Introduction and definitions

Bringing together language and music in creative activities opens up several promising routes for investigation. Language and music occur in every human society, regardless of the presence or absence of other cultural aspects (Nettl, 1983; Patel, 2008). By exploring similarities and differences between language and music, we can better understand how each of these two modes communicates or expresses creativity.

Some music terminology will be used throughout this chapter, which I shall define now. With a focus on popular and classical music, Levitin (2006) lists seven major elements of music:

• pitch – the frequencies that we hear in the music;
• rhythm – the duration and flow of notes, or musical events, within the music over time;
• melody – a group of notes or sounds over time, as a prominent linear sound within the music;
• harmony – groups of frequencies sounding together within the music that collectively establish musical context via chords or concurrent accompanying sounds;
• tempo – the general speed of the music;
• metre – the underlying regular ‘pulse’ of the music; and
• loudness – the volume and magnitude of the musical sounds.

Thinking about music from a broader perspective, we can add to this list two more major elements:

• timbre – the acoustic qualities of the sound that help to characterise that sound; and
• space – the spatial characteristics of the music, in which the musical sounds are located.

All of these aspects have a corresponding aspect in speech, helping to shape the sound of what is being spoken. For example, we can discuss the ‘timbre’ and the ‘pitch’ of a voice, referring to the sound of speech. If a man and woman talk in unison, their voices usually shift in pitch so that they become an octave apart, relative to each other (Levitin, 2006), as it would do if they were singing a song in unison (Jackendoff & Lerdahl, 2006).

This chapter examines critical issues around crossovers, parallels, and similarities between language and music that justify multimodal work. I will also acknowledge differences...
between these two modes and any resulting constraints placed on multimodal work, because differences can be as informative as similarities in studying each mode. I will examine current contributions and research that combine creativity in both language and music, either practically or methodologically. Looking towards future directions in this area, I will consider creativity from a more general perspective, seeing how creativity transcends different modes to some degree, while still retaining some characteristics specific to individual modes. To illustrate this, I will look at a case study that uses principles from the study of language to identify key aspects of creativity both in general and in the specific case of musical improvisation.

**Historical perspectives, critical issues, and topics**

Language and music both play a key part in our lives, being two human capabilities ‘that both involve complex and meaningful sound sequences’ (Patel, 2008: 3). Various crossovers and parallels exist between language and music, which support the intertwining of these two modes. For instance, language and music share some neurological processes, and there are also theoretical and developmental models that support both modes of creativity. Some go as far to say that music *is* a language, although this is far from universally accepted. To lay the foundations for multimodal work, then, we should establish to what extent we can justifiably claim valid overlap between the two modes.

**Music as a language**

Music is sometimes treated as a language in its own right. Cooke (1959) sees music as a language focused on expressing emotion, an interpretation supported by Mithen (2005: 24–5). Musical scores (music in written form, like that at which we will look later in the chapter in Figures 19.1 and 19.2) have been likened to a communicative language by Magnusson (2011: 19), who asserts that ‘the traditional score has evolved into a highly sophisticated language for encoding musical expression with various idiosyncrasies or personal styles’. Beyond the traditional musical score, music-based languages range from jargon terms and expressions for specific musical styles, through to languages for expressing music in different formats, and even to computational music generation languages.

Treating music as a language is by no means a universally accepted approach. Treitler (2007: 265) considers perceptions of ‘the limited capacity of language to describe music’, pointing out that music conveys concepts that cannot be put into words. (Treitler notes, however, that language can also be ambivalent, with semantics equally difficult to pin down.) Ethnomusicologists treat music as ‘human sound communication outside the scope of language’ (Nettl, 1983: 24). In other words, in communication, music is anything that is not language; hence the two are complementary and mutually exclusive. To an ethnomusicologist, therefore, sound and communications are either music or language – but not both. How, though, does singing fit into this ethnomusicological definition? Or scat singing (in which random syllables are sung as words to a melody)? Mithen (2005) cites another counter-example: John Cage’s 1952 work *4:33* (4 minutes and 33 seconds during which the performers’ directions are to be *tacet* – that is, not to play) (see Jaworski, Chapter 20).

It therefore appears that although some are comfortable treating music as a language, this is a contentious stance. Having said that, dividing lines drawn between language and music seem somewhat fuzzy – an issue to which Nettl (1983) later returns and critiques in his suggestions for ethnomusicological research. On the whole, a safer position for multimodal
work is to acknowledge the many shared similarities between language and music, while remaining mindful of notable differences – the topic that I address next.

**Similarities and crossovers between language and music**

As we have just seen, it is debatable whether music can be considered to be a language. Nonetheless, a diverse range of similarities can be drawn between language and music. These help to validate the multimodal combination of language and music, as well as show the potential for such combinatory creative work.

Both language and music require human capabilities in which we learn and develop competence, typically involving the generation and interpretation of sound. These capabilities are embodied in behaviours that are enhanced by interaction, gesture, and/or movement, consciously or subconsciously. Music is intrinsically linked to people’s movement and participation on many levels and in many cultures. Similarly, speech is linked to body language.

Both language and music involve the processing of syntax and semantics. Language and music can both be structured according to grammatical rules, which help to structure longer phrases. Both tend to be structured hierarchically and can be grouped into elements at different hierarchical levels, increasing in size as we move up the hierarchy. A group of words (or notes) may transmit different meanings to the individual words (or notes), for example idioms and sayings (words), or musical cadences or chord progressions (music).

Language and music can both be used to communicate information and be assigned specific associations. Mithen (2005) gives as an example a television or radio programme’s theme tune, which would be strongly associated with its corresponding programme. In language, catchphrases can be created to convey specific meanings. More generally, both modes can be used to express meaning to varying levels of significance and ambiguity, depending on context. A caveat here, though, is that language and music do not convey meaning in quite the same way or to the same degree: musical meaning generally contains more ambiguity and is more open to interpretation than linguistic meaning. ‘Both forms of communication are processed auditorily,’ say Gfeller, Asmus, and Eckert (1991: 128), ‘but speech is much more efficient in transmitting specific referent information.’

Rhythm and metre, two key crossover elements in language and music, enhance the effective and clear communication of what information is being transmitted in language and in music (Levitin, 2006; Mithen, 2005). Although rhythm is generally seen as more significant in music than in language, rhythms can be strongly associated with speech patterns. For example, the phrase ‘shave and a haircut: two bits’ (see Figure 19.1) and its associated rhythm are exploited in the plot for the 1988 film *Who Framed Roger Rabbit*. Being pursued and hiding from his pursuers, Roger Rabbit is tempted out of his hiding place against his will because of his inability to hear the first part of this rhythmic phrase without being compelled to complete the full phrase. Similarly, cue phrases can be used in music pedagogy to teach specific rhythms. This author recollects using the phrase ‘a cup of tea’ when learning to play triplet rhythms in one hand on the piano against duplet rhythms in the other.

![Figure 19.1 The ‘shave and a haircut: two bits’ rhythm featured in the plot of Who Framed Roger Rabbit (1988)](image-url)
Interactive behaviour with language and music on a broader level can also help us to develop and enhance our creative capabilities, especially in early childhood. According to Chen-Hafteck (1997: 95), ‘music and language should be closely related in education. The interaction between the two in children’s thinking may enhance the development of each other as well as creativity in both musical and linguistic expression’. A more recent review (Hallam, 2010) also finds that greater developments in creativity are likely when music lessons incorporate more creative explorative tasks, such as improvisation, as opposed to more didactic lesson formats.

Another area of similarity between language and music is in the expression of emotion. Many similar acoustic devices are used across both language and music for conveying emotion in each mode, including speed and tempo of delivery, pitch, and the extent of variability or regularity. Reviewing 155 studies on emotion in musical performance, Juslin and Laukka (2003: 797) found that ‘the present findings strongly suggest that music performance uses largely the same emotion-specific patterns of acoustic cues as does vocal expression’. They also argue that ‘there are emotion specific patterns of acoustic cues that can be used to communicate discrete emotions in both vocal and musical expression of emotions’ (Juslin & Laukka, 2003: 794). This leads to a hypothesis that ‘music may really be a form of heightened speech’ and that our brain treats the sounds of musical instruments as the performances of ‘superexpressive’ voices (Juslin & Laukka, 2003: 805).

Neurologically, several points of overlap exist in the processing of language and music. Both language and music are human behaviours that are believed to have been present in early Homo sapiens society (Mithen, 2005). While the study of cognitive or neurological connections between language and music is in its very early stages, several meaningful discoveries have, however, been made from studying these connections. In the brain, Wernicke’s area and Broca’s area had been believed to be specifically for language processing, but Koelsch and colleagues provide evidence that these areas are also active in processing musical harmonies (Koelsch et al., 2002), musical syntax (Koelsch et al., 2005), and musical semantics (Koelsch et al., 2004).

There are also numerous points of contact between musical and linguistic melody in terms of structure and processing (Patel, 2008: 238). Neural overlap areas can be further developed through musical training as a result of the brain’s ability to reorganise itself in response to damage or to repeated changes in stimuli (Mithen, 2005). Musical training appears to shift some musical processing from the right hemisphere of the brain to the left hemisphere, as musicians learn to talk about – and perhaps think about – music using linguistic terms (Levitin, 2006). Specifically looking at creativity, Petsche (1996) uses electroencephalography (EEG) and coherence analysis to reveal brain activity patterns common to the neural processing of both language and music during creative mental tasks, compared with performing mental tasks designed to be non-creative.

Cognitively, we perceive music and speech in very similar ways when we hear it. Both speech and musical sound are segmented into different dimensions for us to be able to understand the incoming sound as a whole. We group together multiple incoming signals (for example sounds, voices, music). We can distinguish one particular stream of sound if we focus on it – a phenomenon in speech termed the ‘cocktail party effect’ by Cherry (1953), and in music as ‘auditory scene analysis’ by Bregman (1990). Using spatially and time-based cues, combined with some assistance from predictions and expectations, we can also fill in missing information or speed up processing, by anticipating what comes next (Huron, 2006; Lerdahl & Jackendoff, 1983; Levitin, 2006; Patel, 2008). The role of expectation is common to language and music because of a key similarity: both language and music
Language and music

Language and music unfold over time, presenting different information as time progresses (unlike, for example, looking at a painting, during which the information from the painting remains the same and does not change over time) (Kress, 2010). As Mithen (2005: 66) writes, ‘tonal knowledge creates expectations about what pitches will follow each other, especially when a piece of music comes to its end’.

Speech and music are also interlinked through the different ways in which they employ pitches, and patterns of movement between pitches. Prosody refers to the melodies and rhythms in speech, incorporating various aspects that cross language and music, including tone, pitch, accent, and stress. Generating and interpreting prosodic cues involves creative language and music skills. For example, in English, the spoken voice may rise in pitch at the end of a question, indicating the need for activity from the listener (to respond to the question), or fall in pitch to indicate the end of a statement. Such prosodic cues in language correspond to musical cultural conventions that we learn (Levitin, 2006). Patel (2008: 224) argues that ‘implicit learning of prosodic patterns in one domain (ordinary speech) influences the creation of rhythmic and tonal patterns in another domain (instrumental art music)’, whether consciously or subconsciously.

Pitch movements can also dictate semantics in some spoken languages. In tonal languages (also referred to as tone languages), pitch plays a key role in determining the meaning of a word, distinguishing between alternative meanings for the same lexical string. Two types of tonal language exist: level-tone, or register-tone, languages, such as the Bantu languages of West African languages, in which the pitch at which words are uttered remains the same throughout that word; and contour-tone languages, such as Mandarin Chinese, in which the pitch changes over the duration of the word. Tonal languages can use between two and five pitches, relative to and dispersed over the pitch range of an individual speaker. Tonal languages sit in contrast to non-tonal languages such as English, in which the meaning of a word is not directly controlled by how it is pitched. More than half the languages in the world are tonal; tonal languages are particularly common in South-East Asia and Africa (Patel, 2008). Native speakers of tonal languages are more likely than speakers of non-tonal languages to have absolute (or ‘perfect’) pitch (Deutsch et al., 2006) – that is, they are able to identify the pitch of notes that they hear even if they hear them in isolation, without any other pitches to which to make reference. As Jackendoff and Lerdahl (2006) point out, however, the comparison between tonal languages and musical use of pitch is not entirely analogous. As tonal language speakers speak, the range of tones used tends to drift downwards, and there is an accompanying decrease in the difference between high and low tones being used. In music, pitches stay at (or near) fixed frequencies.

Differences between language and music

Thus far, I have mostly discussed how language and music are governed by similar principles or complement each other, to see how multimodal studies of creativity are appropriate. At the same time, however, it is necessary to acknowledge differences between music-based and language-based creativity. This helps us to avoid the pitfalls of building too strongly on similarities, unaware of the extent to which those similarities are valid.

One question arises over whether music evolved in its own right (probably from a similar root to language) or human musical capabilities have developed only because we developed language facilities. As Mithen (2005: 11) asks: ‘Is [music] simply an evolutionary spin-off from language . . . [or] adaptive and as deeply rooted in our biology as language?’ Brown’s (2000) ‘musi-language’, Wray’s (1998) ‘proto-language’, and Mithen’s (2005)
'Hmmmmmm' all describe a single evolutionary predecessor of both language and music, from which Mithen, Wray, and Brown posit that language and music both developed. Other theories are that language and music evolved in parallel, but independently, then later developed shared neural circuits. An alternative view of how musical capabilities evolved, as proposed by Pinker (1997), is that music is ‘auditory cheesecake’ – that is, an inessential side effect of our evolution of the ability to perceive and process linguistic sound. These controversial remarks have not been left unrefuted. Several authors critique Pinker’s assertions as being misleading, ill-informed, or just plain incorrect (Carroll, 1998; Cross, 2001; Levitin, 2006; Mithen, 2005). Specifically on the focus of this volume, creativity, Carroll (1998) points out the importance of people being exposed to creative works in music, art, or literature, which helps them to develop an ability to deal with complex and changing scenarios in creative ways. If music is purely ‘cheesecake’, then it offers little other than sensory stimuli. In rebuttal, Carroll (1998: 482) argues that music (and art) actually play a ‘vital role... in the healthy development of human beings’, and that creativity offers evolutionary adaptive advantages.

Language and music are not completely co-dependent behaviours. Studies offer contradictory evidence of the extent to which linguistic and musical abilities are independent. People can function musically, but not linguistically, or vice versa – or they can develop problems functioning in either mode (Mogharbel et al., 2006; Patel, 2008; Tudor et al., 2008). There are also physical differences in how we perceive pitches and melodies in speech and language. To perceive different pitches, we construct a tonotopic map on the basillar membrane of the inner ear: a map of frequencies that is directly mapped in two dimensions on to the auditory cortex. ‘[F]or pitch, what goes into the ear comes out of the brain!’ says Levitin (2006: 29).

There is no equivalent direct mapping within the brain for any language phenomena (assuming that we disregard prosodic attributes of speech). Furthermore, although some principles of melodic structure transcend both language and music, Jackendoff and Lerdahl (2006) and Patel (2008) highlight differences between linguistic melodies and musical melodies. The organisation of actual pitches used tends to vary (in music, pitches are usually taken from a fixed set of pitches, but in language, pitches are relative to the speaker’s range). Jackendoff and Lerdahl (2006) also highlight other related differences that are peculiar to music, such as the existence of dissonance within a tonal space.

Taking musical elements of spoken language more generally, musical rhythm and speech rhythm are not completely alike: there is an element of periodicity or recurring metrical structure in many types of music that is not present in most spoken language. We should note, though, that periodicity is absent in some music styles, such as plainchant or some contemporary music. Generally, rhythmic elements in speech still have much in common with musical rhythm.

Other differences between language and music can be noted in how each mode is manifested in communication. Linguistic communication tends to involve an active speaker and passive listener, with those roles possibly changing, such as in conversations. In Western classical music, we often see the distinction between musical performers and listeners, but if we consider music more generally, then such distinctions can become more blurred. Emphasis is on active participation, rather than performance to passive listeners, for example when improvisers are listening to each other and playing at the same time, or in collective music-making scenarios such as in tribal groups (see Sawyer, Chapter 4).

These differences show us that care is needed when working with language and music. Although the two modes have much in common, there are limits to those commonalities
of which we should remain mindful when conducting multimodal work with creativity in language and music.

The next section in this chapter considers existing creative research and practice areas combining language and music that have successfully navigated across these modes.

**Current contributions and research**

Musical creativity can take a variety of forms, including composing music, musical improvisation, and performance, accompaniment, and interpretation of existing music. We can be creative with our choice of instruments or voices for a piece of music, and with our sonic, timbral, and harmonic choices during music creation and interpretation. Other ways of being creative with music include remixing or rearranging music, reinterpreting music in new ways, or performing music in new creative contexts, and many more.

This chapter focuses on creativity that combines music with language in some way. How can one be creative with language and music? Language is an integral part of many musically based creative activities (and vice versa). Composition and improvisation are creative activities that can occur using language or music. What we can generate both in music and in language is infinite in its possibilities; neither mode is necessarily bounded by constraints of size, maximum length, and so forth. This section presents demonstrative examples (rather than a comprehensive list) of interesting work currently being done with creativity in language and music.

**Creative activities combining music and language**

There are many crossover activities that necessarily require creative activity with both words and music. One example is song writing. Setting lyrics to music typically involves matching the linguistic accented syllable patterns with the metrical accents in the music. These activities are also relevant for poetry, in which part of the creative act revolves around metrical settings of words. ‘For the [Ancient] Greeks, music and poetry were inseparable,’ says Storr (1992: 14). In fact, the word ‘melody’ originally derives from the Ancient Greek word *melos*, which referred both to the words of poetry and to the music to which the poem was set. The Suyá people, an Amazonian tribe, exemplify a modern-day culture that hardly distinguishes between song and speech, but instead treats song and speech as essentially the same form of communication (Seeger, 1987).

In Western interpretations of song, musical and linguistic meanings are intimately connected. To illustrate, Patel (2008) gives examples of word painting: a feature of songs in which the meanings of words are enhanced with musical content, such as the way in which melodic contours in the American Spiritual song ‘Swing Low, Sweet Chariot’ underline the meaning of the lyrics (for example the use of a low note on the word ‘Low’ to paint the phrase ‘Swing low’). Word painting is only one way in which music can enhance the lyrics of a song. In song writing, musical choices can complement – or contradict – the meaning of lyrics to creative effect, such as using stable tonality to underline lyrics about peace and stability (or contradicting such lyrics with occasional use of dissonant notes, to indicate that those lyrics may not be intended to convey quite so peaceful and stable a scene after all). Musical genres also affect how language is used for lyrics, for example in operettas, stressed syllables in the lyrics tend to align with strong beats in the music, whereas for rock songs, verbal stresses often occur slightly ahead of strong beats (Patel, 2008: 156).

Introducing multiple languages into song writing opens new avenues for creativity, as Chik (2010) has found within pop music in Hong Kong, a multilingual and evolving culture.
Chik reflects on how the creative use of English complements the musical conveyances of this song genre at different levels, for example to add comic effect (if pronounced with a highly exaggerated Cantonese accent) or to reinforce an intention to represent the idea of modernity within the song. The addition of English to Cantonese pop (‘Cantopop’) has widened the creative space of possibilities for pop composers in recent decades, towards a ‘new genre of English creativity’ (Chik, 2010: 521).

‘Spoken music’, such as chanting, rap, funk, hip hop, and beatboxing, combine speech and music for creativity in a multimodal setting. Alim and Pennycook (2007: 90–1) discuss the development of linguistic diversity in hip hop, considering ‘limited language’, ‘ill literacy’, and the development of ‘ever free-forming and flowing’ language. They consider how hip hop expresses socially or politically charged messages about power, politics, or identity through creative multimodal communication. Similarly for funk music, Morant (2011) illustrates the history of a spoken tradition being transferred into musical interpretations through a language-based musical genre.

Creativity is often demonstrated through remixes combining speech and music, such as Eminem’s ‘Stan’ (2000), which samples Dido’s song ‘Thank You’ (1999). Eminem’s use of ‘Thank You’ significantly changed the semantics of the original Dido song. The sampled lyrics sung by Dido express sombre, mildly depressed thoughts and reflections. Dido’s song originally moved on to considerably more positive and uplifting lyrics in the chorus, complementing the more melancholy verse lyrics that Eminem sampled. The version by Eminem did not include the positive chorus lyrics and instead added additional lyrics that were more aggressive, with greater negative sentiment (describing a fan writing to his or her idol and becoming increasingly angry by the lack of reply). Songs such as ‘Everybody’s Free (to Wear Sunscreen)’ (released by Baz Luhrmann in 1998) also see speech placed over existing music. The original speech, written by Chicago Tribune columnist Mary Schmich in 1997, was made to students on their graduation day, and advised them how to live life successfully and happily. The remix places the speech itself in a new context with different emphases and, presumably, a quite different entertainment effect for its listeners. Considering performances of language that incorporate non-linguistic modalities, Bell and Gibson (2011: 566) reflect that ‘[t]he music sets up the interpretations which may be taken from the words’.

**Employing one mode in the context of the other**

In creative works that are strongly associated with one mode, music or language, one can be creative through appropriate use of the other mode. For example, Storr (1992) reports how the author James Joyce considered the sound of words in his writing, especially in later works. Directly incorporating music alongside language has been shown to enhance creativity and expressivity in digital storytelling (Bran, 2010; Yang, 2012). Another example of creatively using music in a linguistic mode is in the full title of Dueck (2013: 91), which includes the musical score of a famous jazz ending discussed in the paper, ‘The Ellington ending’ (see Figure 19.2).

![Figure 19.2](image-url)
Background music has also been shown to assist creative language-based tasks such as expressive writing (Gonzales et al., 2010) and interpretation of speech by listeners (Gfeller, Asmus, & Eckert, 1991). Computational work by Monteith and colleagues (2011) has taken advantage of background music’s effects on language, with their software program generating emotionally targeted soundtracks to fairy tales. The soundtracks, well received by listeners, use text analysis to identify emotions within the tales, the results of which guide the generation of appropriate music.

Language can also be used creatively in musical domains. Consider Levitin’s (2006: 92–3) description of the second movement of Haydn’s 1791 Surprise Symphony, which depicts how the music ‘builds suspense by using soft violins’, creating a ‘soothing’ sound that nonetheless ‘sends a gentle, contradictory message of danger’ through the use of pizzicato (very short) notes. Levitin’s interpretations help to illustrate what is happening in the music. Similarly, music-theoretical terms used to describe intervals between notes such as ‘the perfect fifth’ and ‘the devil’s interval’ provide added information about how that interval is interpreted musically. Another example is in Lopez Rúa’s (2010) findings about how alternative music artists make creative use of language in choosing band names, to help to establish their musical identity and style.

**Theoretical and methodological crossovers between language and music study**

Crossovers between language and music creativity also occur at more theoretical or methodological levels. Language-based methods have been cross-applied for creative musical purposes and vice versa. For example, narrative-based methods have been used to trace linear development in musical works, and to discover new perspectives and interpretations (McDonald, 2004; Nattiez, 1990). Statistical models used in linguistics, such as n-gram models or hidden Markov models, have been applied for computational analysis and generation of music (Chan & Ventura, 2008; Conklin, 2003; Jordanous & Smaill, 2009), as have musical grammars (models containing rules about the grammatical structures within music) (Gillick, Tang, & Keller, 2010; Lerdahl & Jackendoff, 1983; Steedman, 1984).

Although poetry may be seen as a primarily linguistic activity, the use of rhythm in poetry often mirrors the use of rhythm in music, particularly in the creative use of expressive timing. Exploiting this, Lerdahl (2001) explores the potential of treating poetry as music, analysing a short poem by Robert Frost in crossover areas such as syllabic stress, grouping principles, and implied underlying metre. For example, in using music-analytic techniques to enhance prosodic analysis, Lerdahl (2001: 349) makes discoveries about the recurrence of sounds in the structure of the poem’s sounds, using ‘prolongational’ theory from music. Accordingly, he posits that musically oriented analysis helps in developing complementary approaches to the study of poetry, such as exploring text setting through theoretical models.

**Mode-specific requirements for creativity**

Having considered various examples of multimodal creative work, it is now time to consider in more detail the concept of multimodal creativity itself. There is debate over whether creativity exists at a generic (abstract) level, such that there is a ‘creativity’ that transcends specific manifestations in different creative modes (the proposition argued by Plucker, 1998). The alternative view is that creativity is mode-specific (Baer, 1998; Csikszentmihalyi, 1988); therefore musical creativity is a different entity from linguistic creativity.
Baer (1998) argues that it is safer for researchers to assume that creativity is mode-specific and offers several examples in which creativity in one mode does not necessarily correlate to creativity in another, as judged by experts in each mode. This view, however, does not account for ‘multipotentiality’, whereby people have creative achievements in more than one creative mode (Plucker & Beghetto, 2004), or the effects whereby creative training in one mode transfers to another (as discussed earlier in relation to the similarities and crossovers between language and music). A hybrid view is now more prevalent (Baer, 2010; Plucker & Beghetto, 2004), acknowledging that some aspects of creativity transcend modes, while others are specific to that mode. This leads to Plucker and Beghetto’s (2004: 159) ‘richer question’: which aspects of creativity are general, and which are specific to particular creative modes?

In a multimodal approach to answering Plucker and Beghetto’s question, Jordanous and Keller (2012) use language analysis to identify general aspects of creativity and aspects of creativity specific to musical improvisation. To identify cross-domain characteristics of creativity, they analyse the language used in academic discussions of creativity in comparison with the language used in academic papers not on creativity. Using the log likelihood ratio (LLR) statistic to identify words that appeared significantly more often in the writings on creativity, semantic similarity measures and clustering methods are applied to the identified words. As a result, fourteen key components of creativity are highlighted (see Figure 19.3). These fourteen components represent aspects and factors commonly related to creativity across domains.

Figure 19.3 Fourteen key aspects of creativity

Source: Jordanous and Keller (2012)
While each of the fourteen components in Figure 19.3 contributes to creativity in some way, some are more important in a given domain than in others. To identify what characterises a specific type of creativity in a certain mode, we can study the relative importance of each of these components in that creative mode. As an example, Jordanous and Keller (2012) use these linguistically derived components to investigate creativity in musical improvisation. Thirty-four participants with a range of experience in musical improvisation (from ‘listener, but non-musician’ to ‘expert improviser’) were questioned on what creativity meant to them in the context of musical improvisation. The components in Figure 19.3 were used to analyse responses. Based on occurrences of the components of creativity in the participants’ responses, Jordanous and Keller (2012) conclude that three of these components are of primary importance for creativity in musical improvisation: social communication and interaction; domain competence and intention; and emotional involvement. In other words, the most important contributors for creative musical improvisation are the ability to interact and communicate with others, strong relevant musical knowledge and abilities, and the desire for and emotional involvement with the improvisational process. The relative importance of each component is pictured in Table 19.1.

What we have seen here, and indeed throughout this chapter, is that creativity in language shares various commonalities and shared characteristics with creativity in music, and indeed with other manifestations of creativity. The common characteristics that occur across multiple creative modes underline the validity of multimodal creative work such as the examples that we have seen in this chapter. It is also useful, though, to study what distinguishes one type of creativity from another, resulting in specific understanding of creativity in different modes. The combination of both routes of study enable us to construct a more informed perspective when considering multimodal creativity such as the combination of language and music.

Table 19.1 The fourteen components of creativity and how they rank in importance for creativity in musical improvisation

<table>
<thead>
<tr>
<th>Component of creativity</th>
<th>No. +ve occurrences</th>
<th>No. –ve occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social interaction and communication</td>
<td>44</td>
<td>0</td>
</tr>
<tr>
<td>Domain competence</td>
<td>43</td>
<td>6</td>
</tr>
<tr>
<td>Intention and emotional involvement</td>
<td>41</td>
<td>0</td>
</tr>
<tr>
<td>Active involvement and persistence</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>Variety, divergence, and experimentation</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>Dealing with uncertainty</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Originality</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>Spontaneity/subconscious processing</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Independence and freedom</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Progression and development</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Thinking and evaluation</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>Value</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Generation of results</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>General intellect</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Jordanous and Keller (2012)

While each of the fourteen components in Figure 19.3 contributes to creativity in some way, some are more important in a given domain than in others. To identify what characterises a specific type of creativity in a certain mode, we can study the relative importance of each of these components in that creative mode. As an example, Jordanous and Keller (2012) use these linguistically derived components to investigate creativity in musical improvisation. Thirty-four participants with a range of experience in musical improvisation (from ‘listener, but non-musician’ to ‘expert improviser’) were questioned on what creativity meant to them in the context of musical improvisation. The components in Figure 19.3 were used to analyse responses. Based on occurrences of the components of creativity in the participants’ responses, Jordanous and Keller (2012) conclude that three of these components are of primary importance for creativity in musical improvisation: social communication and interaction; domain competence and intention; and emotional involvement. In other words, the most important contributors for creative musical improvisation are the ability to interact and communicate with others, strong relevant musical knowledge and abilities, and the desire for and emotional involvement with the improvisational process. The relative importance of each component is pictured in Table 19.1.

What we have seen here, and indeed throughout this chapter, is that creativity in language shares various commonalities and shared characteristics with creativity in music, and indeed with other manifestations of creativity. The common characteristics that occur across multiple creative modes underline the validity of multimodal creative work such as the examples that we have seen in this chapter. It is also useful, though, to study what distinguishes one type of creativity from another, resulting in specific understanding of creativity in different modes. The combination of both routes of study enable us to construct a more informed perspective when considering multimodal creativity such as the combination of language and music.

Recommendations for practice and future directions

Multimodal creativity involving language and music can take a vast variety of forms, many of which hold great potential for further investigation. This chapter has shown that the
similarities between language and music are wide-ranging; in fact, it is not uncommon for people to treat music as a language, although this is not universally so. We must be careful not to over-interpret the similarities between language and music; differences between language and music exist, and we should be aware of them as we work with the two modes in creativity.

Nonetheless, several authors (for example Jackendoff & Lerdahl, 2006; Juslin & Laukka, 2003; Koelsch et al., 2005; Patel, 2008) have directly recommended multimodal study as a way of gaining insights that would be hard to achieve in treating these two modes separately. As Patel (2008: 351) puts it: ‘Comparative research on music and language can help illuminate the diversity of ways in which our mind derives meaning from structured acoustic sequences.’ Various multimodal research findings have been discussed in this chapter that illustrate Patel’s point. These include practical work, such as the use of appropriate generated music to help people to complete expressive writing in a more enjoyable fashion (Gonzales et al., 2010), and more theoretically oriented work, such as the work by Jordanous and Keller (2012) in applying analytical methods to language to learn about creativity in music.

As we saw in the last section of this chapter, language and music creativity are not alone in sharing numerous areas of crossover. Several common aspects exist across different creative modes, which contribute towards characterising creativity as a concept. Studying the commonalities affords a more tangible understanding of creativity in general, and multimodal creativity is a powerful tool for such study. Overall, there is great potential in sensibly approaching the combination of language and music in creativity; many fruitful avenues lie open for exploration.

Related topics
creativity and dialogue; language, creativity, and remix culture; poetry and poetics; silence and creativity

Note
1 Many thanks to Jennifer MacRitchie, Mona Mamoun, Caroline Hills, Simon Fox, and Rodney H. Jones for their constructive comments in shaping this chapter.

Further reading

Cooke argues for the controversial hypothesis that music is a language, concentrating on communication of emotions.


Jordanous and Keller identify aspects of creativity that are present to some degree across all creative modes and study how these aspects are prioritised in an individual creative mode (by means of a case study investigating musical improvisational creativity).


Lerdahl and Jackendoff provide a seminal work on grammar-based approaches to the study of music, working as a team consisting of a composer/music theorist (Lerdahl) and a linguist (Jackendoff).

Mithen adopts an evolutionary perspective in discussing the links between music and language.


Patel offers a thorough overview of research carried out investigating commonalities and differences between music and language from a neurological perspective.

References


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