosom let me rest / More I would, but Death invades me / Death is now a welcome guest”. The recitative results in the aria “When I am laid in earth”, where the pulse is entirely governed by the music. A descending chromatic line, the ground bass (Figure 9), is repeated eleven times throughout the aria, thus structuring the piece in the form of a chaconne. This type of musical composition involves the repetition of a fairly short descendant bass-line (ground bass), thus offering a compositional outline for variation, decoration, figuration and melodic invention. The text Purcell sets here is “When I am laid, am laid in earth, May my wrongs create / No trouble, no trouble in thy breast” (measures 1-15). The music of the soprano parallels the chromatic descendant fashion of the ground bass (yet in a less restricted manner).

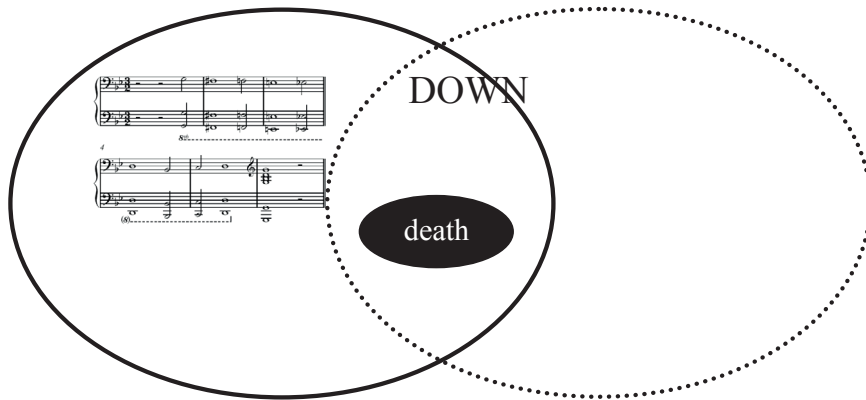
Figure 9. Descendant chromatic ground bass in “Dido’s Lament”



Recalling the MCIM introduced in Section 3, this aria is an evident case of *incorporation* where two inputs, music and text, merge. So far, this observation adds nothing new to previous contributions to the study of classical music from CBT (cf. Zbikowski 2002). However, the *dependency* relationship established between the musical downward motif and the notion of ‘death’ adds a layer of complexity to the picture which has not yet been already within CBT’s contributions to the field. From the perspective of the MCIM, it is worth mentioning that the relation of dependency is rather asymmetric. The basic schematic structure of the musical part, while initially autonomous, has been made dependent on the textual part for the excerpt to be interpreted. In other words, whereas it is possible to talk about a descending musical motif, it is just by means of its integration with the verbal part that we interpret the musical part in terms of “death”. The musical motif is therefore *enriched* with the verbal information: in this case, ‘death’ steers our interpretation towards a specific state of (musical) “down” affairs, i.e., death. Zbikowski (2009: 365) refers to this

musical technique as *text painting*. It consists in writing music that reinforces the literal meaning of a song. For example, ascending scales would accompany lyrics about going up; slow, dark music would accompany lyrics about death. The logic makes ‘death’ *inherently subsidiary* to downward motion (*ceteris paribus*, it would not make sense to talk about death with ascendant musical motifs, unless it is talked about ‘afterlife in paradise’, which is more likely to be associated to higher locations, according to Western tradition). Figure 10 captures the patterns of *conceptual integration* of the verbal part into the music on the basis of their analogous schematic structure “down”.

Figure 10. Incorporation by enrichment of the word “death” in the descendant ground bass



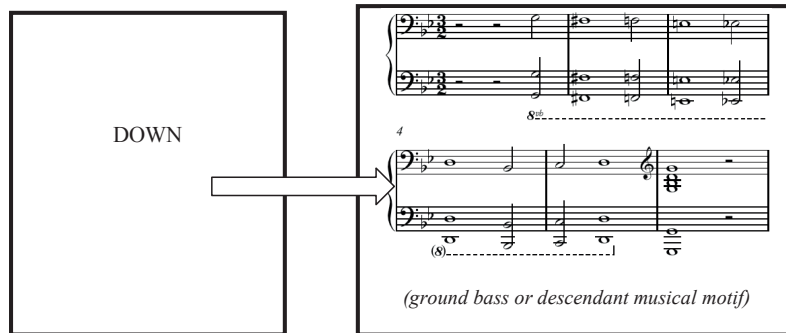
As regards the conceptual network of cognitive operations, the chromatic *descendant* line is the most recurrent pattern of meaning creation in this musical piece (seen in Figure 8 and 9). This representation hinges on the common construal of pitches as situated in a vertical space, as follows from the metaphor PITCH RELATIONSHIPS ARE RELATIONSHIPS IN THE PHYSICAL SPACE (Zbikowski 2002: 66). Through this metaphor, our knowledge of the relationships of points in a vertical space is put into correspondence with the less apprehensible relationship between musical pitches. In a broader sense, the vertical axis helps us to conceptualize the overarching metaphor MUSIC (UNIT) IS AN OBJECT (IN SPACE).

The array of inferences triggered by the metaphor allows us to speak of *musical motion* (i.e. succession of *ascendant* or *descendant* pitches, located at different places in the pitch-space or pentagram) and *musical space* (i.e. an emergent three-dimensional environment from the two-dimensional musical sheet). We talk about “high” and “low” pitches, although they vary on the basis of sound wave frequency. Interestingly enough, the motif here studied (Figure 9) is precisely the *ground bass*, i.e., the *lowest*

and more stable voice on the scale *upon* which the rest of the voices are displayed (in this excerpt, the rest of instruments and the soprano). See Figure 11 for a schematic overview of the metaphor MUSICAL MOTION IS PHYSICAL MOTION which allows to conceptualize the key musical notion of this aria, the *ground bass*.

Figure 11. MUSICAL MOTION IS PHYSICAL MOTION in case study 1

SOURCE: PHYSICAL MOTION – *down* TARGET: MUSICAL MOTION – *ground bass*



Furthermore, the same VERTICALITY schema also underlies metaphors referring to the *emotional basis* of major and minor scales. Among others, the crucial difference for this discussion is that, whereas major scales count on two tones between the first and the third note, in minor scales there is only a tone and a half between the first and the third note (downward altered half a tone and marked by a $\flat$) (see Figure 12 for a view of G scale in both major and minor version).

Figure 12. Parallel major and minor scales on G (in red: third degree in the scale)

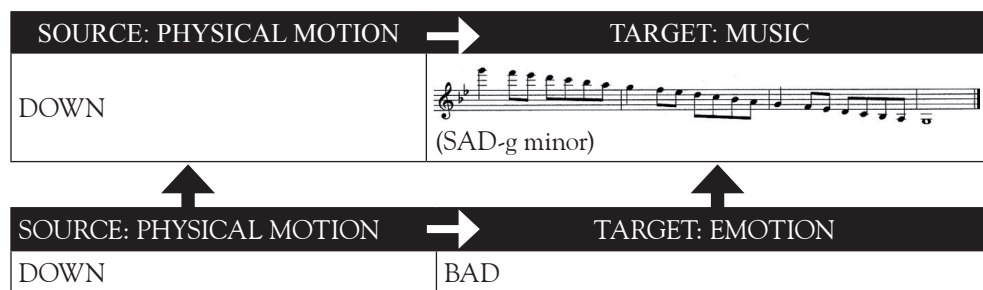


This fact greatly changes the mood of the music. From the perspective provided by Lakoff and his collaborators (Lakoff and Johnson, 1980, 1999; Lakoff, 1993), metaphors built on a vertical axis, which are one type of *orientational metaphors*, provide the experiential grounds for the conceptualization of personal well-being. According to their rationale, downward motion and/or a down position relate to the loss of control of our bodies, because we usually sleep lying on a horizontal plane. Additionally, they suffer from more negative connotations given that they may also

resemble the position adopted by a sick or dead body. This experiential basis gives rise to pairs of antagonistic metaphors of the type HAVING CONTROL OR FORCE IS UP vs. BEING SUBJECT TO CONTROL OR FORCE IS DOWN, CONSCIOUS IS UP vs. UNCONSCIOUS IS DOWN, and HEALTH AND LIFE ARE UP vs. SICKNESS AND DEATH ARE DOWN.

The fact that MINOR SCALE IS DOWN and SAD IS DOWN share the same source domain enables them for metaphorical amalgamation, whereby the conceptual structure of SAD IS DOWN is incorporated into the source-target layout of MINOR SCALES ARE DOWN (see *Figure 13*). By means of the single-source metaphoric amalgam SAD-MINOR SCALE IS DOWN, minor scales inherit the pejorative connotations from the DOWN IS BAD metaphor, which makes music composed in minor tonalities prone to be considered serious or melancholic.

Figure 13. Single-source metaphoric amalgam SAD-MINOR SCALE IS DOWN (white arrows for metaphorical mappings)



Let us now consider the metaphorical make-up of the text. It should be noted that any attempt to distinguish sharp boundaries between text and music is rather controversial. As has been already discussed elsewhere, the text helps to constrain and steers the musical interpretation (since music is not as iconic and specific as verbal language). However, it is worth noticing that music has also communicative power on its own. For instance, music reinforces the most relevant words thereby enhancing the communicative impact of the overall musical piece. For example, “darkness” (in the recitative), is accompanied by a descendant melisma (i.e., the singing of a single syllable of text while moving between several different notes in succession). In much the same line, “death” is presented with a descendant tone, while the preceding fashion is half a tone (or *chromatism*, in musical terms). In the aria, the lower notes correspond to “earth” and “breast” (as shown in *Figure 9*). The structure is repeated later on with “fate” as the ending word.

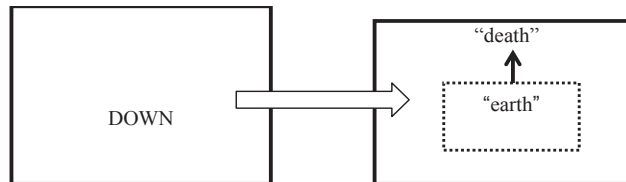
Curiously enough, the word ‘death’ has not been included in the verbal part of the aria, as it does in the recitative. It seems to have been replaced by ‘earth’, both in the title and in text of the aria. On the basis of the proposals in Ruiz de Mendoza (2000),

‘earth’ stands in metonymic relation to ‘death’ through an expansion process, of the EFFECT FOR CAUSE type (‘lying on earth’ is the effect for the cause ‘being dead’). This is one of the patterns of interaction between metaphor and metonymy labeled *metonymic expansion of the metaphoric target* (see Figure 14 for a schematic overview).

Figure 14. *DEATH IS DOWN* in case study 1

SOURCE: PHYSICAL SPACE – down TARGET: TEXT – “death”

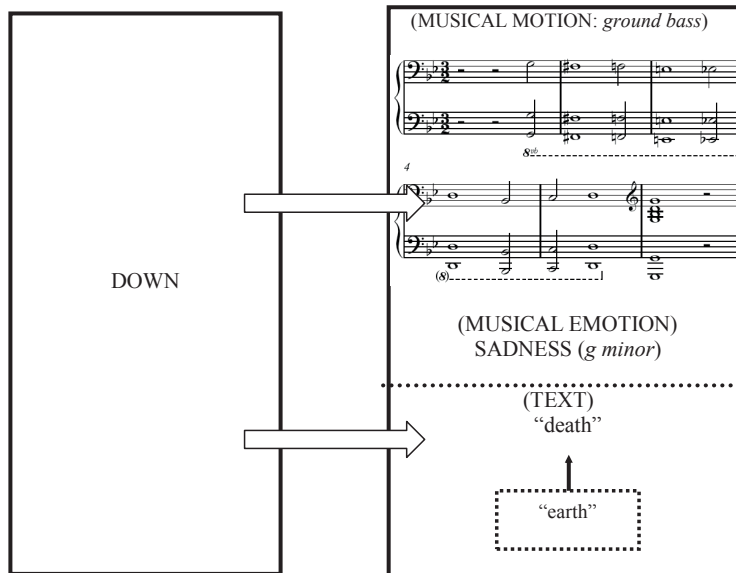
As it has been shown, the source domain DOWN structures the metaphorical conceptualization of *music*, in terms of (a) (downward) musical motion, (b) (sad) musical



emotion (on the basis of the chosen scale) and the *text*, with reference to the experiential basis of “death”. This common source domain allows for the conflation of the musical and the verbal metaphorical target domains into a single multimodal domain, in the manner of single-source amalgams explained in section 2.3 (see Figure 15).

Figure 15. Single-source metaphoric amalgam in “When I am laid in earth” (white arrows for metaphoric mappings; black arrows for metonymic mappings).

SOURCE: PHYSICAL SPACE – down MULTIMODAL TARGET: MUSIC
(ground bass, minor scale) + TEXT (“death”)



So far, linguistic accounts of single-source metaphoric amalgams (Ruiz de Mendoza and Mairal 2011, Ruiz de Mendoza and Pérez 2011) had only detected the conflation of two metaphors into one. However, as schematized above, the source domain in the experiential domain “physical space – down”, structures the understanding of a triple verboaudial target domain (musical motion, musical emotion and text). Indeed, not only conceptual integration but also conceptual interaction patterns seem to be more productive in multimodal environments. Interestingly enough, the type of metaphorical complex has evolved after the conflation of the three targets: now the metonymic *expansion* holds for *one of the correspondences of the metaphoric target*, a pattern which is still commensurate with those metaphorical complexes identified by Ruiz de Mendoza (2000).

Consequently, this approach to multimodal metaphors develops that originally postulated by Forceville (2009a), insofar as it bears in mind the possibility for multimodal metaphors to interact with other tropes such as metonymies. Additionally, this example sheds light on a new facet of multimodal metaphor, where multimodality takes place within the terms of the metaphor (target in this case) and not just in the mapping across domains.

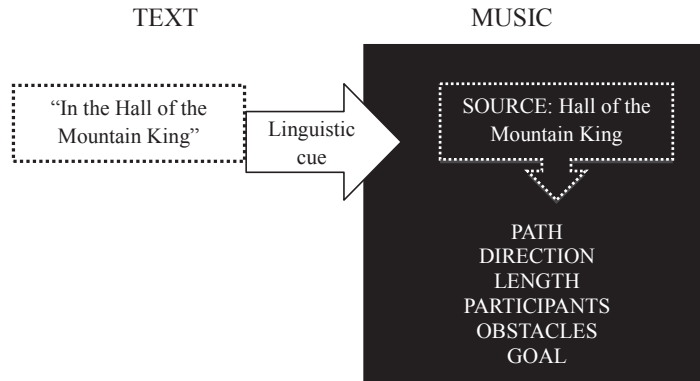
4.2. Case study 2: “In the Hall of the Mountain King” (from Edvard Grieg’s *Peer Gynt*, op. 23)

“In the Hall of the Mountain King” (“I Dovregubbens hall”) is a piece of orchestral music composed by Edvard Grieg to accompany the sixth scene of Act II in Henrik Ibsen’s (1876) play *Peer Gynt*. However, since the text by Ibsen is only occasionally performed in conjunction with the music, I will consider this piece as an example of instrumental *program music*. This type of art music renders an extra-musical narrative. Even solely instrumental pieces have a multimodal dimension, wherein the verbal title and the musical part interact. However, it is not possible to talk in terms of *conceptual integration per se* given the fact that the title is an independent element which is processed prior to the music. If considered under the light of *conceptual disintegration*, the title is not a *fragment* of the musical part since the absence of this verbal hint does not jeopardize the integrity of the musical piece. On the contrary, the verbal component is *substituted* by the music once the latter starts, which in its turn elaborates on this former verbal hint.

The textual heading proves essential to select and activate relevant information in the musical part (and therefore, becomes inherently subsidiary to the music for the inferential task to take place). Within the musical context, the title of instrumental pieces usually serves as guide for the conceptual activation of relevant parts of musical material. In this case, the title provides us with the SOURCE of the musical motion:

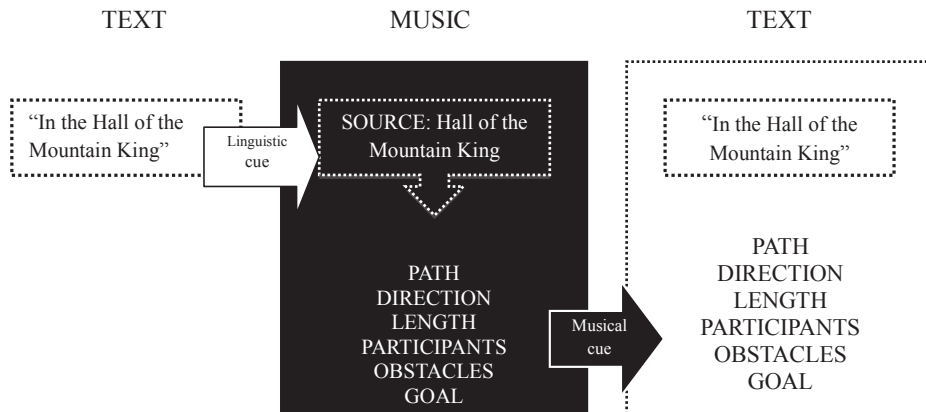
“In the Hall of the Mountain King” linguistically cues the musical environment in which Peer’s flight begins.

Figure 16. Title as linguistic cue in case study 2 “In the Hall of the Mountain King”



Music in its turn elaborates by means of musical metaphors on this verbal hint by constructing a more complex narrative. According to the plot, at the moment when the musical fragment begins, Peer Gynt has already initiated a quiet flight, since he is neither willing to become part of the King’s court, nor to accept his paternity responsibilities in relation to the pregnancy of the King’s daughter. Therefore, a secondary cueing applies the reverse way, thereby enriching the imagery beneath the brief title. *Double cueing* emerges as a largely productive tool for meaning reconstruction in most instrumental programmatic pieces (See Figure 17).

Figure 17. Double metonymic cueing between the title “In the Hall of the Mountain King” and the instrumental part (white and discontinued line for absent subdomains; black for present domain)



As regards the instrumental part, the simple theme (written in the key of B minor) begins slowly and quietly in the lowest registers of the orchestra (see *Figure 18a*). It is played first by the cellos and bassoons, resembling Peer Gynt's slow, careful footsteps.

Figure 18a. First part of the main theme of “In the Hall of the Mountain King” (B minor)



After being introduced (first by cello *pizzicati* or ‘plucking’, and then by bassoon), the main theme is then very slightly modified with a few ascending notes transposed up a perfect fifth (to the key of F-sharp major, the dominant key) (see *Figure 18b*). Since the second part is played on different instruments, and on a different tonality, it seemingly conveys the chasing steps of the King's trolls.

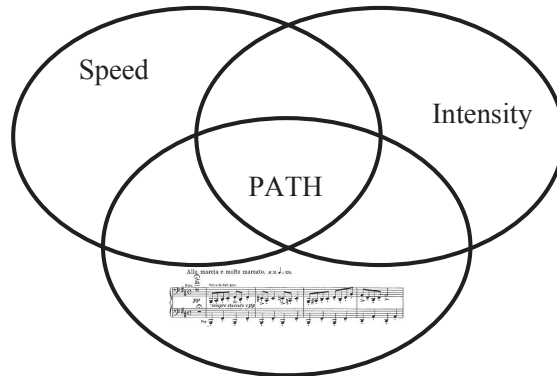
Figure 18b. Second part of the main theme of “In the Hall of the Mountain King” (F-sharp major)



The two groups of instruments then move in and out of different octaves until they eventually encounter one with each other at the same pitch. At the level of the narration, it would suggest that the trolls, having spotted Peer, give him chase. The speed gradually increases to a *prestissimo* finale, and the music itself becomes louder and more melodic.

The whole fragment is built upon the felicitous merging of three inputs: musical speed, intensity and musical theme. This *multiple scope integration* is built upon a common analogous structure: the PATH image schema (see *Figure 19*). As advanced elsewhere, this type of pre-conceptual structure underlies the notion of JOURNEYS (as having a starting point, movement along a path, and a destination). In turn, the discrete conceptual domain of journeys furthers our understanding of much more abstract entities such as that of the musical plot and/or musical *narrativity* (in terms of theme, development and recapitulation), which is the characteristic feature of program music. By virtue of the overarching PROGRAM MUSIC IS A JOURNEY metaphor we interpret the succession and iteration of a series of conventionalized patterns as a series of actions that take place over the musical story.

Figure 19. Multiple incorporation by (inherent) enrichment in case study 2 “In the Hall of the Mountain King”



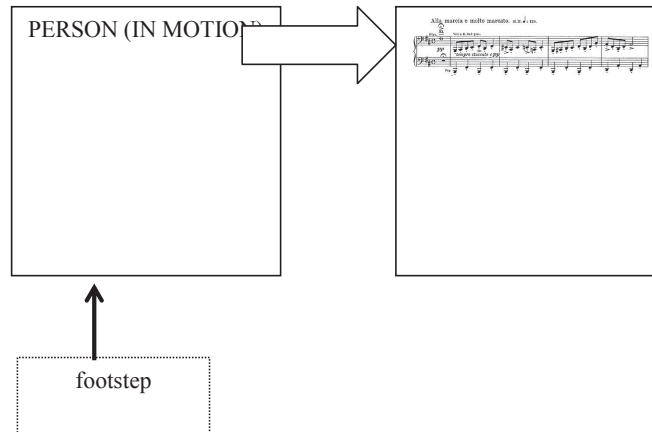
However, given that the musical speed and the musical intensity are more present in the final part of the musical fragment, *enrichment* takes place in the very last part of the PATH schema, i.e. the GOAL. Those cases in which the goal and the end-point coincide yield a special subcase of the PATH schema, namely the GOAL-DIRECTED MOTION schema. This schema is mainly characterized by an increase in tension at the arrival to the destination, followed by relaxation and interruption of the motion. Indeed, it can be concluded that musical speed and musical intensity are *inherently dependent* on the nature of flights, which in turn contribute to the feeling of tension in the last part of the musical piece.

Crucial for the understanding of the extra-musical narrative is to determine who is the agent of the motion (i.e., MUSICAL THEME IS PERSON IN MOTION) and the terms in which the motion is undertaken (i.e., MUSICAL MOTION IS PHYSICAL MOTION). These tasks can be explained in terms of a series of patterns of interaction between metaphor and metonymy, as shown below.

As regards the structuring of the *agent* of the motion, there is a metaphorical mapping that establishes a correspondence between the musical theme and human footsteps. The matching is possible due to the high resemblance between the sound and dynamics of human footsteps and the highly rhythmic musical theme. At a subsequent stage, a metonymic expansion process in the metaphorical source domain from human steps to a person in motion allows to establish the connection between the musical theme and the protagonist of the story (see Figure 20). What is more, variations in the number of the instruments playing the musical theme would consequently have their effects on the understanding of the extra-musical story. As it happens, the point in which more instruments play the musical theme coincides with the part of the story in which more trolls chase Peer in his way out of the mountain.

Figure 20. MUSICAL THEME IS PERSON (IN MOTION) in case study 2 “In the Hall of the Mountain King”

SOURCE DOMAIN: PERSON (IN MOTION) TARGET DOMAIN: MUSICAL THEME



Let us now consider the second metaphor under consideration, **MUSICAL MOTION IS PHYSICAL MOTION**. This metaphorical connection establishes correspondences between musical progression and human motor behaviors. Regarding the *manner* of motion, musical *tempos* exploit the different frequency rate of steps in the act of moving: *andante* for slow pulse similar to *wandering*, *allegro* for a steady pulse associated to *walking*, *vivace* for lively motion such as *running*. In the musical excerpt pertaining to this analysis, the rhythmic structure is coordinated with a notable increasing of the beats per pulse (from *andante* to *prestissimo*). Therefore, the delivery of the musical analog by means of the metaphor **MUSICAL RHYTHM IS PHYSICAL RHYTHM** renders a version of Peer's flight in which the character initially tries to escape unnoticed, but at some moment his chasers spot him and he must rush to escape from the mountain. On the other hand, the *structure* of the motion is governed by the schematic tripartite structure of the **PATH** schema. First, the title cues the **SOURCE**, i.e. the original setting of the scene (the hall of the Mountain King). In turn, the exposition and repetition of the musical conveys the **DEVELOPMENT** of the motion, namely the manner in which Peer Gynt is making his way out of the mountain. The alternation with the dominant tonality prompts the construction of the trolls, the other characters that follow Peer. After a brief transition, we reach to a turning point at which Peer's attempt to escape is spotted. The increasing number of instruments playing conveys a growing number of chasers; on its part, the increasing musical speed activates the idea of an equally increasing velocity of the physical flight. After a series of isolated *staccato* notes, resembling the last efforts of the trolls to catch Peer, he eventually achieves his goal and succeeds in his way out of the mountain.

These two metaphorical systems considered above conflate into one, where *agents* of the musical motion are understood in terms of the participants of the flight (namely, Peer and the trolls), and the variations in musical rhythm of the main theme renders the progression of the physical flight. Once we access the MUSICAL THEME IS PERSON IN MOTION metaphor, the incorporation of the second metaphor MUSICAL RHYTHM IS PHYSICAL MOTION holds for the manner and the structure in which the agents accomplish the motion. *Figure 21* shows a metaphorical complex where a double-source metaphoric amalgam is built on the basis of a *metonymic expansion of the metaphorical source* (Ruiz de Mendoza 2000).

Figure 21. Double-source metaphoric amalgam in case study 2 “In the Hall of the Mountain King” (white arrows for metaphoric mappings; black arrow for metonymic mapping).

SOURCE 1: PERSON (IN MOTION)	TARGET: MUSICAL THEME	SOURCE 2: PHYSICAL MOTION
(quantity of) PERSON(S) (IN MOTION) ↑ Human footstep	(quantity of instruments playing the musical theme) 	
	(rhythm of / tempo of the musical theme) 	(rhythm of) PHYSICAL MOTION

5. Final remarks

This paper makes an initial and tentative incursion into the unexplored area of the multimodal metaphors and metonymies operating beneath musical understanding. The analysis here offered has been twofold. First, in order to account for the description of multimodal hybrids, I have developed the MCIM. I have argued and shown how this apparatus can account for all the facets of conceptual integration in a greater detail than blends. The present study has evidenced two types of hybrids: in *case study 1*, the text was *incorporated* in the musical part, thereby *enriching* the latter's schematic structure. Additionally, *case study 2* related to an example of *multiple scope integration*, where musical speed, musical intensity and music motif were incorporated into one another by *combination*, i.e. by calling upon analogous structure, namely the shared image schematic common ground.

Second, on the basis of the analysis of the conceptual mechanisms underlying verboaudial metaphors, I have shown that there is some research on monomodal verbal metaphor that can be paralleled in the multimodal field. I have addressed the workings of a set of patterns of interaction between metaphor and metonymy and metaphoric amalgams. The felicitous interaction of these two cognitive operations gives rise to creative combinations of multimodal inputs with the same descriptive scope as CBT and the advantages of the CTM's explanatory constraints. In *case study 1* I discussed an example of multimodal single-source metaphoric amalgam, where the metaphorical verbal, musical, and additionally, emotional target domains conflate into one single multimodal domain. This phenomenon complements previous accounts of multimodal metaphor (Forceville and Uriós-Aparisi 2009, and analyses therein), where multimodality has been placed within the metaphorical mapping rather than in the domains. In *case study 2* I have analyzed the integration of two metaphors: MUSICAL THEME IS THE CAUSER OF MOTION and MUSICAL RHYTHM IS PHYSICAL MOTION. Once the main theme stands via a metonymic expansion process for a person in motion, thereby allowing for the conceptualization of the musical theme in terms of causer of motion, the complementary metaphor MUSICAL RHYTHM IS PHYSICAL MOTION structures the manner in which the person moves along the path. Both analyses evidence an unexpected degree of complexity in the study of multimodal metaphor and metonymy which has not been tackled in previous work.

What is more, the demonstration of the image schematic basis underlying musical understanding lends support to the capability of music to render structural metaphors, where there is a preexistent correspondence between source and target domain. So far, cognitive scholars have provided mainly linguistics accounts of the PATH schema (with a few exceptions, such as Pérez-Hernández, 2013, in the pictorial realm; Brower, 2000, in the musical domain, and Forceville, 2011, in the audiovisual context). The

fact that music has its own power to structure one concept in terms of another lends plausibility to the CTM's claim that we think, not just talk, with metaphors.

Further research should look for empirical confirmation of the theoretical proposals of this paper in other multimodal contexts. In this respect, commercials emerge as a suggestive case study as they comprise three complementary modes: verbal, visual and audial. A preliminary hypothesis would be that the higher the number of modes in interaction, the more complex the underlying cognitive operations at work.

Acknowledgements

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