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MUSIC, SONG, LANGUAGE

Words, Music, and Meaning

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In an autobiography first published in 1936 Igor Stravinsky recalled the consolation Russian folk poems provided to him when he found himself isolated in Switzerland at the beginning of the First World War. In his recollection he drew a contrast between the effect of these poems and music:

What fascinated me in this verse was not so much the stories, which were often crude, or the pictures and metaphors, always so deliciously unexpected, as the sequence of the words and syllables, and the cadence they create, which produces an effect on one's sensibilities very closely akin to that of music. For I consider that music is, by its very nature, essentially powerless to *express* anything at all, whether a feeling, an attitude of mind, a psychological mood, a phenomenon of nature, etc. *Expression* has never been an inherent property of music. That is by no means the purpose of its existence. If, as is nearly always the case, music appears to express something, this is only an illusion and not a reality. It is simply an additional attribute which, by tacit and inveterate agreement, we have lent it, thrust upon it, as a label, a convention—in short, an aspect unconsciously or by force of habit, we have come to confuse with its essential being.¹

Stravinsky went on to propose that the sole purpose of music is to order sonic phenomena in time such that they can be contemplated in the abstract much as one might contemplate the interplay of architectural forms.²

The notion that music does not express anything is one of Stravinsky's most well-known pronouncements, but it should be taken in context: his autobiography,

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1. Stravinsky (1935, pp. 53–54 eng. transl.).
 2. *Ibid.* Stravinsky concludes the passage by invoking the notion, first formulated by Friedrich von Schelling, that architecture is solidified music, a notion he attributes to Goethe. See Schelling (1859, p. 165, p. 177 engl. transl.).

which was ghost-written by Walter Nouvel, came from a time when Stravinsky was actively trying to situate himself in the vanguard of composers.³ As such, the assertion that music was not about anything — that it was pure construction, having nothing to do with everyday life — placed Stravinsky and his music above the fray and beyond the reach of the long nineteenth century. It is fair to say, however, that Stravinsky was not alone in his opinion about what music might be able to express: the question of what we might broadly call the cognitive status of music and music's relationship to other modes of communication loomed large in post-Enlightenment thought, and one way to deal with it was to claim for music a privileged status as a mode of communication that was, in an important way, *beyond* communication.

I have never been comfortable with this view of music, which reflects two related assumptions. The first is that for thought to count as thought it has to take linguistic form. One consequence of this assumption is that many modes of human communication, including gesture, dance, and music, are relegated to non-conceptual status and achieve conceptual status only by being translated into language. The second assumption is that communication relies on what Michael Reddy called the conduit metaphor: for communication to take place one must take bits of information, wrap them up in neat packages, and then send them down a conduit to another person who unwraps the packages to discover the information within.⁴ Whatever the merits of using this metaphor to structure our understanding of communication through language—and those are debatable—the model simply doesn't work for music, which prompts listeners to a kind of engagement for which the conduit metaphor is clearly inadequate.

To get a sense of what might be involved with this sort of engagement, and how it differs from what we accomplish through language, let me turn to a group of brief musical passages, which will help illustrate some important aspects of the kind of understanding that is built up through listening to music. The first passage, shown in Example 1, consists of a simple alternating figure in a waltz rhythm. The alternation begins with two notes a fifth apart (G4 and D5—a fifth is the first ascending interval of the children's song "Ah, vous dirai-je Maman", known in the Anglo-American world as "Twinkle, Twinkle, Little Star"), which shrink to a fourth in measure 2 (A4–D5), return to a fifth in measure 3, and then contract back to a fourth in measure 4. Here I would strongly encourage that the reader imagine, to the extent he or she can, the sound of this figure, whose steady alternations, set in waltz rhythm, create an aural image of a regular, swinging oscillation.

3. Taruskin (2011, pp. 171–172).

4. Reddy (1993). For an analysis of this metaphor and its role in the development of the contemporary theory of metaphor see Grady (1998).

alternations set up a regular, swinging rhythm the contraction of the interval gives a different feel to the alternation of pitches, and the connection to the opening of “My Favorite Things” is lost. Of course, much of the broadly swinging effect of the introduction, as well as Rodgers and Hammerstein’s tune, is a consequence of the triple meter of the waltz. Note how the effect of the modified introduction changes if it is rendered in 4/4 time (as it is in Example 4): with a strong beat now occurring after four eighth-notes (rather than after six, as is the case in 3/4) the rhythm is choppier, less flowing. I should emphasize that this change is not simply conceptual (a consequence of realizing that strong beats now occur after four eighth-notes rather than six) but also, to some extent, embodied: the bodily images we summon as we imagine or perform Example 4 are of a different sort than those engendered by Example 3.



Example 3: The opening of the popular tune of Example 2 with a modified introduction.



Example 4: The modified introduction from Example 3 in 4/4 meter.

One final example will complete my opening exposition: Example 5 takes the modified introduction of Example 3, now set in 4/4 time, and uses it as the introduction for a different popular tune. The reader may find this tune, with its wide-spread intervals (the octave G₄–G₅ in measure 5, the major sixth G₄–E₅ in measure 7) a bit more challenging to render, but will almost certainly find the task easier once he or she has recognized the melody: Yip Harburg and Harold Arlen’s “Over the Rainbow”. written for MGM’s movie musical *The Wizard of Oz*. With this recognition in place, the oscillating figure first set out in Example 4 will fall into place as one often used to introduce “Over the Rainbow”. having been taken from the melody for the bridge section of the tune. Indeed, my aural sleight-of-hand may well have foundered on Example 4: many listeners, experiencing those four measures, will instantly think of Harburg and Arlen’s “Over the Rainbow”. Even so, readers may find it interesting at this point to return to Example 3 (or even Example 2) to explore which features of the oscillating figure of Example 4 (now associated with “Over the Rainbow”) are retained in the version in 3/4 time, and which are changed. Doing so should bring the reader at least partially back to the perspective I wished to encourage with Example 1 — that is, a perspective in

which sequences of musical events shape their thoughts (rather than, for instance, extra-musical knowledge about “Over the Rainbow”, “My Favorite Things”, or, for that matter, “Ah, vous dirai-je Maman” or “O, Canada”).



Example 5: The opening of a second popular tune, introduced by the four-measure oscillating figure from Example 4.

In what follows I would like to explore ways to characterize musically-guided thought processes of the sort my examples were meant to encourage, and to consider how thought that is guided by music relates to thought that is guided by language. My aim here is to better understand how music participates in the construction of meaning. The approach I take is guided by the assumption that music and language have different functions within human cultures, and that to realize these functions they employ, for the most part, different forms of reference. The qualification in that last sentence reflects the insight evident in Stravinsky’s observations about Russian folk poems: sequences of words and syllables, and the cadence they create, can have an effect quite like that of music. That said, in the main language and music make use of different resources to achieve their expressive and communicative ends, a difference reflected in the structure and nature of their grammars.

I shall begin by sketching an approach to grammar first developed by cognitive linguists, one that I have endeavored to extend to music. This will lead to a brief consideration of the basic functions of language and music in human cultures and to the different forms of reference they employ. My thinking about forms of reference is guided by the work of C.S. Peirce and in particular his notions of the symbol and the icon, and I shall want to spend a little time sorting out his ideas and their relevance to linguistic and musical communication. I shall then return to Harburg and Arlen’s “Over the Rainbow” to consider ways it exemplifies musical and linguistic communication, as well as how music and language can interact to create new possibilities for meaning construction.

1. Linguistic and Musical Construction Grammars

1.1. *Constructions*

My research over the past decade has focused on formulating an account of the basic features of a cognitive grammar of music. This research is inspired by work

in the disciplinary formation that has come to be known as cognitive linguistics, which is guided by the idea that language reflects the cognitive capacities of humans. William Croft and Alan Cruse summarize that idea in this way:

The cognitive processes that govern language use, in particular the construction and communication of meaning by language, are in principle the same as other cognitive abilities. That is, the organization and retrieval of linguistic knowledge is not significantly different from the organization and retrieval of other knowledge in the mind, and the cognitive abilities that we apply to speaking and understanding language are not significantly different from those applied to other cognitive tasks, such as visual perception, reasoning or motor activity. Language is a distinct human cognitive ability, to be sure. From a cognitive perspective, language is the real-time perception and production of a temporal sequence of discrete, structured symbolic units. This particular configuration of cognitive abilities is probably unique to language, but the component cognitive skills required are not.⁵

The approach to linguistic knowledge that follows from this perspective — one in which language is viewed as a consequence of, rather than a precondition for, conceptualization — has given rise to what has come to be called construction grammar.⁶ Constructions are defined as “stored pairings of form and function, including morphemes, words, idioms, partially lexically filled and fully general linguistic patterns.”⁷

The ideas behind construction grammar have led me to reflect on the basic functions of language and music in human cultures. With respect to the basic function of language I have been guided by the work of the developmental psychologist Michael Tomasello, whose research over the past three decades has explored how children acquire language and how other primates do not.⁸ Following Tomasello, I adopt the position that the basic function of language within human culture is to direct the attention of another person to objects or concepts within a shared referential frame.⁹ It seems quite clear that music is not very good at *directing* the attention of another person to objects or concepts within a shared referential frame (although it might be good for *getting* the attention of another person). What music *is* very good at is representing through patterned sound various dynamic processes that are important within human culture. Chief among these are those associated with expressive movements, with the emotions, and with the patterned movement of dance. And so my proposal is that one of the basic functions of music within human cultures is to provide sonic analogs for dynamic processes, and that the constructions fundamental to a cognitive grammar

5. Croft and Cruse (2004, p. 2).

6. Croft and Cruse (*Ibid.*, chap. 10); Goldberg (1995 and 2006).

7. Goldberg (2003, p. 219).

8. See in particular Tomasello (2003 and 2008).

9. Tomasello (1999, chap. 5).

of music offer forms — that is, specific sequences of patterned sound — to realize these functions.

From the perspective of my own work, it is a short — but still necessary — step from “function” to “meaning”. I propose that the way a musical utterance functions in a given social and cultural situation will change its meaning. Thus Harburg and Arlen’s “Over the Rainbow” would function one way were it performed by a cabaret performer in a nightclub, another way were it performed by an amateur singer at the funeral for a friend, and yet another way were it performed by an individual accompanying herself at the piano and recollecting *The Wizard of Oz* in the privacy of her own home. For the sake of argument, let us imagine that the actual musical utterances are invariant—that the cabaret performer’s version is substantially the same as that of the amateur singer and of the private individual. The meaning of these utterances would, however, change with their context: from a species of “entertainment” (in the nightclub), to a hopeful eulogy (in the funeral chapel), to a deeply felt reminiscence (in the private home). To be sure, there will be overlap between these meanings, governed to some extent by the invariance among the musical utterances and to some extent by the overall frameworks of Western post-industrial society, but there will also be significant differences, many of which reflect the multivariate ways the musical utterances actually function within these social and cultural contexts.

In the sequel I shall return to the notion of musical constructions and their role in creating meaning. I shall first, however, consider the different forms of reference that language and music exploit, as I regard these different forms as intimately related to the communicative resources language and music exploit as well as the ways they realize their functions in human cultures.

1.2. *Symbolic and analogical reference*

It was in the work of C.S. Peirce that the study of systems of reference was gathered under the rubric of semiotics (an approach anticipated by John Locke’s threefold division of human knowledge at the end of his *Essay Concerning Human Understanding*¹⁰). One way to think of Peirce’s study of signs is as an exploration of the origin and nature of the thoughts that are connected with various aspects of experience. Peirce described this connection through a set of nested triadic relationships, which begin with an object (the relevant aspect of experience), a sign that stands for this object, and the thought-structure created in someone’s mind by this sign. Here is one of Peirce’s formulations of these relationships, together with his formal terms for the elements involved:

A sign, or *representamen*, is something which stands to somebody for something in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign. That sign which it creates I call the *interpretant* of the first sign. The sign

10. Locke (1690, 2, p. 309).

stands for something, its *object*. It stands for that object, not in all respects, but in reference to a sort of idea, which I have sometimes called the *ground* of the representamen.¹¹

My reading of Peirce is informed by the biologist Terry Deacon's work on language evolution. This is especially so in the case of Peirce's second set of triadic relationships, which concerned the forms the sign could take: as *icon*, *index*, or *symbol*. Deacon notes that what was important for Peirce was the relationship between the characteristics of the sign token and those of the physical object that it represented. Deacon summarized these relationships as follows: "icons are mediated by a similarity between sign and object, indices are mediated by some physical or temporal connection between sign and object, and symbols are mediated by some formal or merely agreed-upon link irrespective of any physical characteristics of either sign or object."¹²

Peirce's semiotic theory provided Deacon with a framework for describing why our species and no other developed language. The simple ability to use signs, broadly understood, was not enough in itself, since there is ample evidence that other species have the capacity to make use of basic kinds of icons and indices. What was crucial was being able to use signs — and in particular indices — to refer not simply to objects but to other signs. By this means it was possible to build up the dense network of interconnected symbols — that is, the system of symbolic reference — on which language is based.¹³

If what I call a sonic analog is akin to Peirce's notion of an icon and if, from Deacon's perspective, other species can make use of icons, why is it that other species have not developed music? The key is analogical reference, a form of reference that is part of Peirce's fuller account of the icon (or, more accurately, what Peirce called a hypoicon). As suggested by Deacon's summary, icons represent their objects by being like them. For Peirce, this likeness may take one of three forms:

"Those [hypoicons] which partake of simple qualities, or First Firstnesses, are *images*; those which represent the relations, mainly dyadic, or so regarded, of the parts of one thing by analogous relations in their own parts, are *diagrams*; those which represent the representative character of a representamen by representing a parallelism in something else, are *metaphors*."¹⁴

Peirce did not elaborate this division further, but based on his overall approach it seems fair to say that the image was, in its essential respects, indistinguishable from its object. In contrast, diagrams preserve structural relationships with their objects (but not, perhaps, their surface features), where metaphors offer a looser but still discernible connection between the icon and its object.

11. Peirce (1955, p. 99).

12. Deacon (1997, p. 70).

13. Deacon (2003).

14. Peirce (1960, 1.277).

All told, Peirce's remarks on iconicity are relatively brief, and made chiefly within the context of setting out his overall system of signs. Not so for Umberto Eco, who devoted over seventy pages of his *A Theory of Semiotics* to the phenomenon of iconism. It is apparent from Eco's analysis and critique that the icon is not nearly as simple as portrayed by Peirce, and that developing a fuller account of the way iconic signs are produced is central to understanding the function of signs as a whole. In the course of his analysis Eco dismissed analogy as a way to account for iconism, for he understood it to be little more than a formal procedure through which the transformation of object into icon can be effected.¹⁵ Empirical research over the past thirty years, however, has demonstrated that there is much more to analogy than a formal procedure effecting the transformation of object into icon — analogy is instead a general and fundamental cognitive process through which structure and relations are mapped between two different domains. More specifically, mapping relationships between relationships — what are called “second order relations” in research on analogy — is distinctive of the analogies that humans make. Indeed, Douglas Hofstadter has argued that analogy, as the means by which concepts are assembled and connected to one another, is at the very core of human cognition.¹⁶ At the very least, there is considerable overlap between judgments of similarity, making analogies, and processes of categorization, all of which contribute to the distinctiveness of human intelligence.¹⁷ Perhaps more striking is that the capacity for analogy is apparently unique to our species. Although other species are able to make some very sophisticated similarity judgments, and there is research suggesting that chimpanzees can understand the second-order relations basic to analogy (especially for spatial reasoning) and that bottlenosed dolphins can perform sophisticated body-mapping analogies, current evidence indicates that no other species comes close to making or using analogies with the facility and speed of humans.¹⁸ And this capacity is available from a very early age: children as young as ten months are able to solve problems by analogy,¹⁹ and by the age of three years analogical abilities are quite robust.²⁰ In sum, then, although it may be that other species are able to make use of the form of icon that Peirce called an image, they will not typically be able to understand icons that are diagrams or metaphors.

15. Eco (1976, pp. 200–201).

16. Hofstadter (2001). See also Hofstadter and Sander (2013), which develops this perspective in greater detail.

17. Medin, Goldstone, and Gentner (1993); Glucksberg and Keysar (1990).

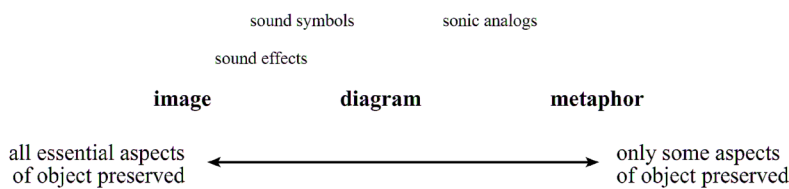
18. Call and Tomasello (2005); Gentner (2003); Herman (2002); Holyoak and Paul Thagard (1995, chap. 3); Oden, Thompson, and Premack (2001).

19. Chen, Polley Sanchez, and Campbell (1997).

20. Goswami (1992); Goswami (2001); Gentner (2003).

1.3. Iconicity and Sonic Analogs within Music

To develop more fully the notion of a sonic analog, I would like to expand Peirce's notion of an icon in two ways. First, I want to propose that the "object" of an icon may be a dynamic process. Put another way, the sonic analogs for dynamic processes offered by music reinterpret the "object" of an icon: rather than a static structure, it is a dynamic process. Second, although Peirce appeared to regard the iconic image, diagram, and metaphor as discrete categories, I want to suggest that they can be thought of as situated along a continuum of signs that range from those with a great deal of fidelity to the object to those that preserve only a few selected features of the object. Example 6 provides a sketch of this continuum, and offers one interpretation of how different sonic events might be situated along it. Sound effects that attempt to represent with as much fidelity as possible some actual sonic event (such as the sound of a helicopter) are regarded as a kind of image. Particularly effective examples (among which I would include the imitation of bird song) may deceive a listener into thinking that the sound was produced not by a human but by its typical source (be that a helicopter or a bird). Sound symbols, which include onomatopoeic words and ad hoc sound effects interjected into the stream of speech, fall between the image and the diagram. Just where they would fall will depend in part on the extent to which they replicate the essential features of some target sound event, and in part on whether the dynamic event they aim to represent carries with it any sound at all. (One example of the latter is a rapidly descending whistling sound, used to represent the quick and typically precipitous — but soundless — descent of an object.) The sonic analogs of music seem closest to Peirce's diagram or metaphor: although they may have correlations with a real or imagined sonic event (such as a bird call, or a sudden loud sound), they more typically analogize dynamic processes whose attributes are predominantly non-sonic.



Example 6: Illustration of a continuum of icon-types drawn from Peirce's tripartite division of hypoicons, including various specific types of sonic events.

To illustrate the basic idea of a sonic analog within a musical context, let me return to my opening examples, and in particular Example 2 (which paired the oscillating introduction with the opening of "My Favorite Things"). In my earlier discussion I suggested that the steady alternations of the introductory figure created an aural image of a regular, swinging oscillation, and noted that this sense of swing changed — indeed, took on a more expansive character — once Rodgers

and Hammerstein's tune took over. In point of fact, the aural image of swinging is an illusion: while performing Example 2 requires some form of alternation (even if it involves only portions of the vocal tract), whatever "swing" we hear is something summoned from our memories of a particular form of physical movement ("swinging"). Moreover, actual swinging (as a result of being suspended from an overhead support by some connecting material) carries with it no particular sound (although the overhead support and connecting material may make various sounds due to the physical stresses placed on them). The music of Example 2 is thus not an imitation of swinging but is instead a sonic analog for the dynamic process of swinging.

I should note that the notion of musical expression I have outlined here, based on creating analogs for dynamic processes through sequences of musical sound, points to a species of communication rather different from that employed by natural language. The sort of communication engendered by music — and I leave open the question of whether "communication" is the best term here — is something closer to sympathy or empathy, and reflects both the influence of embodied experience on cognitive processes and the deeply social basis of humans' interpersonal exchanges.²¹ That said, the marked differences between musical and linguistic communication can offer a productive basis for thinking about the resources — both material and cognitive — exploited by each, and thus how words and music create meaning.

1.4. *Summary: Linguistic and Musical Construction Grammar*

I will have more to say about sonic analogs in general, and their role in Harburg and Arlen's "Over the Rainbow" in particular, in what follows. For the moment, however, I would like to summarize the approach to musical grammar I have outlined and note some of its consequences for our understanding of musical meaning. Again, my work over the past decade has been focused on formulating an account of the basic features of a cognitive grammar of music. My assumption is that humans use a species of construction grammar to create musical utterances, in which basic constructions are form-function pairs. As one example of such a construction, consider the first four measures of "My Favorite Things" (given in measures 5–8 of Example 2). In formal terms, these measures set out the basic rhythmic framework of the tune (in part through providing a new note on the first beat of each measure), a registral space (from D4 to D5), and key elements of a G major tonality. (It is worth noting that these measures are typically harmonized with an E minor-seventh chord, but this is part of a set of larger compositional strategies that delay a clear statement of G major until the end of the tune.) These materials are then arranged to create a sonic analog for a cyclic dynamic process that suggests a potential — but only a potential — for forward motion.

21. Zbikowski (2008, p. 290 and 2012, pp. 153–160).

The function of these measures is thus as a kind of platform from which the remainder of the melody will depart, something confirmed when they are restated in measures 9–12. Contrast the compositional strategies used in the beginning of “My Favorite Things” with those used for the beginning of “Over the Rainbow” (given in measures 5–8 of Example 5). Here again the opening measures set out a basic rhythmic framework (although here the four-measure unit is divided into a 2 + 2 pattern), a registral space (in this case, from G4 to G5), and key elements of a G major tonality. The sonic analog created through this particular arrangement of musical materials is, however, rather different, as it suggests the initiation of a dynamic process that will continue to move forward after measure 8. (The reader can get a sense of the difference between the two openings by performing measures 5–8 of “Over the Rainbow” and then immediately repeating them. The result is not an affirmation of a cyclic dynamic process — as is the case with “My Favorite Things” — but the frustration of a forward-moving one.)

Correlations between sequences of musical events and dynamic processes of the sort I have just suggested might seem completely natural, but on the best evidence we currently have humans are the only species able to perform the complex analogical mappings that support such correlations, and that are basic to what I call analogical reference. I should also note that, as are analogies as a whole, analogical reference is shaped by context: whether we interpret a given dynamic process evoked by a sequence of musical sounds as a series of emotions, a pattern of bodily movement, or transformations performed on physical entities will depend on the context within which the analogy is drawn. In all cases, however, musical meaning begins with sonic analogs for dynamic processes. I should want to emphasize, however, that music is not unique in making use of analogical reference: as I noted, sound effects of various sorts typically employ sonic analogs, and the spontaneous gestures that accompany speech will often employ movement analogs for dynamic processes. Finally, language too can create sonic analogs: as Stravinsky noted in his observations on Russian folk poetry, the sequence of words and syllables, and the cadence they create, can also summon dynamic processes not unlike those of music.

With this perspective on musical grammar in hand, let me now proceed to a closer consideration of the kinds of meaning created by Harold Arlen and Yip Harburg’s “Over the Rainbow”.

2. Words, Music, and Meaning in “Over the Rainbow”

2.1. *The Movie and the Song*

In 1899, L. Frank Baum published a collection of nonsense verse for children with the title *Father Goose*, which turned out to be a significant commercial success. Building on this success, the following year Baum published *The Wonderful Wizard of Oz* which, if anything, was an even bigger success. The latter tale told

the story of Dorothy, a young girl growing up in the middle of the vast plains of Kansas, who was suddenly plucked up by a cyclone and dropped into the middle of the magical world of Oz, which included the fantastical characters of the Tin Man, the Scarecrow, and the Cowardly Lion. Within a few years the story had been adapted for the stage, and inspired Baum to write thirteen sequels to the book. It was not, however, until the story was turned into a screenplay and MGM's *The Wizard of Oz* released in 1939 that Baum's story achieved the status of legend. Building on Baum's original treatment (which described Dorothy's home in Kansas as unrelentingly gray) the first part of the movie was filmed in black and white, and the magical world of Oz in Technicolor; although Technicolor was no longer novel in the late 1930s, the two different modes of visual presentation fed directly into the narrative of the film. This felicitous match of story and technology was further supported by MGM's decision to use one of its young stars, Judy Garland, in the role of Dorothy, and by the integration of songs written by Yip Harburg and Harold Arlen into the plot of the story as a whole.

As it happens, "Over the Rainbow" is the first song in the movie, and it appears in the context of Dorothy's having suffered a sequence of minor trials and tribulations: Miss Gulch, a crotchety old neighbor, has committed a physical offense on Dorothy's little dog Toto and has threatened to take the dog away from her; her Uncle Henry and Aunt Em, in the midst of pressing farm work, have turned a deaf ear to her complaints about Miss Gulch; the farm hands, occupied with their own work, have had even less time for her; and she has managed to fall into the pig pen. After she is rescued by one of the farm hands Dorothy's Aunt Em pleads with her stay out of the way and, reflecting on her troubles, Dorothy is then moved to sing "Over the Rainbow", a soliloquy (as can be seen in the still from the film given in Figure 1) attended only by Toto; the score for the song is given in Example 7.²² Although I shall want to devote some attention to the words Harburg wrote for the song, for the moment my main focus will be on Arlen's music. While my decision to do so reflects the overall argument I wish to make, it bears mention that "Over the Rainbow" began with Arlen's melody and a general conception of the role the song should play in the film; it was only after the melody was more or less complete that Harburg came up with the words.

22. To facilitate comparison with Rodgers and Hammerstein's "My Favorite Things" I've transposed the melody of "Over the Rainbow" to G major; the published version of the song is in E-flat major, and Garland sings it in A-flat major in the film. Although the latter would be notated a half-step higher than Example 7, Garland's contralto sounds an octave lower.



Figure 1: Still from MGM's *The Wizard of Oz* (1939) of Dorothy (Judy Garland) singing "Over the Rainbow".

G Em7 Bm7 G7 Cmaj7 C7 Bm7 Bb7 Am7 Cm6 G/D E7(b9)
 Some - where o - ver the rain - bow way up high, there's a land that I heard of
 7 A7 D13 G Am7 D7 G Em7 Bm7 G7 Cmaj7 C7 Bm7 Bb7 Am7 Cm6
 once in a lull - a - by. Some - where o - ver the rain - bow skies are blue, and the
 14 G/D E7(b9) A7 D13 G G
 dreams that you dare to dream real - ly do come true. Some - day I'll wish up - on a star and
 18 Am/G D7/G G6 Am7 D7(b5) G
 wake up where the clouds are far be - hind me. _____ Where trou - bles melt like lem - on drops, a -
 22 A#o7 Am6 Am7 D9(#5) G Em7 Bm7 G7
 way, a - bove the chim - ney tops that's where you'll find me. Some - where o - ver the rain bow
 27 Cmaj7 C7 Bm7 Bb7 Am7 Cm6 G/D E7(b9) A7 D13 G
 blue - birds fly, Birds fly o - ver the rain - bow, why then, oh why can't I?

Example 7: Harold Arlen and Yip Harburg's "Over the Rainbow"
 (© 1939, renewed 1966, Metro-Goldwyn-Mayer Inc.).

Perhaps one of the most remarkable things about Arlen's tune is the octave leap with which it begins, a gesture that opens up a registral space that is then gradually filled in over the rest of the first phrase. The phrase as a whole divides into two halves:

the end of the first half is marked by the long D5 of measure 4, and the end of second half by the return to G4 in measure 8. As befits a tune conceived of as a ballad (in terms of the generic categories used for movie musicals) the progression of pitches is for the most part measured and stately; in measure 2, however, that progression is pushed along a bit by a rhythmic figure that proceeds mostly in quarter notes, with two eighth notes pushing toward the second main beat of the measure. This same rhythmic figure is then employed in the second half of the phrase in measures 6 and 7, a repetition that pushes the music forward toward its concluding note. The rhythmic repetition is abetted by a melodic sequence — measure 7 is simply measure 6 transposed down a step — and a circle-of-fifths harmonic progression completed by tonic in measure 8. Perhaps a more important melodic sequence occurs in measures 3 through 6, when the ascending major sixth of measure 3 (G4–E5) is restated as an ascending minor sixth in measure 5 (E4–C5). On the one hand, the repetition of the gesture pulls together the two halves of the phrase; on the other hand, the major sixth of measure three sounds noticeably bright when compared with the minor sixth of measure 5. (It bears mention that the first note of that minor sixth also marks the lowest boundary of the melody as a whole.)

As should be apparent, Arlen's melody for "Over the Rainbow" is a well-crafted thing; what may not be as apparent is its uneasy fit with the character of Dorothy in the film. Again, Dorothy is meant to be a little girl who has childish thoughts and concerns; Arlen's melody, with its soaring intervallic leaps and magisterial sweep, bespeaks a character overwhelmed by yearning and emotions quite beyond the scope of a little girl. Indeed, Harburg at first believed the song was too old and too daring for the character, an impression abetted by the majestic and serious way Arlen played the song as he was writing it.²³ Harburg was, however, eventually convinced the song could work, especially after Arlen wrote the much simpler and more childlike bridge section (measures 17–24), with the simple alternation of pitches that, as I noted above, is often re-purposed to provide an introduction.

In summary, then, Arlen's music forms a coherent whole, the main sections of which provide a sonic analog for a dynamic process that is almost athletic, and always assured, suggesting an utterance motivated by strong emotions. Indeed, the opening octave, which motivates much of what follows, could be thought of as what Gilles Fauconnier calls a space builder,²⁴ with the subsequent music filling out a mental space in which musical leaps that are almost physical alternate with compact melodic sequences that impart a clear sense of direction to the whole. (The notion of a mental space, which can be thought of as a relatively small conceptual packet built up for purposes of local understanding and action, will be developed further in the sequel.) Although the melody for the bridge section modifies this mental space somewhat, it also serves as a device to delay the inevitable return of the opening melody, a means of building tension that can clearly be heard in the

23. Harmetz (1984, p. 78, p. 80).

24. Fauconnier (1985).

way Judy Garland shapes her high note in measure 24 just before the final return of “Somewhere, over the rainbow”: she thins her tone just a little on the high A5, lets it blossom with vibrato sustained through a *rallentando*, and then gracefully and almost imperceptibly slides down to the E5. While Garland as Dorothy might project some sense of childlike innocence in the bridge, Garland the performer remains every bit as much in control as she was in the athletic and assured music of the opening eight measures.

2.2. *Words, Music, and Conceptual Blending in “Over the Rainbow”*

Let me now turn to the lyrics Harburg provided for Arlen’s tune to explore ways words interact with music in “Over the Rainbow”. As does Arlen’s tune, Harburg’s lyrics open with a space builder: “Somewhere, over the rainbow”. This locution summons an imaginary, positive space that, for many familiar with Judeo-Christian traditions, is one filled with promise. In that space, skies are blue (unlike those associated with the rainy weather that precedes a rainbow) and dreams come true. This is, of course, a space that only a child could really believe in (or so Harburg would like us to believe): redolent of lullabies, it is a domain within which troubles melt like lemon drops; indeed, the wish to inhabit this space prompts childish regret at not being able to fly. What becomes clear, then, is that the imaginative realm initiated by the space builder “Somewhere, over the rainbow” is one that could only be truly inhabited by a child: the words for the song do not describe the imaginary world ‘over the rainbow’ but the character of the child who believes in that world. (Indeed, this aspect of the song — its embodiment of a yearning for childish innocence — is perhaps one of the reasons it continues to be used by a wide range of performers to project an artless, uncomplicated persona that stands in marked contrast to their careful cultivation of musical skills and the complexity of their professional lives.)

Of course, Harburg’s lyrics are not simply a bit of rhyming verse but the words to a song for which Harold Arlen wrote the music.²⁵ Elsewhere I have argued that certain combinations of words and music create a realm for the imagination that extends far beyond what words or music alone could summon, and have studied these combinations using the technology of conceptual integration networks.²⁶ Such networks were developed by cognitive linguists for the study of cross-domain mappings in which concepts from the correlated domains are combined — or “blended” — in novel and sometimes unexpected ways.²⁷ Example 8 provides

25. On relationships between verse, poetry, and song see Booth (1981, pp. 1–26).

26. Zbikowski (1999, pp. 307–435; 2002, chap. 6; 2006).

27. The classic study that provided a significant impetus for the development of cognitive linguistics was George Lakoff and Mark Johnson’s *Metaphors We Live By* (1980). One of the early studies of conceptual blending that set out methodologies for conceptual integration networks was Gilles Fauconnier and Mark Turner’s “Conceptual Integration Networks” (1998). A fuller account of the theory of conceptual blending can be found in Fauconnier and Turner (2002).

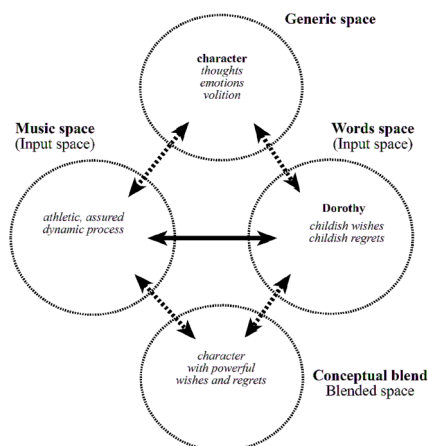
a diagram for a conceptual integration network for Harburg and Arlen's "Over the Rainbow" which captures a number of aspects of the process of conceptual blending that can occur when words and music are brought together in a structured relationship.

- The process of conceptual blending typically begins with two correlated mental spaces that provide the basic input for the network; here, these are the "music" space and the "words" space. The solid double-headed arrow linking these two circles indicates that concepts from each space are correlated with one another — that is, the linkage between these two spaces is created not simply by their co-occurrence in time but through shared conceptual structure. The relevant conceptual content from the "music" space involves the athletic, assured dynamic process for which Arlen's music provides a sonic analog; the relevant conceptual content from the "words" are the childish wishes and childish regrets summoned by Harburg's lyrics.
- According to the theory of conceptual blending, the combination of concepts that are drawn from the input spaces is supported and guided by more abstract concepts shared between the input spaces; these are typically represented in a hypothetical structure called the generic space located at the top of Example 8. In the case of the present conceptual integration network, I have proposed that these more abstract concepts circulate around the notion that a given character — whether real or imaginary — has thoughts, emotions, and volition. (Although this might seem a rather simple idea, note the effect it would have if the "character" was one attributed to an inanimate object such as an automobile.) Dashed, double-headed arrows link the generic space with the two input spaces, suggesting that concepts are projected from the generic space to the input spaces, and that the conceptual content of the input spaces can inform the generic space.
- The linkages between the input spaces, which reflect the shared conceptual structure captured by the generic space, make possible the selective projection of concepts from the "music" and "words" spaces into the conceptual blend. The result is a character with powerful wishes and regrets, and the agency to act on those wishes to address those regrets. Once we enter into the imaginative domain inhabited by such a character we can imagine actions she might take, and what she might do were she confronted by other obstacles. And indeed, Dorothy is shortly to be confronted by such obstacles when she enters the magical world of Oz.

It should be noted that while conceptual integration networks can be useful for the analysis of the process of conceptual blending they can give rise to the impression that this process is in some measure atemporal. Diagrams such as Example 8 are better thought of as a snapshot of an ongoing process, capturing essential features of that process but leaving out its development over time. It also

bears mention that my use of conceptual blending here is more to illustrate the different ways words and music contribute to the construction of meaning than it is to give a complete exposition of the structure and process of conceptual blending or the role blending plays in semiotic systems.²⁸

The meaning created through the combination of Arlen's music with Harburg's lyrics, which attributed to the character of Dorothy powerful emotions and a rather too-mature sense of agency, created something of a problem for MGM's *Wizard of Oz*. As she is presented in Baum's book and as she functions within the conceit of the movie Dorothy is unambiguously a child: both her problems and the means through which she might deal with them are those of a child. Not so for the character projected by "Over the Rainbow": although the thoughts and wishes expressed in the song remain those of a child, the yearning and agency suggested by the music leave little doubt that Dorothy is a force to be reckoned with. Although it might seem that this interpretation reads quite a lot out of "Over the Rainbow" — can it really be that this song is inappropriate for a character as innocent and guileless as Dorothy is meant to be? — the fact remains that "Over the Rainbow" was cut from *The Wizard of Oz* after its first preview. There then ensued a pitched and protracted battle over the matter of including the song in the film, a battle that was finally won by Harburg, Arlen, and their supporters.²⁹ We cannot know, of course, why the song was cut (or reinstated), but given Harburg's reservations about how well Arlen's melody was suited to Dorothy's character it could well be that the conceptual blend I have sketched explains the discomfort of the studio executives at MGM.



Example 8: Conceptual integration network for Harold Arlen and Yip Harburg's "Over the Rainbow".

28. With regard to the role of blending in semiotic systems see Brandt and Brandt (2005).

29. Harmetz (1984, pp. 81–82).

3. Conclusion

By way of conclusion let me summarize some of the points I have made in this chapter. First, I have proposed that music and language have different functions in human cultures and that, as a consequence, they employ different kinds of grammar that rely on different kinds of reference. As I have already noted, while language relies predominantly on symbolic reference it can also make use of analogical reference (as suggested by Stravinsky's observation about Russian folk poems); while music relies predominantly on analogical reference work on topic theory suggests that it may make use of symbolic reference.³⁰ On the whole, however, the two media offer different resources for communication: music is indeed a means of expression, but the things it expresses are different from those expressed by language. I should also emphasize that my concern has been with the *basic* functions of language and music in human cultures, and that both communicative media can realize more than simply these basic functions. One of the ways music does this is through the coordination of different syntactic layers: indeed, my view is that it is possible to create sonic analogs through rhythm *and* melody *and* harmony, and that skilled composers and improvisers coordinate all of these different syntactic layers (and others besides) to create their musical utterances.

With my analysis of "Over the Rainbow" I have also shown how concepts summoned by words and music could be blended together to create rich mental spaces within which the imagination can flourish. There is, of course, much more that could be said about the process of conceptual blending and its application to music, but my aim was less to give a demonstration of blending and more to show the different ways that words and music contribute to the construction of meaning. More broadly, I propose that a communicative medium is shaped by the mode of reference it employs, by the perceptual resources (such as audition or motor movement) that it activates or exploits, and by its cultural function. Through analyzing how all of these aspects are coordinated we can come to a better understanding of how communicative media like words and music give rise to that special species of significance we call meaning.

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30. Mirka (ed., 2014).

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